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AN EIGHTEENTH CENTURY HISTORIC SITE IN EMMET  
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ARCHAEOLOGICAL RESEARCH AT FORT MICHILIMACKINAC, AN  
EIGHTEENTH CENTURY HISTORIC SITE IN EMMET COUNTY,  
MICHIGAN: 1959-1966 EXCAVATIONS  
Volume I

By

Lyle M. Stone

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## ABSTRACT

### ARCHAEOLOGICAL RESEARCH AT FORT MICHILIMACKINAC, AN EIGHTEENTH CENTURY HISTORIC SITE IN EMMET COUNTY, MICHIGAN: 1959-1966 EXCAVATIONS

By

Lyle M. Stone

The site of Fort Michilimackinac (ca. 1715 to 1781), located in Emmet County, Michigan, has been under archaeological investigation since 1959. This report is an analysis, interpretation, and formal description of the archaeological data derived from the site between 1959 and 1966. The purposes of this report are: (1) to interpret the site in terms of the social and cultural phenomena by which it was characterized and which are reflected both in its archaeological and historical documentation; and (2) to explain, illustrate, and test a formal approach to historic artifact analysis. This approach is based on a formally structured taxonomy, termed "formal classification."

The conceptual framework for this study is based on the position that differences in the formal, temporal, and spatial dimensions of archaeological remains are the products of differential cultural behavior. As such, cultural behavior can be delineated through an analysis of archaeological remains.

This study has demonstrated that there were important cultural differences between the French and British occupations of Fort Michilimackinac and that these differences are directly reflected in the

formal, temporal, and spatial dimensions of the archaeological remains from the site. The site's occupation during the French period of control (ca. 1715 to 1761) has been characterized as a fortified trading settlement which exhibited a low level of cultural differentiation and social complexity. The French occupants during this period were engaged primarily in fur-trade activities and were largely dependent on locally available resources for subsistence and economic support. In contrast, the site's occupation during the British period of control (1761 to 1781) is characterized as a functionally specific military post which exhibits a high level of cultural differentiation and social complexity. The occupants of the site during this British period of control were primarily engaged in military activities or in activities which directly supported the British military garrison. As such, these occupants were dependent on externally available resources for their subsistence and economic support.

Formal classification has been demonstrated to be a productive taxonomic method which permits a systematic analysis of the site's artifacts in terms of their temporal, spatial, and formal dimensions. Formal classification is thus a useful method in facilitating the interpretation of different cultural phenomena on an historic site.



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This archaeological project and subsequent report preparation have been supported by the State of Michigan, Mackinac Island State Park Commission. I would especially like to acknowledge Dr. Eugene T. Peterson, the Director of this agency, and Dr. David A. Armour, Assistant Director, for their technical advice and patience in seeing this project through to a conclusion.

Members of the Michigan State University Museum staff, including its Director Dr. Rollin H. Baker, Dirk Gringhuis, Dora Kelley,

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A number of other persons assisted in the preparation of this thesis: Beatrice Monahan assisted in the formal classification of all artifact categories; Denise Fitch edited the entire report; and Marjorie Labyak is responsible for all line-drawn artifact illustrations. I would especially like to acknowledge Barbi Mel, the report typist, whose ability, patience, and responsible criticism contributed substantially to the form and organization of the thesis.

I would also like to thank several individuals not directly associated with this project: Bruce Fry, John Dunton, and John Fortier, all of Fortress of Louisbourg National Historic Park, Nova Scotia, contributed through personal communication to the organization and content of this report. In addition, T. M. Hamilton, associated with the Museum of the Great Plains, Lawton, Oklahoma; J. Jefferson Miller, Associate Curator of the Division of Ceramics and Glass, Smithsonian Institution, Museum of History and Technology; and Donald Chaput, Chief Historian for the Michigan Historical Commission, Lansing, contributed materially to the content of this report.

In acknowledging the assistance of these persons, I wish to emphasize that the responsibility for the content of this thesis is completely my own.

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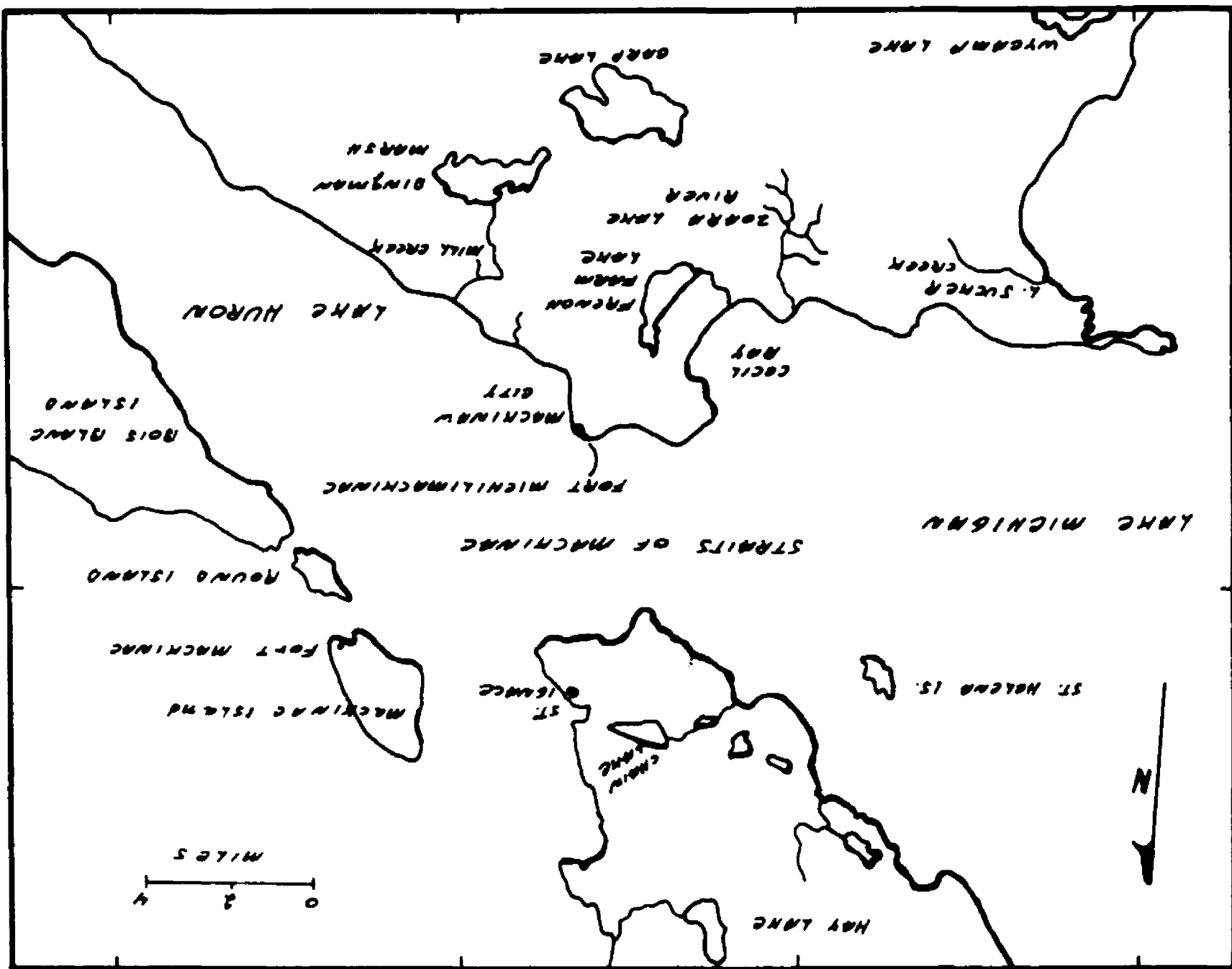
## CHAPTER I

### INTRODUCTION

This report is an archaeological study of Fort Michilimackinac, an eighteenth century historic site in Mackinaw City, Emmet County, Michigan (Figure 1). Fort Michilimackinac was occupied for approximately 66 years; it was controlled first by the French from approximately 1715 until 1761 and then by the British until 1781. During this period the fort was located at the extreme northern tip of the Lower Peninsula of Michigan. The fort was dismantled and re-established on Mackinac Island, in the Straits of Mackinac, during the winter of 1780 and 1781. The relocated site, known as Fort Mackinac, was controlled by the British from 1780 until 1796 and from 1812 to 1815. American forces held the fort from 1796 to 1812 and from 1815 until 1895. The focus of this report is the earlier Fort Michilimackinac, which has been under continuous archaeological and historical investigation since 1959. The archaeological data presented here have been obtained as a result of a joint research program between the Mackinac Island State Park Commission and the Michigan State University Museum and Department of Anthropology.

The site of Fort Michilimackinac was nearly 60 percent excavated between 1959 and 1969 and produced over 500,000 historic and prehistoric artifacts, numerous structures, structural components,

**Figure 1**  
**Mackinac Straits Area**



and features. The foremost objective of this research has been to provide information on the basis of which structures and period settings are reconstructed. The site's stockade and seven structures have been reconstructed since 1959 as part of a continuing restoration program. Two other objectives of this research have been the publication of archaeological and historical research reports and the training of University students in the methods of historic sites archaeology.

### Research Objectives

The purpose of this study is to interpret the site of Fort Michilimackinac; in terms of the social and cultural phenomena by which it was characterized and which are reflected in the spatial and temporal dimensions of its artifactual content. This purpose is accomplished through an analysis and interpretation of the artifactual remains which have been recovered between 1959 and 1966. Since 1966 was the final season during which the author supervised excavations at the site, it was selected as a terminal date for this report. The site is still under investigation, however, and continues to yield important archaeological data.

A second, related objective is to explain and illustrate a formal approach to historic artifact analysis. This approach is based on a formally structured taxonomy, or formal classification, defined as the hierarchical ranking of formal properties on the basis of their relative importance or significance.

### Theoretical Basis in Historical Archaeology

These objectives reflect a distinctive orientation within the field of historical archaeology. Since this is a relatively new field of study, characterized by different research methods and objectives, it is necessary to briefly describe these differences in order to place this report within its proper intellectual setting.

The study of historical sites using an anthropological-archaeological approach is relatively new; the quality of results, until quite recently, have been somewhat substandard when compared with the results of prehistoric site research. There are several reasons for this, the most important of which is the relatively short period of time during which historic sites have been investigated by qualified persons who employ standard archaeological techniques. In addition, historic site archaeologists have traditionally been more interested in evaluating structural evidence for reconstruction and restoration purposes, rather than in studying artifacts and their significance for site interpretation. This emphasis has limited both the comparative value of artifact descriptions presented in many historic site reports as well as the interpretation of cultural phenomena which characterize these sites.

Historic site archaeology has increased in quantity and quality during the past 10 years.<sup>1</sup> The excavation of historic sites has now become an accepted and justifiable endeavor for both historians

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<sup>1</sup>See Barka (1965); Russell (1968); and Williams (1966) for reviews of the history of this field.



and anthropologists, although neither can claim to have been a major influence in the development of this new field. The results of research thus far have clearly shown that one must have an understanding of both anthropological and historical methods and objectives.

Historic site archaeology is presently being conducted by investigators who hold differing views on the theory, methods, and objectives of their research. This situation is characteristic of any new and developing fields of science and should be regarded as a desirable trait in this respect. One common approach is that of the anthropologist who conducts archaeological research to obtain data of relevance to cultural problems. This person is trained to conduct research in a highly objective manner and often utilizes scientific methods and techniques. These systematic procedures are necessary in view of the anthropologists' orientation and research objectives--objectives such as the interpretation of the social and political phenomena characteristic of the historic era and site under investigation. The inter-site evaluation of archaeological remains is an essential part of this approach to the study of cultural phenomena. Thus, the anthropologist speaks in terms of empirical evidence which can be quantified, and objectively compared and evaluated. A second common approach is that of the historian who has acquired the necessary techniques of field archaeology. This person is trained in the humanities and conducts archaeological research for different reasons which are often phrased in terms of explicating or supplementing the existing historical record. It should be stressed that although these objectives characterize the work of many archaeological

historians, they do not necessarily apply to historians in general, many of whom stress research objectives very similar to those of the anthropologist. As Spaulding (1968:35) notes below, however, the approaches of anthropology and history differ in the degree of explicitness applied to explanations. The type of comparative data thus necessitated by an anthropological approach is neither necessary for nor is it produced by the archaeological historian's approach. Spaulding notes that:

history and science [anthropology] can be distinguished by the degree of explicitness of the covering laws (or empirical generalizations) which make explanation possible. History and science share a set of techniques for producing warranted or intersubjectively verifiable knowledge, but the explanatory generalizations of history are characteristically matters of common knowledge on human dispositions or motivations, and they are quite properly implicit rather than explicit in the historical narrative . . . . History has a particularizing quality (note the phrase "for historical reasons"); science, a generalizing one.

Symptoms of this difference in research orientation within the field of historical site archaeology are revealed in the following views:

1. The classification of historic artifacts is a waste of time since available historical evidence provides the information necessary for artifact interpretations (Noël Hume 1967: 104-105; 1969: 13).
2. Anthropologists are amateur archaeologists (Noël Hume 1961: 256).

3. Archaeologists trained in anthropology cannot do an adequate job of excavating historic sites since they are not familiar with building techniques and artifacts used during the historic period (Barka 1965: 15-16).
4. Anthropology-oriented theory acts to confine the progress of the field of historical archaeology (Walker 1967: 32).
5. Historic site archaeologists must be trained as historians rather than as anthropologists (Nöel Hume 1968: 2; Harrington 1955: 1129).

In contrast, the following views may be presented:

1. Anthropologists are able to interpret archaeological evidence in terms of problems which historians neither realize nor are capable of interpreting (Fontana 1965: 64).
2. Historic site archaeological data has a great potential for purposes of anthropological interpretation (Cleland and Fitting 1967: 135).
3. Nöel Hume's failure to comprehend anthropological objectives deprives his work of relevance to the interpretation of anthropological problems (Cotter 1969: 1216).

The point made by Cotter is most critical to the field of historical archaeology at present. It is characteristic of the historian to gather and present data which cannot be used to meet anthropological objectives. As a result, investigators wishing to interpret their

sites in anthropological terms are limited in the number of sources available which provide data of a caliber sufficient for comparative research. On the other hand, data generated by an anthropological approach can be of use to the historian.

Although the objectives of an historical approach may be valid, I find the historians' characteristic disregard for and antagonistic view of an anthropological approach unfortunate. The basis for this critical view of an anthropological approach, as expressed by Noël Hume and others, has limited the quality and quantity of data available for comparative research. This position has not only limited the realization of anthropological objectives, but it has restricted the nature of the interpretations which may be derived by the historian from archaeological evidence.

It should be clear from the content and organization of this study that an anthropological approach is stressed. This should not, however, invalidate its use by persons with an historical orientation. This study has been written, with the two views in mind, as an attempt to exemplify--through interpretation--the types of data upon which an anthropological approach is based.

#### Limitations of Study

Artifact descriptions in this report are presented on three levels:

1. Categories considered of major importance in terms of cultural interpretations are described in detail in Appendix B.
2. Other categories present, but of lesser interpretative value, are listed and described very briefly at the end of Appendix B. Interested individuals may request additional information on these categories from the author.
3. Categories which are presently being studied or reported on by other individuals are either omitted from this report or are presented in an abridged form. These categories are:
  - a. Burials. The Fort Michilimackinac human skeletal remains are currently being studied by Dr. Terrance Phenice of the Michigan State University Department of Anthropology.
  - b. Gun Parts (except gunflints). Gun parts are omitted from this report. A manuscript on the Fort Michilimackinac gun parts has been prepared by Jack Mathey.
  - c. Glass. Glass artifacts are omitted from this report. A summary report by Margaret Brown of the Michigan State University Department of Anthropology is presently being edited for publication by the Mackinac Island State Park Commission.
  - d. Ceramics. A report on the ceramics recovered during the 1959 through 1965 excavation seasons is currently in press at the Smithsonian Institution's Museum of History and

Technology. This report has been co-authored by Lyle M. Stone and J. Jefferson Miller II, Associate Curator of the Division of Ceramics and Glass at the Smithsonian Institution's Museum of History and Technology. The ceramic types identified will be briefly described in the present report, along with additional information on metric properties and distributional associations. The analysis of individual ceramic types is limited to that required for the interpretation of specific contextual problems.

- e. Floral and Faunal Remains. Faunal analysis has been performed on selected samples by Dr. Charles E. Cleland (n.d.) of the Michigan State University Department of Anthropology and Museum, and by Elizabeth A. Butsch of the Michigan State University Department of Anthropology, who studied samples recovered during the 1967 through 1969 excavation seasons. Floral remains from Fort Michilimackinac (1959 to 1966) have not been analyzed, although remains from later years have been studied. Neither floral nor faunal remains are described in this report.
- f. Indian Artifacts. Aboriginal ceramics and flint and bone tools have been found at the site. The majority of these do not relate to its historic component; therefore, a

frequency distribution by tool and ceramic category only is presented.

- g. Micmac Pipes. Paul How of the Michigan State University Museum is currently preparing a descriptive report on the Fort Michilimackinac stone pipes. Micmac pipes have been omitted from the present report.
- h. Unidentifiable Artifacts. A number of unidentifiable brass, iron, cooper, lead, and pewter objects have been recovered but are not included here.

In addition, structural descriptions and interpretations are presented selectively. All structures and structural components which have been identified and interpreted are described. Structural components which cannot be interpreted at this time are not described.

## CHAPTER 2

### DESCRIPTION, HISTORY AND EXCAVATION OF THE SITE

#### Description

Fort Michilimackinac is located in Mackinaw City, Emmet County, Michigan (SE 1/4 NE 1/4 Sec. 12, T.39N., R.15E). The site is situated on the south side of the Straits of Mackinac and is located within the boundaries of Fort Michilimackinac State Park. The Straits of Mackinac is a five-mile wide water passage between Lakes Huron and Michigan. This Straits was historically important and is presently one of the most prominent geographical features of the Upper Great Lakes, since it is the point of closest proximity between Michigan's two peninsulas. During the seventeenth and eighteenth centuries, the Mackinac Straits area provided a strategic location for both military and fur-trade activities. To the north of the Straits is the northern or Upper Peninsula of Michigan and the St. Mary's River passage into Lake Superior and southern Ontario. On the south is the Lower Peninsula of Michigan, bordered on the west by Lake Michigan and on the east by Lake Huron. A number of prominent geographical features characterize the Straits area including islands, inland lakes, and streams. Mackinac Island, on which Fort Michilimackinac was relocated during the winter of 1780 and 1781, lies 8 miles to the northeast of the original site. Immediately north across the Straits is the present village of St. Ignace where Fort de Baudé, the original seventeenth century French garrison



in the Straits region, was established; its exact location has not yet been determined.

The site is characterized by a low but noticeable relief, primarily along the reconstructed western stockade curtain which is in the same position as the stockade which existed during the period of British control. Windblown sand has accumulated along both sides of this curtain to a maximum depth of 3 feet 6 inches in the southwest corner. This is the area of maximum elevation within the fort enclosure, at 600 feet above sea level. From the southwest corner, the ground surface slopes downward to the northeast to a minimum elevation of 585 feet above sea level. The entire site is underlain by at least three different Algoma beach terraces. The terrace features, as well as an accumulation of windblown sand along the west side of the enclosure, account for the differential topography of the site.

### History

This history of the Upper Great Lakes area and of Fort Michilimackinac was compiled from a number of primary and secondary sources. Documentary information relating to specific structures at Fort Michilimackinac is presented in Appendix A, which includes data supplemental to structural descriptions. Although Fort Michilimackinac was not established until approximately 1715, the present discussion begins in the seventeenth century. The earlier history of the Upper Great Lakes is critical to understanding the factors which led to the

establishment of this post in the early part of the eighteenth century.

Between 1650 and 1715, the Upper Great Lakes area underwent a rapid settlement by French missionaries, traders, and soldiers. One of the earliest trading expeditions to the Upper Great Lakes was that of two French traders: Medard Chouart, Sieur de Groseilliers, and Pierre Esprit Radisson. Radisson made his first trip to the Lake Superior region in 1654 and returned to Quebec in 1656 with many beaver furs of high quality. Groseilliers accompanied Radisson on a second trip to the area between 1658 and 1660 (Innis 1965: 36; Bald 1954: 26). These early trading expeditions established valuable contacts for the French and motivated the government of New France to expand its trading interests to the west. French traders were operating near Sault Ste. Marie, at the mouth of Lake Superior, by 1660 (Fowle 1925: 89). The first permanent missionary settlement in the region was established at Sault Ste. Marie in 1668 by the Jesuit Fathers Louis Nicolas and Jacques Marquette (Fowle 1925: 98). This mission and the French trade center at Sault Ste. Marie attracted the settlement of displaced Ottawa who had occupied areas along the southern shore of Lake Superior. By 1669, the mission was referred to in The Jesuit Relations as that of the Ottawa (Thwaites 1899: Vol. 51, 61). The Chippewa were also important inhabitants of the Sault region at this time (Kinietz 1965: 318).

Shortly after the movement of French traders to the west and into the Lake Superior area British trading interests were secured to the north. The Hudson's Bay Trading Company was established in 1670

and soon came to be represented by numerous small trading posts in the James Bay area. The Hudson's Bay enterprise, supported by cheaper goods and higher fur prices, rapidly became a serious threat to French interests by creating changes in Indian trade patterns and alliances.

By 1670, European influence in the Upper Great Lakes extended southward to the Straits of Mackinac area. In 1671, a mission was established by Father Jacques Marquette on the north side of the Straits of Mackinac at St. Ignace. This mission served as a focal point for groups of Ottawa who had entered the area from the Chaquamegon Bay region of southwestern Lake Superior, as well as Chippewa from the north and Huron from the east. By 1683, St. Ignace had also begun to serve as a French military post, garrisoned by 30 soldiers under the command of Daniel de Grosollon, Sieur dul'Hut (Dulhut) (Fowle 1925: 89). Fort de Baude was established adjacent to the mission by Louis de la Porte, Sieur de Louvigny in 1689 (Bald 1954: 43; Surrey 1926: 30-31). The maintenance of a fortified post at this strategic location was a response to King William's War (1689 to 1697) and to the intrusion of British traders from Albany, New York, into the Mackinac Straits after 1686. This competitive threat is documented in a letter from Denonville to Seignelay, dated 1686 (O'Callaghan 1855: Vol. 9, 297) in which M. de Denonville, Governor General of Canada, noted that:

Missilimakinac is theirs. They have taken its latitude; have been to trade there with our Outawas and Huron Indians, who received them cordially on account of the bargains they gave, by selling their merchandise for Beaver which they purchased at a much higher price than we.

Although this encounter was short-lived and took place at a time when the French post was undermanned, it did demonstrate that British

traders could penetrate French territory and establish favorable trade contacts with the Indians.

Antoine de Lamonthé Cadillac succeeded Louvigny as commandant of Fort de Baude in 1695. In 1696, Louis XIV ordered the Upper Great Lakes closed to the fur trade. This proclamation was issued to control the oversupply of furs due to increasing trading activity in the Upper Great Lakes. As a result, Cadillac secured permission to establish a fort at Detroit (Fort Ponchartrain), although this was a direct exception to the stipulations of the decree of 1696. Cadillac was able to convince many of the Indians remaining in the Straits to join him at Detroit (Fowle 1925: 189). The Jesuit missionaries were left at St. Ignace with only a small parish, and, by 1705, had abandoned the mission and returned to Quebec (Surrey 1926: 30-31). Although the mission was abandoned in 1705, there is some evidence to indicate that a new mission or fort was established in 1706 (Surrey 1926: 125; Marest to Vaudreuil 1706). In addition, we know through correspondence between Pontchartrain and Vaudreuil in 1706 (O'Callaghan 1855: Vol. 9, 775, 779) that Father Marest returned to Michilimackinac in 1706 and that the area continued to be frequented by French traders and Indians during this period.

By 1710, the government of New France recognized the importance of maintaining military control of the Straits of Mackinac area and initiated plans to re-establish a post at the Straits (O'Callaghan 1855: Vol. 9, 849; De Vaudreuil to Pontchartrain, Oct., 1710). Monsieur de Lignery, a captain in the French army, was dispatched to Michilimackinac in 1712 to secure the alliance of local Indians against the Fox,

who had disrupted trade relations with the Indian allies of the French, and the Iroquois, who were British trading allies (O'Callaghan 1855: Vol. 9, 865; De Vaudreuil to Pontchartrain, Nov., 1712). De Lignery apparently spent several years in the Straits before the post was actually constructed. The proposed establishment of this post is again referred to in a letter written by Captain de la Forest in 1714 (O'Callaghan 1855: Vol. 9, 866-867). Maxwell and Binford (1961: 14) note that:

the original plan for the expedition against the Fox was to send 20 troops under Captain D'Eschailions, Lieutenant Lanous, and Ensign Belestre from Montreal to Michilimackinac to arrive early in August, 1715 . . . . However, the supplies and troops from Montreal did not arrive at the Straits in time for the coordinated operation, although presumably they did arrive later that year.

Maxwell and Binford (1961: 10) suggest that:

it appears likely that sometime between 1715 and 1720 De Lignery with several hundred men on his hands waiting for supplies from Montreal put them to work in the time-honored military tradition by building a stockaded fort on the other side of the river, meaning on the south shore of the Straits.

An anonymous map in the Ayer Collection, Newberry Library, believed to date from 1717 is also referred to by Maxwell and Binford (1961: 11-12), (Figure 2). The map

shows a stockade, square, with square bastions, on the south side of the straits, as well as a fort and mission on the north side of the Straits. The caption, indicating the fort on the south side of the Straits, states that the former fort (at St. Ignace) has been abandoned; that the fort on the south side of the Straits has a commandant, a few settlers, and even some French women, and that in 1716 about 600 *Coureurs-de-bois* were gathered there during trading time.

A later reference gives the year 1717 for the founding of Fort Michilimackinac. This date is mentioned in a letter dated 1767 by John

**Figure 2**

**Anonymous Map of Machinac Straits, ca. 1717**



Porteous, an English trader at Michilimackinac, in which he states that:

Michilimackinac is Situate on a large cape which forms the Southern side of the Straits between the Lakes Huron & Michigan, has Lake Huron on the E. & S.E., and on the S. and W., Lake Michigan Lat. 45° 18, 'Long. 85.\* This post was first established upon an Isl<sup>d</sup> on the E. entrance of the Straits, from thence moved to the east point of the northern cape, and afterwards moved westwards, about 2 Miles, about the middle of the Straits; & in the year 1717, by request of the Ottawas whose village then stood here, was again moved over where it now stands to protect them from some of the Nations they were then at war with.

Charlevoix's journal clearly illustrates that Fort Michilimackinac was in existence on the south side of the Straits by 1721 (Charlevoix 1744: 279). The founding date of Fort Michilimackinac on the south side of the Straits is thus narrowed to between 1714 and 1721, with the most probable date, based on the evidence presented above, falling between 1715 and 1717. Maxwell and Binford, using essentially the same evidence, concluded that the post was established about 1715 (Maxwell and Binford 1961: 113).

A number of factors contributed to the establishment of this post. With the close of the Queen Anne's War in 1713, finances were once again available to support renewed trading interests and military control of the Upper Great Lakes. Although anticipated Fox conflicts gave impetus to the construction of the fort, other long term reasons were extremely relevant to its establishment. A post was necessary at the Straits in order to discourage competition from the Hudson's Bay Company to the north, to control the activity of the unlicensed French traders, the Coureurs-de-bois, to secure the alliance of the local



Indians, and to serve as a focal point for anticipated fur trading expeditions.

The Fox War of 1716 was commanded by Sieur de Louvigny. Louvigny left Montreal in May of 1716 and arrived at Michilimackinac during July or August with at least 300 Frenchmen (Thwaites 1902: Vol. 16, 342; Vaudreuil to Council of Marine, Oct., 1716). There, he combined forces with de Lignery to produce a total troop contingent of nearly 800 French and Indians. This force proceeded to the fortified Fox settlement near Green Bay, Wisconsin, and subdued the Fox within three days. Louvigny immediately departed for Quebec upon his return to the Straits, leaving the command of the fort to de Lignery with a garrison of no more than 23 soldiers. Louvigny returned to the Straits and relieved de Lignery of his command of the fort in 1717.

In 1720, Louvigny retired his command of the post to Louis Daniel Liénard de Beaujeau. From 1720 until 1761, Fort Michilimackinac was governed by the following French commandants (Chaput 1970: personal communication):

Louis Liénard de Beaujeau	1720-1723
Constant Le Marchand de Lignery	1723-1727
Charles Renaud Dubuisson	1729-1730
Jacques Testard de Montigny	1730-1733
Jean-Baptiste-René Le Gardeur de Repentigny	1733
Pierre Joseph Céloron de Blainville	1734-1742
Jean-Baptiste Jarret de Verchères	1737
	1741-1744
Louis de La Corne	1745-1747
Charles Joseph de Noyelle	1746-1747
Chevalier de La Vérandry	1747
Jacques Le Gardeur de St-Pierre	1747-1749
Francois Duplessis-Faber	1749-1752
Louis Liénard de Beaujeu	1752-1760

Louis Herbin	1754-1757
Louis Le Verrier	1757
Charles Michel de Langlade	1760-1761

During this period, the size of the post garrison underwent very little change. In 1729 there were no more than 35 soldiers, including officers, at the fort. In 1747 the troops numbered only 28. In addition to military personnel and their families, the fort housed licensed traders, craftsmen such as blacksmiths, missionaries, and itinerate Coureurs-de-bois. Local groups of Ojibwa and Ottawa frequented the fort to trade.

The early French post at Michilimackinac is thought to have consisted of a small square stockade with bastions, a mission, two guard houses and a 40-foot long structure to house military personnel (Thwaites 1902: Vol. 16, 386-387; De Lignery to Toulouze, 1720). By 1760, the area within the stockade had increased to nearly three times its original size as a result of the expansion of the stockade perimeters and the construction of additional structures. This growth is thought to have proceeded through several phases of stockade expansion. Maxwell and Binford (1961: 27-38) and Binford (1961: 30-40) have summarized these expansion phases. Additional information on stockade expansions has been recovered since these summaries appeared and is presented in Chapter 4 and Appendix A.

From 1715 until 1760, the French garrison was involved in very little military activity and served primarily to protect traders and maintain friendly relations with the nearby Ojibwa and Ottawa. The Indians were occasionally mustered, along with the French garrison, to fight against the British and allied Iroquois to the east

(Havighurst 1966: 51-57). In 1739, commandant Sieur de Celoron and the post garrison accompanied Baron Longueuil with a combined force of 442 Canadians against the Chickasaw in the Yazoo country of Mississippi. This conflict with the Chickasaw was relatively ineffectual, because of Indian desertions, lack of supplies, bad weather, illness, and poor leadership. The expedition terminated after several skirmishes with the Chickasaw which resulted in meaningless negotiations (Caldwell 1938: 465-442).

The capitulation of the French forces at Montreal to General Jeffery Amherst in September 1760 ended the French and Indian War (1744 to 1760) and gave control of the Upper Great Lakes to the British. After receiving news of the end of hostilities, the French garrison at Michilimackinac, under Captain Louis de Beaujeu, left to joint French settlements in Illinois (Havighurst 1966: 58). Charles de Langlade, second in command, remained at the post and turned it over to British forces under Captain Henry Balfour in September 1761. Balfour immediately departed, leaving the post under the command of Lieutenant Leslye and a garrison of 40 troops (Maxwell and Binford 1961: 13).

The articles of capitulation, agreed upon in Montreal on 8 September 1760, were very favorable to the remaining French inhabitants of Fort Michilimackinac. Religious freedom was guaranteed, and the French traders and inhabitants were permitted to retain possession of their property and goods (Nish 1965: 153-155). The latter proved to be a matter of concern to the British commandants who were forced to rent troop quarters from the French inhabitants.

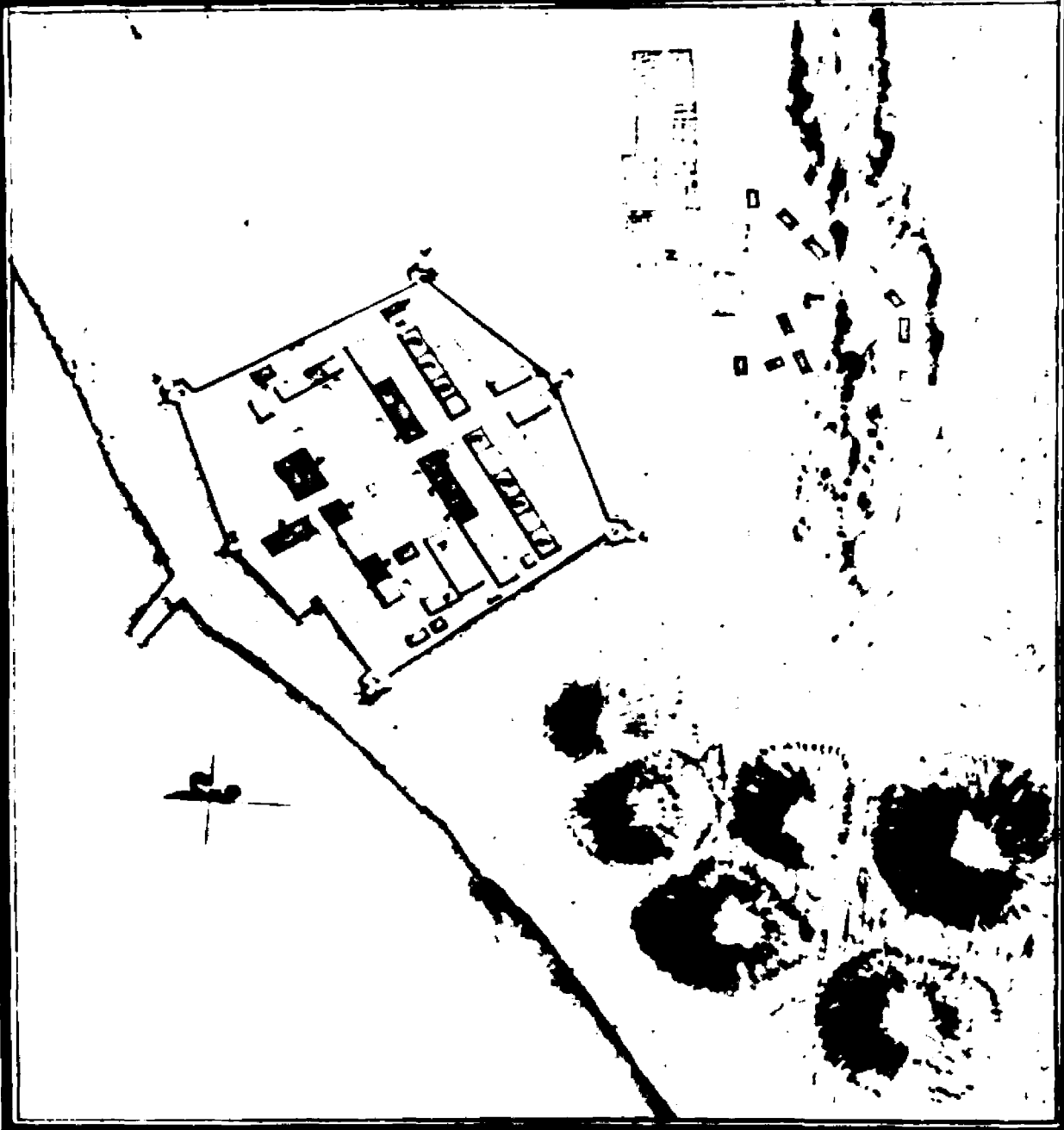
The British maintained the Fort more strictly as a military post than as a trading post or "fortified settlement," as had been the case during the French period (Binford 1962: 50-52). During the British period, there was no further expansion of the fort's perimeter although occupants and traders built cabins outside of the fort enclosure.

Three maps were drawn of the fort during the first decade of British control; the Magra Map of 1766 (Figure 3), the Nordberg Map of 1769 (Figure 4), and the anonymous (Crown Collection) Map of 1765 (Figure 5). Although these maps are of limited use for exact measurement purposes, they do show the approximate position of many of the buildings which existed between 1760 and 1780 and indicate the position of many of the remaining French period structures.

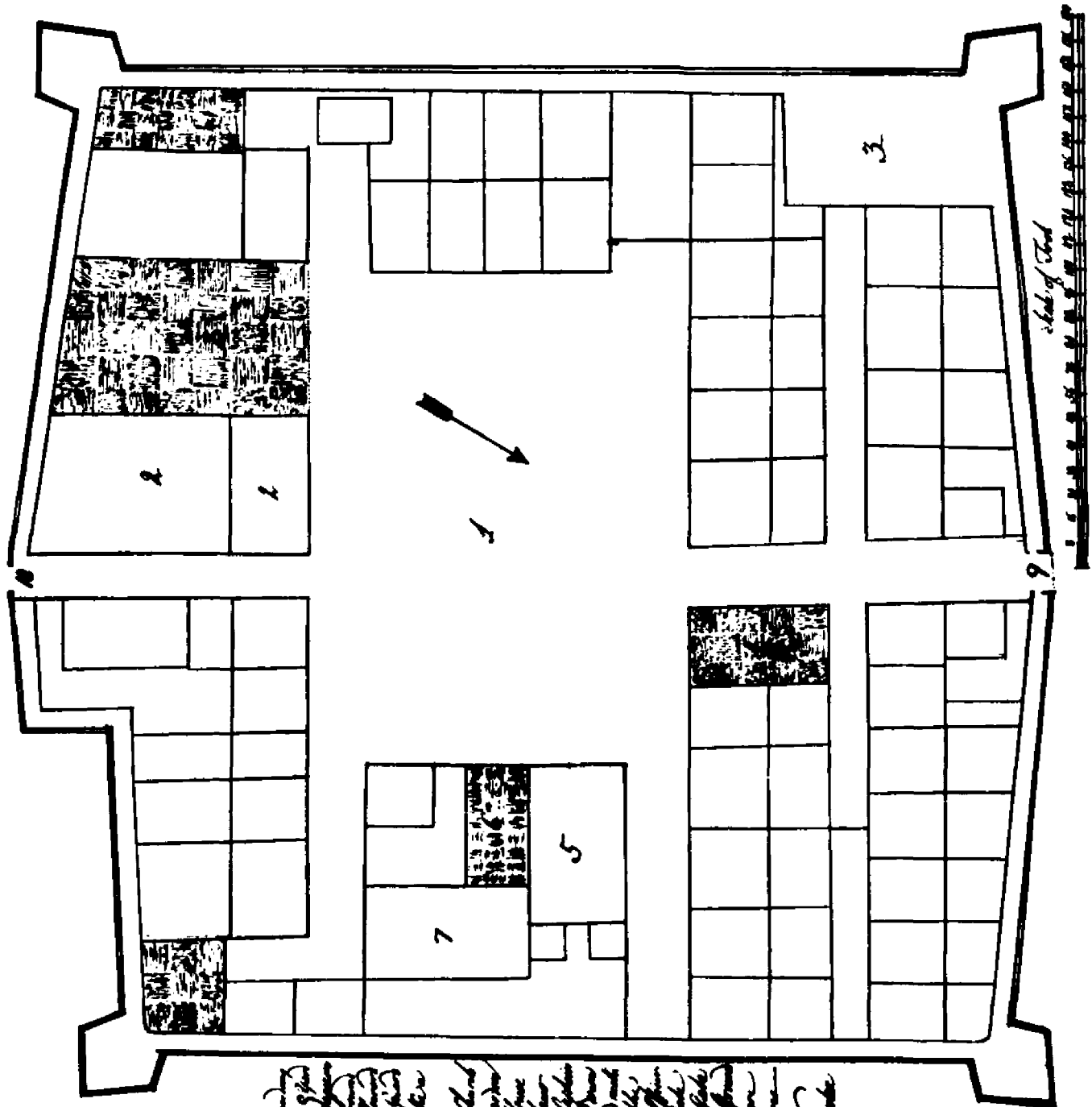
Both the population and the fur trade activity at Fort Michilimackinac increased during the period of British control. The change from French to British trade policies was in part responsible for this growth. Prior to 1761, the French had administered the fur trade through the sale of monopolies and trade permits. This system was unsatisfactory, since the existence of monopolies tended to increase the cost of trade goods (Jackson 1930: 235-236). The British government removed all monopolies and previous trade restrictions and thereafter confined the fur trade in the Great Lakes to five licensed posts: Kaministiquia, Michilimackinac, LaBaye, Detroit, and Ouatanon. A license system was implemented which permitted anyone to carry on trade from those posts. The Indians were required to carry their furs to one of the five posts and were not extended credit for trade goods as had

**Figure 3**  
**Magra Map**

Sketch of the  
at Midland



**Figure 4**  
**Nordberg Map**



1. The house  
 2. The barn  
 3. The stable  
 4. The carriage house  
 5. The garden  
 6. The orchard  
 7. The pond  
 8. The mill  
 9. The windmill  
 10. The tower

THE NOBLESSE MAP



**Figure 5**  
**Crown Collection Map**



been the practice during the French period (Jackson 1930: 244). Besides the increase in private traders at the fort, the number of troops increased after 1761, to a garrison of over 100 soldiers in 1781.

Fort Michilimackinac was attacked and captured by a group of local Ojibwa on 2 June 1763 as a part of the Pontiac uprising. Twenty-one of the 35 British soldiers and one British trader were massacred. Nearby Ottawa released the surviving soldiers and traders and took them to Montreal and safety (Armour 1966: 43, 59, and 67). The post was not reoccupied by British forces until 1764 when Captain William Howard arrived with a contingent of 80 troops. Howard was relieved by Major Robert Rogers and 68 men in 1766. The succeeding commandants were: (Maxwell and Binford 1961: 14-16)

Captain Lieutenant Speismacher	Dec. 1767 - July 1768
Captain Beamsley Glazier	July 1768 - May 1770
Captain Turnbull	May 1770 - July 1772
Captain John Vattas	July 1772 - June 1774
Major Arent S. DePeyster	June 1774 - Oct. 1779
Lieutenant Governor Patrick Sinclair	Oct. 1779 - 1781

Numerous buildings were constructed and rebuilt at the fort after 1766. A new barracks to house at least 60 men was built in 1769. The powder magazine and provisions' storehouse were rebuilt in 1773. The civilian community of the fort grew outside of the stockade enclosure after approximately 1765. John Askin, a resident trader, noted in 1778 that "there is near to one hundred houses in the Subarbs" (Quaife 1928: 69). The Revolutionary War had immediate effects upon the post and resulted in the repair of the stockade with wood from dismantled houses, the construction of an internal stockade

to enclose the soldiers' barracks, and the leveling of sand dunes to the west of the fort which might shield attackers (Michigan Pioneer and Historical Collections 1886: Vol. 9, 387; DePeyster to Brehm, June 1779). With the arrival of Sinclair in 1779, a decision was made to rebuild the fort at a more defensible position. During the winter of 1780 and 1781 and throughout the following year, Fort Michilimackinac was dismantled and moved to Mackinac Island.

After 1781, the remains of Fort Michilimackinac deteriorated and were eventually covered over by windblown beach sand. A section of land enclosing the original site was set aside as a local park by the Village of Mackinaw City in 1857. The ownership of this enclosed area was transferred to the State of Michigan in 1904, to be administered by the Mackinac Island State Park Commission.

### Excavation

Archaeological evidence of Fort Michilimackinac was first recovered in 1932 when the park superintendent, Chris Schneider, delineated the ca. 1750 to 1781 period stockade by trenching. In 1932, the site stockade was reconstructed on the basis of this evidence. Reports of this early work indicate that the east, west, and south curtains were accurately located. There has been some question about the original location and subsequent 1960 reconstruction of the northwest bastion and north curtain. Excavations are being carried out in

this area at present (1969) to determine the exact location of the north curtain.

By 1959, the 1932 stockade had fallen into disrepair, and plans were made by the Mackinac Island State Park Commission to begin a program of archaeological and historical research aimed at the eventual complete reconstruction of Fort Michilimackinac. An agreement was reached between the Park Commission and the Michigan State University Museum to begin an archaeological program. Excavations were sponsored by the commission and were directed and carried out by personnel associated with the Michigan State University Museum and the University's Department of Anthropology. Since 1959, information has been recovered which allowed the reconstruction of seven structures; the commanding officer's house, the king's storehouse, a British trader's house, a soldiers' barracks, the church, the Priests' house, and a French period row house. The present stockade was reconstructed in 1960. Responsibility for the quality of archaeological research at the site has been held by the Curator of Anthropology at the Michigan State University Museum (Dr. Moreau S. Maxwell from 1959 through 1964, Dr. Charles E. Cleland from 1965 to 1969, and since June of 1969, by the author). Field excavations have been directed by Dr. Moreau S. Maxwell, Dr. Lewis R. Binford, Dr. Carl Jantzen, Mr. Ronald Vanderwall, Mr. Lyle M. Stone, and Dr. James A. Brown. Since 1966, the archaeological crew has been composed of anthropology students from Michigan State University. Prior to 1966, the work force was supplied by the Michigan Corrections Department,

Pellston Corrections Camp. The student training program has been partially supported by the National Science Foundation Undergraduate Research Participation Program, NSF Grant Number GY-760.

A standard method of excavation has been practiced at the site since 1959. Specific techniques have, however, varied with different investigators and different field circumstances.

Horizontal control for the site is maintained by a grid system composed of approximately north-south, east-west intersecting lines. This control system was established by Maxwell in 1959. The center line (CL), which divides the enclosure into east and west halves, runs approximately between the north and south gates of the reconstructed stockade. Each 10-foot line to the left or right of CL is designated by L or R, followed by the number of feet to which the line corresponds. Lines which divide the site into north-south segments are numbered in 10-foot increments from the zero line, which intersects the north wall of the enclosure at the north gate. Each 10-foot square is designated by the line co-ordinates which intersect its southwest corner.

Vertical control was originally based on a known elevation above sea level. This elevation was referred to as the 100-foot level with readings taken above or below it as needed. This system was abandoned in 1962 when the original vertical elevation reference point was removed by construction workers. Vertical control then changed to a system of measuring below ground surface which was at a known elevation above sea level. This system was changed in 1965 to the

one presently in use whereby elevations are measured from a datum which is the highest point of elevation within the fort enclosure. Both vertical and horizontal measurements are taken in feet and inches.

It has generally been the practice to confine an excavation unit within a 10-foot square. Occasionally, contiguous 10-foot squares are excavated as a single unit. Test trenching has been carried out, however, only on a small scale in order to gain data which would be of immediate use in planning the location of future excavations.

Although stratigraphic excavation is preferred, it has not always been possible due to factors such as depositional complexity, type and efficiency of field labor, the unstable nature of vertically exposed strata, and pot-hunter activity. In many cases, then, excavations have been conducted in units of arbitrary 3-inch levels. Different horizontal soil zones and features are thus distinguished within a 3-inch level by means of isolated 3-inch deep excavation units which conform to the bounds of a soil unit or feature. A combination of stratigraphic and isolated unit excavation has proven to be the most effective. Features such as basements, fireplaces, wall trenches, and trash pits are excavated and recorded separately. In many cases where stratigraphic excavation was impossible, separate feature numbers were assigned to major soil units, exposed on a 3-inch level, for purposes of control. The soil from each excavation unit is passed through a 1/4-inch mesh hardware screen (1/8-inch in

the case of features). Artifacts collected are placed in sacks marked with the appropriate provenience information. Artifacts are washed and catalogued as a part of each season's field work.

A number of permanent field records are taken during the course of excavation. Photographs in black and white and color are taken of each exposed 3-inch level, stratum, feature, or wall profile. Square sheets are drawn of each successive 3-inch level or stratum exposed, noting all soil differences and features within the ten-foot square. Artifacts are recorded in situ only when they appear in concentrations or alignments or when they are obviously an important item for interpretative purposes. Features are recorded both on square sheets and on smaller scale feature sheets. Photographs are taken of each feature throughout the process of excavation. Through 1966, 330 features have been recorded, and 2255 square sheets drawn. The photographic record is composed of approximately 960 color slides and 750 black and white prints. Excavation maps are maintained throughout each field season; one shows all structural data recovered in the area of excavation on a scale of 1 inch to 5 feet; and a second, on a scale of 1 inch to 20 feet, shows all structural evidence from a season in relation to the entire site. Other standard records include a limit of excavation map, a daily field log, a feature list, a photo catalogue, and written summaries of the evidence from each square in its relation to evidence from adjoining squares.

Between 1959 and 1966, 131,250 cubic feet of earth were excavated with the expenditure of 28,160 man hours of labor. A total of



375 ten-foot squares have been excavated to an average depth of 3 feet 6 inches; this represents approximately 40 percent of the space within the stockade.

The quantity and quality of data produced by these excavations has varied considerably from year to year. The field method outlined above represents a standard norm for the site, although this has been maintained with considerable flexibility by different archaeologists, resulting in field records of varying quality. It also appears that record keeping was less rigorous during certain years than during others. The mass of field data produced between 1959 and 1966 has been characterized at different times by both underinterpretation and overinterpretation. In several cases, the excavator has obviously overinterpreted the field evidence thereby minimizing the adequate recording of this evidence. Data of this type has been difficult to re-evaluate in later years. Underinterpretation has also contributed to differences in the quality of field data produced. In this case, however, it is far easier to reconstruct and re-evaluate the evidence. Fortunately, a majority of field records are based on a "good-fit" between adequacy of the data recorded and the depth of field interpretation.

At the end of each summer's field season, all artifacts and records are transported to the Michigan State University Museum for analysis. After cataloguing is completed, the artifacts are sorted and stored by type category. All artifacts are eventually cleaned and preserved. Specific steps in the analysis and classification of each artifact category are described in the following chapter.

## CHAPTER 3

### FORMAL CLASSIFICATION AND THE INVESTIGATION OF FORMAL VARIATION WITHIN THE ARTIFACT CATEGORIES

The purpose of this chapter is to describe the analytic approach utilized to study formal variation within the Fort Michilimackinac artifact categories and to explain the relationship of this approach to the interpretation of archaeological data.

#### Definition and Theoretical Basis

The analytic approach described below and illustrated in the remaining chapters of this study has theoretical relationships to the principles of both biological and archaeological taxonomy. This approach is based on a formally structured taxonomy, termed formal classification. Formal classification, as applied in this study, may be defined as the hierarchical ranking of formal properties on the basis of their relative importance. Formal properties are the physical attributes of artifacts which result from different methods or techniques of manufacture and/or use such as form, shape, color, material, and so on. Relative importance refers to ranked differences in attribute significance as distinguished during manufacture or use. For example, a distinction made on a structural basis is considered to be more important in terms of manufacture and use than are

distinctions based on shape, material, or color. Attributes which, during manufacture or use, necessitate a higher level of technical discrimination or decision are assigned to a higher classificatory level. Attributes which necessitate a lower level of technical discrimination or decision will be relegated to lower levels of distinction.

The formal analytic approach is most closely related to the principles of quantitative analysis commonly used in prehistoric archaeological research (Clarke 1969: 651). A number of authors (Freeman and Brown 1964; Fitting 1965; Sackett 1966; Binford 1963; and Deetz 1965) have recently explicated and illustrated a quantitative approach to artifact analysis which is based on both a maximum discrimination of variable physical properties and a study of co-variation between these variables as a means of interpreting artifacts and their contexts. The concept of ranking these discriminate variables in terms of attribute hierarchy is directly related to the mechanics of biological taxonomy. As such, the advantages of a taxonomic key, which facilitates the identification of taxonomic relationships, are inherent in a formal classification. David L. Clarke, in a discussion of archaeological grammar, describes a syntactic grammar (archaeological syntactics) which condenses regularities in the "relations between artefacts and attributes at every level of their organization" (1969: 649). The theoretical bases for this grammar are very similar to the two views, expressed below, on which formal classification is based. The term "formal," as

defined in this report in reference to artifacts, has been used by other authors with essentially the same meaning. Spaulding (1955: 36), for example, refers to the formal dimension of an artifact as "all physical properties of the artifact (shape, weight, chemical composition, etc.)." Deetz (1967: 9), notes that "The formal dimension of archaeological materials consists of their physical appearance." The term "formal" may also be used to define a particular dimension or set of relational characteristics of an archaeological site, as distinct from the spatial or temporal dimensions of a site. In this sense, the formal dimension is defined by the presence of and interrelationships between the physical attributes which characterize a site and which result from human activity.

Formal classification is based on two interrelated views which are:

1. That a classification of historic artifacts must be based on observed physical properties, regardless of any presumed analytic or cultural significance of these properties (see also Clarke 1969: 648). Our conception of significance in these terms is notably inadequate, since so few properties of historic artifacts have actually been evaluated in terms of their spatial and temporal variation. It is assumed that once the analytic significance of all variables characteristic of an artifact category (as expressed at different types of sites and in different social contexts) is known, the need for a formal classification would no longer exist, except in

a comparative sense. At this not yet attained "ideal" level of knowledge, we will thus be able to organize a classification with a particular problem in mind by selecting variables with proven relevance to the phenomena or problem under study. Until this level is reached, however, formal classification must be used to promote rigorous comparative research as well as a means of evaluating the analytic significance of variables.

2. Classification is an analytic tool which is useful in evaluating the significance of variation within the spatial, temporal, and formal dimensions of a site. As such, the classes and attribute differences defined need not necessarily correspond to differences recognized by the societies which produced or used them. Classification in this sense is an aid to interpretation, rather than a result of interpretation; therefore, it can only be judged in terms of its relevance and utility to specific interpretative problems, rather than in terms of its representation of reality. A classification of artifacts must permit the identification of variables which have temporal, spatial, or formal significance in terms of the site under study. Whether or not these variables correspond to differences recognized by the society which used them is irrelevant, since in this "real" situation, differences may not have been recognized which, however, do have analytic significance at present. (see also Hole and Shaw 1967: 5) Moreover, variables were undoubtedly differentially recognized through

time, at different site types (such as trading posts, religious centers, military posts, or Indian settlements), and in different social and cultural contexts. Variables which would therefore be recognized as real and significant in one situation cannot necessarily be interpreted as such in different situations.

A formal classification of the type here described is conceptually and mechanically distinct from classifications structured either on the basis of attributes of taxonomic "convenience" (Hole and Heizer 1969: 170-171) or of supposed functional significance. The "functional type" and "convenient type" approaches limit the comparative and interpretative value of artifact categories identified; whereas a formal classification is more rigorous in both respects.

#### The Mechanics of Formal Classification

The mechanics and rules of formal classification duplicate in many respects the principles of binomial nomenclature in the biological sciences. The procedure of formal classification consists of the following steps:

1. Compare all specimens within a given artifact category and note the physical properties which they possess. This results in a list of variable physical properties which characterize an artifact category.

2. Evaluate the properties defined and decide which will be used as classificatory attributes and which will be used as descriptive measures. This decision reflects the classifier's concept of property significance and is based on his knowledge of the manufacturing technology and function of the artifact category being studied.
3. The attributes identified are then hierarchically ranked in terms of their relative formal importance. It should be pointed out that although form consistently receives the highest order of attribution, other attributes may vary in rank depending on the specific artifact category under study.

An admitted degree of subjectivity characterizes the above two steps, since the validity of decisions depends largely on the classifier's comprehension of differences between physical properties. It is felt, however, that this approach to classification is inherently more rigorous than other commonly used approaches and that it may eventually provide a basis upon which a completely objective taxonomic approach is defined.

4. Name the different ranked levels and describe the attributes upon which their distinctions are based. The terms class, series, type, and variety are used here in descending order of formal importance. Each of these need not be present in any given classification; additional levels may also be added if necessary. For example, we may have an artifact category

containing specimens which differ in only one property: shape. If there are three shapes and no other differences, we will have three types. Variety level distinctions are often missing in certain artifact classifications where low-level physical differences were not present or were not recognized as such.

5. Sort all artifacts according to the levels defined. Descriptive categories are defined by artifacts which are incomplete or which do not exhibit all physical properties necessary for formal classification are added at this point. For example, we may have a specimen which only exhibits the attribute necessary for class level placement. In this case, the specimen would be assigned to a category of that class, with no further distinction as to series, type, or variety. At this point, we must also check the resultant classification against three rules which govern the reliability of any scientific classification. These are:
  - a. Only one basis of attribution can be used on each level; however, several attributes may be used at the same time if a functional relationship can be positively demonstrated.
  - b. Levels must permit the placement of artifacts into mutually exclusive groupings. Any given specimen can only fit into one level.



- c. Classes must be exhaustive or capable of including all specimens. This is often difficult in dealing with archaeological remains because of the presence of badly preserved or fragmentary specimens, although the problem is partially solved with the use of category distinctions described above.

Classification is completed at this point. Three additional steps are then necessary to permit artifact comparisons, interpretations, and analysis of the derived data in terms of the temporal, spatial, and formal dimensions of the site.

6. Measure all specimens; note any metric relationships between variables and types, and test for the presence of dimensional categories.
7. Evaluate the derived classes and classificatory attributes in terms of contextual (distributional), comparative, and historical evidence. This permits the identification of classes and attributes which have temporal, spatial, or formal significance and thus provides a basis for final site interpretation.
8. A final step, that of description, serves a comparative purpose.

### Analytic Features of Formal Classification

The above procedures result in a classification which possesses a number of unique comparative and analytic qualities. Formal classification:

--is not structured by any specific interpretative problem.

Therefore, there are no limitations imposed on the interpretative purposes to which its results may be applied.

--produces a classification free of built-in interpretative error and permits a re-evaluation of existing artifact interpretations on an objective basis, because attribute distinctions and rankings are not based on assumed knowledge of attribute significance but on the presence or absence and relative formal importance of empirically defined physical attributes.

--permits a maximum recognition of and discrimination between physical properties representative of an artifact category, so that each variable property can be tested against the many factors potentially responsible for its contextual and formal variation. Any specific attribute or class can thus be isolated and evaluated in terms of its contextual and interpretative significance at the site. Any specific attribute can be compared with other attributes on a similar level of formal differentiation; this yields evidence of co-variation between attributes. In certain cases, it is also possible to compare related but different artifact categories on the same level

of discrimination in order to identify functional co-variation between artifact categories.

--produces an internally consistent arrangement of artifact classes.

This permits the description and comparison of any specific artifact within a category in terms of attributes which define any other artifact within the same category.

--through its descriptive features permits the quantification and statistical evaluation of artifact properties.

--is both easily modifiable and is flexible enough to include additions of new data.

--is capable of efficiently accommodating a large and formally complex artifact sample, thereby systematizing the task of description.

--facilitates the analysis of fragmentary or badly preserved artifacts through the use of category designations.

--produces artifact descriptions of a caliber adequate for comparative research.

--enables discrimination between behavioral norms of manufacture since the classificatory levels defined in a formal classification of historic artifacts are based essentially on differences which result from differential manufacturing behavior.

The mechanics and advantages of a formal approach to artifact classification and analysis have been described above. Although this approach is based in part on current methods of archaeological taxonomy, it is a new and useful concept in the archaeological study of historic sites. The remaining chapters in this study illustrate the application of a formal approach to the analysis and interpretation of an historic site.

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## CHAPTER 4

### SYNTHESIS AND INTERPRETATION

This chapter is a summary and interpretation of the archaeological evidence described in Appendix A and Appendix B in terms of the spatial and temporal dimensions of cultural phenomena at Fort Michilimackinac; the French and British social systems as characterized by this evidence are also compared. The physical evidence of site occupation, as it reflects differential cultural behavior through time, is summarized in Part I. Major differences between the French and British occupations of the site are pointed out in Part II. Both parts are based on the assumption that major differences in the spatial and temporal distribution of artifacts and structures are a result of (and thus may be explained by) the changing cultural conditions at the site.

The types of archaeological evidence upon which the present summary is based affect the nature and reliability of conclusions which are subsequently derived. Because of this relationship, it is important to explain several characteristics of this evidence which are thought to affect its application to the interpretation of the site.

Fort Michilimackinac was controlled by the French from approximately 1715 until 1761 and by the British from 1761 until 1781. The date of 1761, however, is not a definite demarcation between the French and British occupations. A majority of the French civilian inhabitants prior to 1761 continued to live at the site after that date. Although these inhabitants lived under British control, they were permitted to retain possession of all lands and properties which they had owned prior

to 1761. After 1761, then, the artifact assemblage is composed of both French and British remains. This condition has complicated the task of interpreting this already archaeologically complex site. In addition, as known historically and as demonstrated archaeologically, British soldiers and civilians lived in houses which had been constructed and previously occupied by the French. Thus, several rowhouse units as well as individual houses, contain both French and British artifact associations. An additional problem often arises because the British, upon re-occupying a French structure, removed all artifactual evidence of its earlier French occupation. Archaeologically, this produces a house which is architecturally French but for which only a British occupation can be demonstrated on the basis of artifact content. Also, it is known historically that several house units were alternately occupied by persons engaged in different occupations (such as, merchant, interpreter, soldier, and notary). Each of these individuals would have possessed both a task-specific set of artifacts and an assemblage shared by all occupants of the site. Thus, attempts to interpret the relative status or occupation of a structure's inhabitants on the basis of artifact associations are confused by the presence of a mixed assemblage which reflects the different social positions or occupations of successive residents.

A second major problem is the complex archaeological nature of the site itself. Although the distinction between French and British buildings is generally obvious, the site has been complicated by the numerous structure additions, modifications, superimpositions, and occupation periods which occurred. These conditions have often made it

difficult to attribute a specific artifact sample or assemblage to a specific structure or period of occupation. Since artifacts were more frequently recovered from non-structural contexts (such as gardens, streets, and refuse areas between buildings), it was often impossible to specifically attribute such deposits to any one of several nearby buildings from which it may have been initially derived. Some of the broad or ambiguous artifact and structure datings in Appendix A and Appendix B reflect this problem.

Pothunters have produced a third complicating condition. In many cases they have obliterated critically important structural evidence. In cases such as this, we can often reconstruct the destroyed evidence with logical predictions based on the distribution and orientation of features in surrounding areas.

### Part I: Archaeological Synthesis

The archaeological history of the site may be conveniently summarized by dividing the site into four overlapping periods which are spatially and temporally defined by the various stockades and stockade expansion: (see Appendix A). Each period is defined by distinctive archaeological evidence and by other structures and artifacts which were in use between several periods.

Structures and stockades referred to are noted by name and "Structure Feature" number, as listed and described in Appendix A. The stockade features which provide a chronological framework are:

1. Feature 5--first stockade, 1715 to 1725 (1735);
2. Feature 81--first stockade expansion, 1725 (1735) to 1751;
3. Feature 82--second stockade expansion, 1751 to 1755 (1760);
4. Feature 14--third stockade expansion, 1755 (1760) to 1781.

The terminal date of Feature 14 is uncertain because the twentieth-century stockade reconstruction may have been placed over a later stockade.

Artifact category-period associations are expressed in terms of relative common usage, as compared with their use during preceding and succeeding periods, and are listed by name and taxonomic designation as outlined in Appendix B. An alternative to this approach, expressing artifact use in terms of presence or absence within closely defined time periods, is less acceptable since it fails to discriminate trends in use popularity. Certain artifact categories are often termed "trade goods"; this does not imply that the category was used exclusively in trade but that this was its most frequent or intended use determined from documented, trade-good lists.

Period I 1715 to 1725 (1735): Early French Occupation

There is little historical documentation of structures which were present during this period. The only known reference is contained in a letter from de Lignery to Count de Toulouze in 1720 noting that he has turned over the command of the garrison to Monsieur Daniel Lienard de Beaujeu, and, that before his departure, he "had a new establishment created for the Outavois and the French, on the other Side of the River; a fort for the garrison, with two guardhouses; and a 40-foot house--all at his own expense" (Thwaites 1902: Vol. 16, 387).



This period is better represented archaeologically than historically; it is defined by a square, stockade enclosure (Feature 5) which has been partially excavated. The Feature 5 stockade is 206 feet long (estimated) on the east-west axis and is either 129 feet or 178 feet long on the north-south axis, depending on which of two excavated east-west stockade trenches represent the actual south wall. Several internal structures were associated with this stockade: Feature 25 (76, 27), a rowhouse unit consisting of three, and possibly four, attached houses adjacent to the north wall of the stockade and an isolated house (Feature 31) south of the rowhouse unit. The Feature 25 rowhouse consisted of three individual houses in alignment, each separated by a narrow passage and constructed of vertical pickets set in horizontal sills (north and south walls) and vertical saplings covered with elm-bark siding (east and west walls). Feature 31 was constructed similarly. An external, church (Feature 62A), which joined the west stockade of Feature 5, was possibly in use during the latter part of this period.

Fewer artifacts and artifact categories could be associated with this period of occupation than with any of the succeeding periods; this may be a result of the relatively low population and/or the failure of this analysis to specifically attribute artifacts to an early period of use. The majority of artifact categories which could be attributed to this period are trade goods, which are defined in terms of their probable context of utilization, as follows:

- Personal Context of Utilization

Beads

Jesuit Rings (CII, SA)

Hawk Bells

Religious Medallions and Crucifixes

Tinkling Cones

- Household Context of Utilization

Awls

Brass or Copper Kettles

- Craft or Activity Context of Utilization

Case Knives (CII)

French Clasp Knives (CI, GI)

Bale Seals

Spall Gunflints (SC)

Metal Projectile Points

- Miscellaneous or Generalized Context of Utilization

Strike-A-Lites

It is clear from this list and from the distribution of these categories that a number of artifacts traditionally referred to as trade goods were also in common use by the majority of the site's occupants.

Other artifacts commonly associated with the Period I occupation include:

- Buckles, small frame with flanged or winged hook (CI, SC and SD)
- Cufflinks, two-part metal crown and back (CII)
- Ceramics, brown and white tin-glazed earthenware (CA, GI, TC); green glazed earthenware (CA, GIII, TD); blue and white and polychrome tin-glazed earthenware (CA, GI, TA and TB); and possibly brown stoneware (CB, GII, TB)

The ceramic types and forms present during Period I were primarily utilitarian (as distinguished from higher quality, functionally specialized forms in common use during the British period of control) and were used by many of the site's inhabitants. A low artifact frequency during Period I, combined with a characteristic low level of formal diversity within and between artifact categories, indicates that the Period I assemblage was largely generalized in terms of occupational or task application. Most representative artifact categories served mutually common subsistence and/or economic purposes. At the Period I level of socio-economic adaptation, there was little necessity for a large or formally elaborate assemblage of material possessions. Consequently, few artifacts were present which suggest major status distinctions between occupants. \_\_\_\_\_

In terms of the cultural representation of the early French period occupation, we can reasonably say that it was probably quite homogeneous with respect to economic, political, and religious conditions, as well as with respect to the material possessions of the site's inhabitants. The majority of the population, whether civilian or military, were engaged in trading with the Indians; their culture and subsistence activities were simply but efficiently adapted to this specific purpose. Status distinctions recognized were not major and probably differentiated civilian traders and soldiers on one level and military officers on a second level.

The French inhabitants during Period I were closely dependent on resources which were locally available and only secondarily on resources and goods which had to be imported. This type of settlement,

with a primary, local adaptation, contrasts with both the British period at Fort Michilimackinac and with the French settlement at Fortress of Louisbourg, Nova Scotia; each of these relied heavily on a continued import supply of subsistence goods and material possessions, and each closely reflected the eighteenth-century European societies from which they were derived.

Period II 1725 (1735): Middle French Occupation

The second period of French occupation is little-known historically but well-documented archaeologically. Based on information found in several documentary sources from this period, the social conditions at the site changed very little from the preceding period; however, the population increased. This conclusion is substantiated archaeologically.

Period II is defined archaeologically by the period of use of stockade Feature 81, the first stockade expansion following the period of Feature 5. Feature 81 is a stockade which was an expansion of the north and south walls of stockade Feature 5. The north wall of the stockade was expanded and relocated 65 feet to the north, while the south wall was relocated 62 feet 6 inches to the south (this southern expansion has been qualified in Appendix A in the discussion of Feature 81). The west wall of this first stockade expansion was relocated from 2 feet to 4 feet outside, or west, of the west wall of Feature 5. The increased area (approximately 50 percent) enclosed within this first stockade expansion permitted the construction of additional internal buildings such as: Feature 88, a well, located in the northwest corner of the preceding stockade, Feature 5; two houses, Feature 89 and Feature 93, located along the west wall of the stockade; and a Commanding

Officer's house, Feature 51, located immediately south and east of the center of the north stockade wall. In addition, several structures which had been in use during Period I continued to be used. The church, Feature 62, was rebuilt in about 1740 but remained in essentially the same location. The early French rowhouse unit, Feature 25 (76, 27), may have been used as late as 1740, based on datable artifact associations. A Period I house, Feature 31, probably ceased to be used at some time during this period.

This stockade expansion and related structural additions are reflected in the increased quantity of artifacts which can be attributed to this period. Artifact categories associated with the Period II occupation and which may be termed trade goods are listed below by their context of utilization:

- Personal Context of Utilization

Beads

Tinkling Cones

Jesuit Rings (CII, SA)

Jew's-Harps (SB, T1)

Hawk Bells

Religious Medallions and Crucifixes

- Household Context of Utilization

Awls

Brass or Copper Kettles

- Craft or Activity Context of Utilization

Case Knives (CII)

French Clasp Knives (CI, GI)

Bale Seals

Spall and Blade Gunflints (SA and SC)

Hawk Bells

Metal Projectile Points

- Miscellaneous or Generalized Context of Utilization

Strike-A-Lites

Aside from the addition of Jew's-harps and blade gunflints (probably after 1740) to the list which represented Period I, a definite increase in the frequency of these items is noted during Period II. This increase is also reflected in other artifact categories commonly associated with this occupation which include:

Cufflinks, two-part metal crown and back, and glass inset (CII and CIV)

French military buttons, after ca. 1740 (CI, SC, T1, Va), and various French civilian buttons in use during the last part of Period II

Buckles, prong-hook and winged-hook forms (CI)

Hooks and eyes, probably in use after 1740

Needles

Combs

Ceramics, blue and white, polychrome, brown and white, and powdered blue or purple tin-glazed earthenware (CA, GI); green glazed earthenware (CA, GIII, TD); and white saltglazed stoneware (CB, GI)

The Period II artifact assemblage is very similar to that defined for Period I, indicating essentially a continuation of a characteristic socio-economic emphasis from that period; however, there are minor differences in the formal diversity of artifacts represented. Economic activities during this period continue to be trade oriented,

engaging a majority of the population. An increased frequency of trade goods reflects both an increase in trading conducted through the site and an increase in the number of permanent inhabitants who were engaged in trading. The latter is also indicated by the size of the Period II stockade which enclosed approximately 50 percent more space than had the previous Period I stockade.

As in the preceding period, artifact categories identified as trade goods were also in common use by the site's inhabitants. There were additional non-trade-good artifact categories present during Period II; however, the majority of these continue to represent utilitarian items. This increase is interpreted as a normal increase in and formal elaboration of artifact categories resulting from a population increase (accompanied by minor alterations in the social composition of the site). There are several indications that the military population of the site was becoming more formally organized throughout the Period II occupation. Status or occupational differences may thus have been more commonly recognized, although to a lesser extent than in either of the following periods. The introduction of white saltglazed stoneware ceramics at the site, probably after 1740, is primarily recognized as a measure of its initial popularity in Europe and elsewhere and may indicate the presence of minor status differentiation at the site. This ceramic type was more expensive and elaborate than other common earthenware types and may have been initially limited in use to a few relatively high-status households. The introduction of this ceramic type also suggests an increased efficiency in the French supply network during Period II.

Period II was thus characterized by an increasing population, by trading as a major economic activity, and, possibly, by the initial recognition of low-level status distinctions, thought to be a natural by-product of an increased population with accompanying task specialization. Such distinctions, if recognized during the preceding period, were less formalized and contributed less to the differential cultural representation of the site. The Period II population was still closely adapted to locally available resources but had a greater variety of material possessions available. The beginnings of social differentiations are recognized during this period and become more pronounced during succeeding periods.

Period III 1751 to 1755 (1760): Late French Occupation

The final French period of occupation is also poorly documented in the historical records. As in the preceding two periods, we must rely primarily on archaeological data for an understanding of this period and of the social conditions by which it was characterized.

Period III is defined architecturally by stockade Feature 82 and by a number of large structures which were constructed between 1750 and 1760 and which were in use throughout the remaining years of site occupation. The estimated size of the stockade, based on sections which were recovered archaeologically, is 285 feet east-west by 265 feet north-south; this is an estimated 30 percent increase in the enclosed area. This expansion was accomplished by relocating the north and south walls approximately 10 feet in each direction and the west wall approximately 40 feet to the west. New structures constructed within the Feature 82 stockade include: a Priest's house and blacksmith's shop,



both attached to the north wall of the church; a guardhouse, Feature 60; a brick kiln, Feature 77; and three rowhouse units, Feature 90 (96, 91), Feature 220, and Feature 266. When the three rowhouse units are combined, it indicates that between 19 and 20 new houses were constructed during Period III. In addition, several structures from the preceding period continued to be used: the church, Feature 62, was still in use and was now enclosed within the stockade; the Period II French well, Feature 88, was abandoned sometime during the later years of this period; a house, Feature 89, was probably abandoned during the initial years of Period III, as a result of the changes which were necessitated by the Feature 82 stockade expansion.

This major period of construction contrasts sharply with the levels of such activity during the preceding two periods. This emphasis may indicate a major re-organization of the site in terms of population density and social organization, although the complimentary Period III artifact associations provide little additional evidence to support this assumption. For example, we would expect a major phase of new building construction to be accompanied by a proportional increase in period associated artifacts; this does not seem to be the case. There are two possible reasons for this observed inconsistency: either the rowhouse units were constructed earlier than 1751 (this cannot be supported either archaeologically or historically) or the rowhouses were constructed late during the Period III occupation, in which case the rowhouses would not have produced a notable increase in artifact frequency during Period III. This second alternative is the most logical at present; it is tentatively suggested that rowhouse Feature 220 was constructed early in Period III but that the other two rowhouses were constructed during the final years

of Period III. Future excavations in the east half of the site should provide evidence which will illuminate this problem.

Period III artifact associations reflect an increase in the number of non-trade-good categories and a continuation of the preceding Period II, trade-good emphasis. Period III trade-good associations are listed below and are expressed in terms of context of utilization.

- Personal Context of Utilization

Beads

Tinkling Cones

Jew's-Harps (SA and SB)

Hawk Bells

Religious Medallions and Crucifixes

- Household Context of Utilization

Awls

Brass or Copper Kettles

- Craft or Activity Context of Utilization

Case Knives (CII)

French Clasp Knives (CI, GI)

Bale Seals

Blade and Spall Gunflints (SA and SC)

Metal Projectile Points

- Miscellaneous or Generalized Context of Utilization

Strike-A-Lites

In comparing this list with that of Period II, very little difference is noted in the frequency and formal diversity of artifact categories. Jesuit rings were notably infrequent during this period.

Other Period III artifact associations include:

French Military and civilian buttons

Buckles, most types are present in low frequency

Cufflinks, round and octagonal brass and glass  
inset (CVI and CIV)

Rings with glass sets (CI)

Textiles

Hooks and eyes

Combs

Lead pencils

Needles

Ceramics, all tin-glazed earthenware types (CA, GI);  
white saltglazed stoneware (CB, GI); and Chinese  
export porcelain (CC, GI)

The Period III artifact assemblage, in comparison with that of the preceding period, is represented by an equally large number of trade-good categories but by an increased frequency and formal diversity of categories which represent non-trading activities. The presence of both porcelain and white saltglazed stoneware, for example, indicates a continued increase in social differentiation noted initially in Period II and an increased efficiency in the supply and distribution of goods over that of Period II. The importation of large quantities of fine ceramics, such as porcelain, must certainly have required a more efficient supply network and mode of transportation. The presence of porcelain at the site during Period III further suggests that there was an increase in the number of persons who used comparatively expensive and fragile material goods. This in turn may indicate the increased

presence of high status individuals relative to the status differences which characterized the preceding two periods.

The French military garrison at the site was probably larger and more systematically organized than it had been during Period II. This is indicated by an increased frequency of French military buttons and French blade gunflints, attributed initially to the French military rather than civilian population. It is also probable that the French and Indian War of this period compelled the French military garrison to become better organized. These factors also indicate that more pronounced status distinctions would have been operative in distinguishing different grades of military personnel and in distinguishing military personnel from individuals engaged in different occupations (for example, itinerant traders, merchants, priests, and specialized craftsmen such as blacksmiths and gunsmiths).

The Period III, French occupation was characterized by a greater degree of social differentiation which indicates that the social organization of the site was more complex. The recognition of status differences probably increased during this period, due both to the increased presence of high status occupations and individuals and to the noted formal elaboration of the French military garrison. The frequency of trading activities does not appear to have increased appreciably over the preceding period in spite of a more efficient supply network. The social composition of the site continued to change from generalized to differentiated with the increased presence of non-trade-oriented social and economic activities. In comparison with the preceding periods and in relation to population size, there was actually less emphasis on trading as a major economic activity. The French occupation during

Period III was less closely adapted to the local environment and consequently more dependent on a supply of European goods.

Period IV 1755 (1760) to 1781: British Occupation

The final period of site occupation is well documented both archaeologically and historically. The archaeological data provides detailed information which is not included in the known historical sources. The historical references provide a rather detailed chronological framework for the synthesis and interpretation of the archaeological remains.

Period IV is defined by the British period of occupation, 1761 to 1781; however, as previously indicated, the initial date may have been slightly earlier, in correspondence with dated structural evidence and the proposed construction date of stockade Feature 14, 1755 to 1760. Period IV is thus represented by stockade Feature 14 and by new structures which were constructed during the British period of control. Stockade Feature 14, based on the predicted location of stockade curtains, was approximately 320 feet east-west by between 345 feet and 355 feet north-south. The size of this stockade represents a 32 percent increase over the area enclosed by the Period III stockade. New structures constructed during this period include: a late, British Commanding Officer's house, Feature 11, constructed in approximately 1770; a possible British guardhouse, Feature 202; a soldiers barracks, Feature 3, constructed in 1769 and 1770; a blacksmith's shop, Feature 61, constructed over an earlier Period III French guardhouse (Feature 60) after 1767; an interior stockade, Feature 16, probably built in 1776; a blockhouse, Feature 66, built after 1779; and a second provisions storehouse, Feature 21, constructed after 1772. An earlier provisions storehouse, Feature 22,

was constructed at the same time as the Feature 14 stockade, approximately 1755 to 1760. Several structures from the preceding period continued to be used after 1761: the second Commanding Officer's house, Feature 57, was in use until about 1770; the Priest's house, associated blacksmith's shop, and church were all in use throughout this period; the brick kiln, Feature 77, had ceased to be used by 1765; the three rowhouse units, Feature 90 (96, 91), Feature 220, and Feature 266 were in use until 1781.

Period IV artifact associations include the following trade-good categories which are listed by their context of utilization:

- Personal Context of Utilization

- Tinkling Cones

- Jew's-Harps (SA and SB)

- Household Context of Utilization

- Awls

- Craft and Activity Context of Utilization

- Bale Seals, much less frequent than in Period II

- Blade and Spall Gunflints (SA and SC)

- Case Knives (CII)

- Miscellaneous or Generalized Context of Utilization

- Strike-A-Lites

This list is in sharp contrast to those of the preceding three periods of occupation. The frequency of trade goods has decreased substantially. A number of artifact categories, which were very common during Periods I through III, were either rare or absent during Period IV; these include:

French clasp knives (CI, GI)

Bale seals

Beads

Hawk bells

Religious medallions and crucifixes

Brass or copper kettles

Metal projectile points

This obvious decrease in the number of trade goods at the site reflects a major shift in economic emphasis from the preceding period.

A number of additional, non-trade-good artifact categories were associated with the Period IV occupation; these include:

British military buttons (CI, SD, Tl, Va, Vb, Vc, Vd, Ve, Vf, Vg, Vi, Vj; CII, SA, Tl, Va), and numerous British civilian buttons

Buckles, specialized military and civilian, both of which were in much greater use during Period IV

Cufflinks, glass inset (CIV), infrequent use, and brass and pewter, (CVI), common use

Rings with glass insets (CI)

Forks and spoons

Bricks

British clasp knives (CI, GII)

Blade and spall gunflints (SA and SC)

Textiles

Hooks and eyes

Combs

Lead pencils

Needles (uncommon)

Thimbles

Cast-iron kettles

Barrel hoops

Ceramics, tin-glazed earthenware (CA, GI) noted by a low frequency of French specimens; brown glazed redware (CA, GIII, TB); cream colored earthenware (CA, GII); slip-decorated earthenware (CA, GIII, TH); tortoise-shell glaze, brown and green splashed glaze, fruit and vegetable motif, and Jackfield fine earthenwares (CA, GIV); white saltglazed stoneware (CB, GI), which diminished in use during this period as a result of the initial popularity of cream colored earthenware; Rhenish stoneware (CB, GII), probably in use after 1770; and both Chinese export and English porcelain (CC)

The total Period IV artifact assemblage is distinctly tripartite in nature; it is defined by sub-assemblages which represent the military, merchants or traders, and other non-merchant civilian occupants. These distinctions, although initially present during Period III, were much better defined and more easily recognized in the Period IV assemblage. This observation indicates both that the social composition of the site during this period was highly differentiated and that related major differences in status levels were readily distinguished and of major importance in terms of the social structure of the site. The occupational emphasis during this period was distinctly specialized-military, set in context of a highly differentiated society, rather than trade oriented as had been the case during the preceding three periods of French occupation. The livelihood of the majority of the site's occupants during this period was probably related to the activities of the British military garrison. As such, economic support was gained ultimately from external sources; whereas in the preceding periods, economic support was derived to a great extent from locally available resources.



The above conditions reflect an historically demonstrated increase in population during this period, primarily in the military segment of the population. The decreased emphasis on trading as a specialized economic activity is clearly demonstrated by the decrease in the frequency of trade goods. This observation may be somewhat misleading, however, because of several factors: (1) the observed, decreased frequency of trade goods may be an artificial result of the areas and/or structures at the site which have been excavated--the majority of British structures excavated have served specialized military purposes; British traders' houses have not been extensively excavated; (2) we would expect, on the basis of historical evidence, to witness an increase in trading activity at the site during the British period of control, since, as a result of changes in trade policies by the British, the distribution of trade goods (either in exchange for furs or as gifts) was confined to the major military posts in the Upper Great Lakes. In order to explain this problem, it is tentatively suggested that the village which was located east of the fort in fact represented a population of British traders. The fort itself had thus become a functionally specific military post, distinct in social composition from the preceding French occupational periods and the nearby British village.

An increase during this period both in the frequency and formal diversity of military and civilian possessions indicates that a more advanced level of logistical efficiency characterized the British supply network. This was essential for the maintenance of the cultural norms and varied occupations which characterized the site, since the British adaptation, in representing a North American extension of European

cultural and economic norms, was highly dependent on an increasing supply of goods from outside sources. The presence of numerous barrel hoops, restricted to the British period of occupation, confirms the hypothesis that goods were being imported in greater quantities and with greater efficiency. Cleland's (n.d.) analysis of British-faunal remains supports this theory and suggests that the British were highly dependent on imported foods, particularly domesticated animals.

It is apparent from the decline in religious items from the preceding period that religious activities assumed less social importance during the British period of control.

## Part II: A Comparison of the French and British Social Systems

The preceding discussion emphasizes cultural phenomena as they are archaeologically documented and reflected in each of the four periods of site occupation. The present discussion is more concerned with evaluating differences between the French and British social systems in terms of differential cultural behavior.

One important condition affects the comparability of the two occupations; the French occupation has been defined as it changed through time whereas the British occupation has been characterized as a static social system which underwent little change in the conditions of occupation through time. The French occupation took place over approximately 45 years during which time a number of continuously evolving cultural differences were noted. The British occupation, representing a

short time span of 20 years, did not, at least in its archaeological manifestation, reflect changing cultural conditions. Thus, a comparison of French and British social systems is initially complicated since they have been differentially defined and interpreted.

The French and British occupations of the site may be compared in terms of three interrelated factors: population density, material possessions, and cultural domains.

### Population Density

It is estimated that the early French population consisted of between 30 and 50 permanent occupants; the site was also occupied for different periods of time by itinerant traders and trappers. French population density increased to between 80 and 100 permanent occupants by 1761. The initial British population consisted of between 120 and 140 permanent occupants, including between 70 and 90 soldiers. By 1781, this population had increased to between 175 and 200 individuals. It is also probable that a comparable population increase occurred outside the fort.

In comparison, the British population density was greater than that of the French and consisted of a greater, relative proportion of military personnel.

### Material Possessions

The early French inhabitants possessed few personal items which were not essential for subsistence purposes. The majority of these were utilitarian and functionally generalized in nature and exhibited a low level of formal variation. It has been emphasized that many trade-good

categories were also in common use by the French occupants. This condition had changed by the end of the French period of control. At this time, an increased use of artifact categories representing specialized activities and different status positions is noted. However, the majority of the assemblage remains generalized in terms of occupational or task application, and reflects the local subsistence and trade orientation of the population.

Material possessions during the British period of control were numerous and highly differentiated both in form and function. This assemblage readily distinguishes the military and civilian segments of the population and further indicates that there were major status and occupational differences within and between these segments. The British artifact assemblage reflects a non-local adaptation.

The frequency (relative to population density) and formal diversity of British possessions is of a higher order than that which characterized the late French period. This reflects not only a difference in the degree of social complexity between the two societies but also a difference in the cultural norms which characterized the French and British occupations. Thus, the British occupation cannot be viewed simply as a logical extension of the preceding periods accompanied by an increase in social complexity.

### Cultural Domains

Status Recognition: Low level status differences were recognized during the initial years of French occupation. These differences became more pronounced throughout the period of French occupation, as a result of an increasing population, military formalization, external communicatio

and interaction, and the increased presence of individuals engaged in occupations which were neither trade nor military oriented. By 1761, definite status levels were recognized, although the number of high-status individuals was very low.

Status differences during the British occupation was very common and were equally recognized and applied by everyone at the site. Both the military and civilian segments of the population were highly differentiated on the basis of status. Different military classes probably included: the Commanding Officer and his family, officers and their families, civilians under military direction (doctor, notary, interpreter), and enlisted men. Among the civilian occupants we may distinguish a few high-status merchants, other merchants and traders, and occupational specialists, such as Priests, blacksmiths, gunsmiths, and carpenters.

As noted in the discussion of material possessions, the French and British occupations differed not only in degree but in kind. This applies equally to the differential presence and importance of status levels, indicating that the French and British social systems were characterized by different levels of complexity.

Military-Political Behavior: The purpose of the French military garrison at Fort Michilimackinac was to support and protect French trading activities in the Upper Great Lakes. As such the French military component served a largely economic purpose. This emphasis is characterized by the French military organization as defined by archaeological evidence. The early French military garrison was small and structurally simple, reflecting a major site emphasis on trading with a secondary

emphasis on military support for this activity. As the duration of the French occupation increased, the military organization became more formalized, although its purpose remained secondary to trading interests. Fort Michilimackinac during the French period can be characterized as a fortified trading center, dependent on the European fur market for economic support.

The British military garrison was a large and tightly structured military organization. These conditions indicate that the British maintained Fort Michilimackinac as a site designed for military purposes with a secondary purpose of maintaining British trading interests.

In comparing French and British military activities, we find that the respective garrisons were very different in terms of purpose, and organization. The French garrison can be broadly characterized as a fortified trading center, whereas the British garrison represented a functionally specific military post which derived both its economic and subsistence support directly from England or from other North American logistic centers controlled by the British military.

Religious Behavior: Religious activities during the French period of control were very important, both in terms of their role in serving the religious needs of the population, and, indirectly, in supporting the French economic and political systems. Religious activity during the British period was of lesser importance. This difference may reflect the de-emphasis of one means of social control during the period of British occupation and its substitution by an increased military-political control of the site's occupants.

Economic Behavior: The economic emphasis throughout the period of French control remained trade oriented. Trade was the single most common economic activity and the one in which the majority of the French population was engaged. An increased reliance on external economic resources, with an attendant increased efficiency in the trade-good supply and distribution network, is noted through time. Life at the site became less closely tied to local resources for economic and subsistence goods and more closely dependent on externally available resources. In spite of this important trend in the change of economic conditions, the French site represented a functionally specific trade center throughout its existence; all other activities, including military, were secondary.

The local economy during the British period of occupation supported and was largely dependent on the presence of a military garrison. Individuals were either engaged directly in military activities or were dependent on these activities in order to obtain subsistence and economic goods. This type of occupation, in being basically non-locally supported, necessitated a very efficient logistics network for its maintenance. Conditions at the site were closely adapted or related to socio-economic and political conditions in England. As such, the British occupation represented a functional extension of English culture; this included a complex and highly differentiated social system.

These observations indicate a contrast between the economic conditions and emphases which characterized the French and British occupations of the site. The French site represented a cultural and economic re-adaptation to an Upper Great Lakes' environment, in view of the French purposes for occupying this region. The British occupation

remained closely adapted to an external environment and was influenced by the social and economic conditions in England at that time.

### CONCLUSIONS

This report has exemplified a delineation of social conditions at an eighteenth-century historic site based on archaeological evidence. The analytic approach has been centered on the position that evidence of cultural activities and conditions can be derived from archaeological remains. Conversely, the formal dimensions of archaeological remains and their spatial and temporal distribution are products of differential cultural activity.

As such, this report represents both an exercise in interpretative methodology, based largely on the comparative and analytic features of formal classification, and a formal archaeological description and interpretation of a major eighteenth-century historic site. In considering these contributions, several related observations were made.

1. The analytic methods of prehistoric archaeology may be applied with equal reliability to the analysis of historic-site remains.
2. The importance of historical evidence cannot be overemphasized. This evidence has provided both an interpretative framework and a complimentary data source.
3. Archaeological research on historic sites, even if the sites are well-documented historically, can provide additional primary



evidence relative to historical events which occurred at the site, information on cultural behavior and social conditions which characterized the site, and information about the relationship of a site to external historical conditions. Research such as this may thus provide new evidence, previously unknown from historical sources, which may be applied to both historical and anthropological problems.

4. The formal classification of historic artifacts has benefitted this study in several ways: first, it has permitted the description of artifacts for comparative purposes; second, it has facilitated the discrimination and interpretation of important cultural variables; third, it has permitted an accurate evaluation of formal variation within artifact categories in terms of temporal and spatial differences; and fourth, it has permitted a re-evaluation of certain types of archaeological evidence already in the literature.
5. There are major cultural differences between different types of historic sites (such as trading posts, religious centers, military posts, or Indian settlements) as reflected in the formal structure of their archaeological remains. These differences may be due to several factors including the presence of different occupant societies with distinct patterns of cultural behavior and the different economic and political reasons for the site's occupation. In addition, as demonstrated in this report, there may be important cultural differences at an individual site. A

comparison of the French and British social systems at Fort Michilimackinac has reflected differences, both in degree and in kind, of characteristic cultural behavior. The French population was largely homogeneous with respect to cultural behavior and exhibited a relatively simple social organization. The bases for French site occupation were trade oriented and economic. The British occupation, in contrast, was highly differentiated in terms of cultural behavior and more complex in terms of social organization. The basis for British site occupation was military oriented.

**APPENDIX A:**  
**STRUCTURE DESCRIPTIONS**

Part I of Appendix A presents the descriptions and interpretations of each major structure identified at Fort Michilimackinac during the 1959 through 1966 seasons. Additional structural components and features have been excavated which are not interpreted in this report; these are listed and briefly identified in Part II.

Structural interpretations are based on several types of evidence which include:

1. Comparative and historical evidence relating to French and British methods and styles of construction;
2. Historical documents and maps which refer to specific structures at the site;
3. The position, size, and orientation of structures identified;
4. Artifact associations.

All field records were reviewed and re-evaluated as a part of the structural analyses. Field records include field logs or notebooks, square sheets, feature and interpretative maps, and photographs. In addition, all published and unpublished reports on structures at the site were reviewed.

#### PART I

Structures described below are listed in the numerical order of their identifying feature number or numbers. The majority of structure

descriptions include the following information (if there are no data for a specific section, the section is omitted):

1. Introduction: identifies the structure by feature number or numbers, references text figures on which it appears, and notes the year or years of excavation, and cites any archaeological reports in which it has been described.
2. Location and Orientation: notes the position of the building with respect to other structures in the same area and with respect to the site's grid system.
3. Dimensions: this section lists the dimensions of the structure as interpreted.
4. Major Structural Features: includes a physical description of the structure and all related features such as basements, fireplaces, and wall trenches.
5. Artifact Associations: lists select structure-artifact associations. The artifacts listed were selected either because they appeared in high frequencies or their presence was considered particularly significant for interpretative purposes. Artifacts are listed both by formal taxonomic division and by informal descriptive notation.
6. Relationships With Other Features: describes the vertical and horizontal relationships between a structure and other structures or features.

7. Documentation: references important historical sources which apply to the structure.
8. Interpretation: summarizes and interprets the preceding evidence in terms of structure chronology, construction, and function.

Four maps accompany the Part I structure descriptions; an interpretative map (Figure 6 ), and three data maps (Figures 7 , 8 , and 9 ); each of these depict a different area of the site. The areas delineated by the latter maps are indicated on Figure by heavy dashed lines.

#### STRUCTURE FEATURE 3; British Soldier's Barracks

Figures 6, 8

Feature 3, located and completely excavated in 1959, has been reported by Maxwell and Binford (1961: 70-77) and subsequently has been reconstructed. The following description is based on that of Maxwell and Binford.

Location and Orientation: north-south axis, located slightly north and west of the center of the stockade enclosure, corners in squares 110L40, 110L20, 200L40, and 200L20.

Dimensions: 89'6" north-south by 22' east-west (external measurements).

Major Structural Features: Walls, 1'4" to 1'8" wide, limestone footings which provide foundations for main wooden sills (16" to 18" wide by ca. 8" thick). The west wall includes, in addition, 3 carefully made pillars of cut limestone laid in mortar; the pillars are spaced 17'6" apart starting from the northwest corner. A centered, north-south row of dolomite boulders was noted in which each boulder was spaced ca. 3'4" apart; this apparently served as additional roof-beam support. The ground surface outside the walls was lined with a pink clay apron, 2' to 3' wide and 2" to 4" thick, which served to drain water away from the building. Two double, H-shaped fireplaces supported by chimney footings were recorded, 1 each in the north and south halves of the structure.

These fireplaces divide the structure into 4 rooms of approximately the same internal size, 21' by 20'. The 2 chimney footings, F. 13 (F. 23) (north) and F. 142 (south), were constructed of rough-cut dolomite blocks and supported brick-lined fireplaces. The footings are each ca. 11' long and 7' wide with hearth areas 2'8" wide and 3' deep.

Artifact Associations:

- Buttons (CI, SD, Tl, Va; CI, SD, Tl, Vd; CII, SA, Tl, Va; all are British military types)
- Gunflints (SC, spall gunflints)
- Ceramics (CB, GI, TC, scratch blue white saltglazed stoneware; CB, GI, TA, white saltglazed stoneware; CA, GIV, TB, tortoise shell glaze fine earthenware; CA, GI, TA and TD, tin-glazed earthenware)

The frequency of artifacts associated with F. 3 is comparatively low; this results both from the short period of time during which it was occupied (ca. 10 to 11 years) and from the fact that it was occupied exclusively by British military personnel.

Relationships With Other Features: F. 3 is superimposed over the northwest rowhouse unit, the north wall of F. 5, and F. 31. F. 16, a stockade trench which joins the northeast and southeast corners of F. 3 and which parallels the east wall, was constructed as an additional defensive measure to protect the barracks in the event of attack.

Documentation: The construction, use, and subsequent removal of this building is well-documented:

- Jan. 1765, letter from Howard to Bradstreet, emphasizing necessity of building barracks.
- Aug. 1765, letter from Campbell to Gage, nothing need for barracks.
- March 1769, letter from Gage to Glazier, noting that builders had been sent for the barracks, and enclosing a contract for the barracks construction with a New York carpenter.
- Nov. 1769, letter from Glazier to Gage, noting that barracks construction has started and that two rooms will be finished by December, expect to finish all construction by June.
- July 1770, letter from Turnbull to Gage, barracks completed for 60 men.
- Feb. 1780, letter from Sinclair to Brehm, noting plans for removal of building to Mackinac Island.
- Feb. 1781, letter from Sinclair to Brehm, noting removal of building to Mackinac Island.

Interpretation: Feature 3 is the British soldier's barracks referred to in the above documents, constructed in 1769 and 1770 and removed to Mackinac Island in 1781. The archaeological evidence very clearly substantiates the historical evidence.

## STRUCTURE FEATURE 5; Early French Period Fort Stockade

Figures 6, 8, 9

Portions of this stockade feature were excavated during the 1959 through 1966 field seasons.

Location and Orientation: Sections of the north, west, and possibly south stockades or walls of F. 5 have been located. The northwest corner is in square 130L120; the north wall extends from this corner to square 110R30; the west wall extends from this corner to square 260L110 and possibly to square 310L110, depending on which of several wall trenches is interpreted as the south wall of F. 5. The most probable choice of a south wall for F. 5 is F. 241, an east-west trench which extends between 250L100 and 240L30; a second choice is F. 273 (F. 259C), an east-west trench between 310L110 and 310L30.

Dimensions: north wall, 154'; west wall, 129' or 178'; south wall, 81' or 82'.

Major Structural Features: Stockade walls, 16" to 22" wide trenches, the bottoms of which vary in surface depth from 40" to 72"; the depth depends on the elevation of underlying beach gravels which is the point at which trench excavations always terminated. F. 5 contained intermittent post molds, 6" to 8" in diameter. Stockade gates include a 6' wide gate in the north wall, between 100' and 106' east of the northwest corner; and a possible gate in the west wall between squares 190L120 and 220L110. The existence and exact position of this latter gate is uncertain.

Artifact Associations: The majority of artifacts which can be attributed to the period of F. 5 stockade use are associated with individual structures (F. 76, F. 25, F. 27, and F. 31) within the stockade. These associations are listed within the context of individual structure descriptions. Several bead types (CI, SA, T2, Va; CI, SC, T1 and T2; and CII, SA, T8, Va) are clearly associated with the area bounded by the F. 5 north, east, and south walls. These associations support the interpretation of F. 241 as the F. 5 south wall.

Relationships With Other Features: The following structure features overlie sections of the F. 5 stockade trench: F. 89, F. 60, F. 61, F. 88, F. 3, F. 16, F. 220, and F. 62. One rowhouse unit consisting of three structures (F. 76, F. 25, and F. 27) and 1 additional isolated structure (F. 31) are contemporaneous and associated with the F. 5 stockade. Several additional wall-trench segments (F. 32, F. 37, F. 94, and F. 95) are provisionally associated with F. 5.

Interpretation: F. 5 represents the earliest evidence of a stockade at the site. This judgment is based both on artifact and structure



associations as well as stratigraphic relationships with other structures. The F. 5 stockade was probably constructed by the French in 1715 and was removed for stockade enlargement sometime between 1725 and 1735. The rationale for this terminal dating is based both on the initial date range (1730-1740) assigned to the first stockade expansion represented by F. 81 and on the dates assigned to structures which were definitely enclosed within, and associated with, F. 5.

**STRUCTURE FEATURE 14: Late French or Early British Period Fort Stockade.**

**Figures 6, 7**

The short segment of F. 14 was excavated during the 1959 season and has been described by Maxwell and Binford (1961: 48-50).

Location and Orientation: F. 14 has been excavated for a distance of ca. 23' in squares 40L70, 40L80, and 40L110. An extended, deep wall trench at the south end of the site (F. 278, F. 271) may represent the south stockade equivalent of F. 14.

Dimensions: F. 14 is approximately 3' wide at the top and 1'8" wide at the bottom. F. 278 (271) varies in width from 2'6" to 4'. The distance between F. 14 and F. 278 (271) is 286'.

Major Structural Features: F. 14 runs east-west in 40L110 and in 40L80 and turns north in square 40L70. This stockade trench contained 8" to 12" diameter post molds and evidence of split, filler logs between the posts.

Documentation: The stockade represented by F. 14 is shown on the Nordberg, Magra, and Crown Collection maps and is identified by the noted north "jog." The Crown Collection map of 1765 most closely represents the position of the F. 14 stockade. Two historic references are noted which mention the repair of this stockade: letter from De Peyster to Brehm, June 1779; and letter from Vattas to Gage, May, 1773. The Magra map of 1766 shows the distance between the north and south stockades to be 285' (on a line perpendicular to the north wall at the stockade jog) which is very close to the 286' distance between F. 14 and F. 278 (271), although the angle of the south wall on this map is very different from the angle of F. 278 (271).

Interpretation: This stockade was probably constructed by the French between 1755 and 1760 and was in use throughout the period of British control. The British strengthened or rebuilt sections of this stockade at different times. It is tentatively suggested that the south wall of F. 14 is represented by the presently reconstructed south wall of the site.

STRUCTURE FEATURE 16: Late British Period Internal Stockade Attached to F. 3 (British Soldier's Barracks).

Figures 6, 8

Feature 16 was excavated during the 1959 season and has been partially described by Maxwell and Binford (1961: 77-78).

Location and Orientation: Sections of F. 16 parallel and are attached to the north, south, and east walls of F. 3. The north-east and southeast corners of F. 3 are each joined by north-south wall-trench extensions of F. 16 at 13' and 14' respectively north and south of F. 3. At these points of junction, F. 16 turns to the west and aligns with the north and south walls of Features 220 and 25 (76, 27) respectively. The west extension of F. 16, north of F. 3, is termed F. 42.

Dimensions: F. 16 is 120' in total north-south length and parallels the east wall of F. 3 at a distance of 13'. The wall trench varies in width between 6" and 2'6".

Major Structural Features: Each of the 2 F. 16 extensions which join the northeast and southeast corners of F. 3 have 3'6" wide gateways which provided entrance into the enclosed stockade area. Maxwell and Binford (1961: 78) indicate that there may have been a firing platform along the inside of the stockade wall. The angle and position of the west extension of F. 16 (or F. 42) indicates that it may at one time have joined the southeast corner or south wall of the NNW rowhouse unit (F. 90). The projected west extension of F. 16 south of F. 3 is very close to the position and angle of the north wall of the SW rowhouse unit (F. 220).

Artifact Associations: Within the stockade enclosure.

- Buttons (CI, SD, Tl, Va; CI, SD, Tl, Vd; CII, SA, Tl, Va, all are British military types)
- Ceramics (CI, Gl, TA tin-glazed earthenware)
- Gunflints (SC, spall gunflints)

Relationships With Other Features: F. 16 overlies a section of the F. 5 north stockade wall and portions of the clay apron which surround F. 3.

Documentation: The absence of this feature on the Magra, Nordberg, and Crown Collection maps indicates that it was constructed after 1769. Two later references: Sinclair to Brehm, Feb., 1780; and Depeyster to Brehm, June, 1779, indicate that a stockade of strong pickets (an interior redoubt) had been thrown up to protect the soldier's barracks (F. 3) from attack. F. 16 probably represents this interior fortification.

Interpretation: F. 16 represents an interior stockade fortification which probably surrounded the British soldier's barracks (F. 3). F. 16 was constructed between 1770, the date at which F. 3 was completed, and 1779, the date of the first historic reference to this structure. It is suggested that F. 16 was constructed after 1776 as a defensive response to conditions during the Revolutionary War. Artifact and structural associations support a 1770 to 1781 period of use.

STRUCTURE FEATURE 21 (22): Late French Period Provisions Storehouse (F. 22) and Superimposed British Period Provisions Storehouse (F. 21)

Figures 6, 7

These two structures were excavated during the 1959 field season; this description and interpretation is based in part on the description by Maxwell and Binford (1961: 38-50). F. 21 has subsequently been reconstructed.

Location and Orientation: Both structures are located in the north-central section of the fort, adjacent to and to the west of the land gate. Both features are enclosed within the north stockade "jog" defined by F. 14. The following grid units enclose features 21 and 22: 0 and 60, L10 and L50.

Dimensions: F. 22, 43' north-south by 30' east-west; F. 21, 36' north-south by 23'9" east-west.

Major Structural Features: F. 22, structure composed of north and south walls of 6" to 8" vertical posts set in narrow wall trenches and east and west walls of either horizontal logs or vertical logs against horizontal sills. F. 22 has a basement located in the south-central area of the structure; 9'6" north-south by 11'3" east-west; bottom lined with white-washed field stones; sides of 4" diameter vertical posts lined on the exterior with birch bark. This structure has a 2'8" wide doorway through the south wall, 8' east of the southwest corner.

F. 21, the north and west walls of this structure overlies the north and west walls of F. 22. F. 21 is defined by a layered stone foundation, consisting of a bottom course of field stone overlain by 2 or 3 courses of limestone slabs. These foundations have been completely defined on the east, west, and south sides and partially defined on the north side. The foundations excavated were ca. 15" wide and were set in shallow wall trenches, 27" to 36" wide.

Artifact Associations: Artifact associations with Features 21 and 22 are confusing and indicate only that the majority of artifacts from this area were deposited after 1770 (see Maxwell and Binford 1961: 41-47 for a preliminary listing of F. 21 and F. 22 artifacts.)

Relationships With Other Features: Both features are to the north of the F. 82 stockade and thus are believed to post-date this stockade feature.

Documentation: The provisions storehouse is noted on all 3 period maps with the following dimensions: Magra, 46' north-south by 18' east-west; Nordberg, 39' north-south by 23' east-west; and Crown Collection, 38'-46' north-south by 28'-33' east-west. The Crown Collection map most closely represents the dimensions of F. 22 (43' north-south by 30' east-west) based on archaeological evidence. It is believed that F. 21 was constructed later than the time period included by the 3 maps (1765-1769). A letter from Turnbull to Gage, Sept. 1771, suggests that the provisions storehouse built in 1772 and 1773 was to be established in the same location as an earlier storehouse. F. 21 received better documentation, with 5 references to its construction:

- Nov. 1769, letter from Glasier to Gage, noting the necessity of constructing a new provision store.
- July 1772, letter from Turnbull to Gage, noting the initial preparations for the construction of a storehouse.
- July 1772, Vattas to Gage, the stones and floor boards for the storehouse are being obtained.
- Aug. 1772, Vattas to Gage, mentions the necessity of obtaining a carpenter to build the storehouse.
- March 1773, Vattas to Gage, noting that the storehouse is nearly finished.

Interpretation: Feature 22 is a provisions storehouse which was constructed by the French sometime between 1750 and 1760. This dating is based largely on the position relationship between F. 22 and F. 14 (dated between 1755 and 1760). F. 22 was in use until a new storehouse was built in 1772-1773. F. 21 represents a second storehouse which was built by the British between 1772 and 1773 and which remained in use until 1781, at which time it was dismantled and removed to Mackinac Island.

STRUCTURE FEATURE 25 (76, 27): Northwest Rowhouse Unit (early French period rowhouse unit consisting of 3 individual structures).

Figures 6, 8

Feature 25 and related Features 76 and 27 were excavated during the 1959-1961 seasons and have been briefly described by Binford (n.d. [1961]) and Maxwell and Binford (1961: 83-84).

Location and Orientation: The F. 25 rowhouse unit is located adjacent to the inside, north wall of the F. 5 stockade. The individual units are F. 25 (center), F. 76 (west), and F. 27 (east).

Dimensions: The 3 individual structures in this rowhouse unit have the following external dimensions: F. 25, 18'6" north-south by 19'6" east-west; F. 76, 18'6" north-south by 21'6" east-west; and F. 27, 17' north-south by 21' east-west. The combined rowhouse unit is 65'6" in total east-west length. Wall trenches which form the 3 structures vary in width from 1'4" to 2'.

Major Structural Features: The wall construction characteristic of all 3 units is: north and south walls were constructed of vertical pickets set in horizontal sills; east and west walls may have been of wattle construction consisting of small saplings covered with elm bark siding. The 3 units are not joined by common walls but are separated by narrow (1' to 3' wide) open areas. Each structure has additional, specific feature associations:

- F. 25: clay puncheon and plank floor; boulder chimney on west wall near the southwest corner, 6' north-south by 4' east-west (external dimensions) and 4' north-south by 2'6" east-west (hearth dimensions); basement (F. 70) located in the south center of the building, 7' north-south by 3'6" east-west, construction of vertical pickets with bark woven between pickets; 3'6" wide doorway through the south wall, 3' from the southwest corner; possible 3' wide doorway through the north wall, 6' east of the northwest corner; internal partitioning consists of a shadow, wall trench which extends from the northeast corner of the basement to the north wall.
- F. 76: internal partitions and doorways have not been defined for this unit.
- F. 27: 3' wide doorway through the west wall at the southwest corner; 6'6" north-south by 4'4" east-west storage area or shed (F. 24) attached to the north wall of F. 27 at the northwest corner.

Artifact Associations: The majority of artifact categories recovered at the site were not found in any major quantities in F. 25, 76, or 27. Necklace bead types (CI, SA, T2, Va; CII, SA, T1 and T2; CII, SA, T8; CI, SC, T1 and T2) recovered from F. 76 and 25 were in use very early during the period of French control.

Relationships With Other Features: F. 25 rowhouse unit is overlain by 2 later structures; F. 60 and F. 3.

Interpretation: Feature 25 (76, 27) represents an early French period rowhouse, probably constructed between 1715 and 1720 and abandoned between 1730 and 1740. The association of F. 25 with F. 5 indicates that the 2 were contemporaneous, although F. 25 probably remained in use several years after the removal of F. 5.

STRUCTURE FEATURE 31: French Period House.

Figures 6, 8

This structure was excavated during the 1959 season and has been described by Maxwell and Binford (1961: 79-81).

Location and Orientation: F. 31 is bounded by grid lines 140 and 170, L10 and L40, and underlies the south-central section of F. 3.

Dimensions: 17'6" north-south by 20'3" east-west (external measurements). Wall trenches vary in width from 1'4" to 2'.

Major Structural Features: F. 31 is defined by 4 wall trenches; the west wall is characterized by small (3" to 4" diameter), shallow, vertical posts set in staggered double and triple rows; the north and south walls were constructed of larger (8" to 10" diameter) vertical posts; the east wall appears to combine the two types of wall construction. Each corner is defined by the presence of 3, closely spaced, large, vertical logs. Doorways, 3'5" and 3'8" wide, were noted through the centers of the south and north walls respectively. A fireplace was noted adjoining the east wall; 3'3" wide at the hearth and extending 3'4" east of the wall. The limits of this fireplace are marked by vertical corner posts.

Artifact Associations: The small sample of artifacts associated with F. 31 does not contribute to the interpretation of this structure.

Relationships With Other Features: F. 31 is overlain by F. 3.

Interpretation: F. 31 is tentatively identified as a French structure. The size and construction method characteristic of this feature indicate that it was constructed early in the French period of control, ca. 1720-1730. The angular orientation of F. 31 and the correspondence in wall alignment between F. 31 and F. 27 support this conclusion.

STRUCTURE FEATURE 51 (57, 11): Commanding Officer's House

Figures 6, 7

These three related structures were excavated during the 1959 season and have been described and interpreted by Maxwell and Binford (1961: 52-65). The following presentation follows very closely that of Maxwell and Binford. The three features (51, 57, and 11) represent superimposed segments of Commanding Officer's houses which were constructed at different times. The Commanding Officer's house represented by F. 57 has been reconstructed.

Location and Orientation: F. 51 is located in the east half of the site enclosure and is bounded by the following grid units; 60 and 100, R30 and L10.

Dimensions: The size of each of the 3 structures are only approximate since none of them have been completely excavated.

- F. 51, 41' east-west by greater than 21'6" north-south.
- F. 57, 43' east-west by greater than 27' north-south.
- F. 11, 30' east-west by greater than 27' north-south.

Major Structural Features: Each of the 3 features are described individually.

- F. 51, east and west of vertical pickets set in wall trenches, no data on construction of the south wall; entrance (3'5" wide) at the southeast corner; basement in the approximate center of F. 51, 10'5" east-west by greater than 12'6" north-south; fossiliferous limestone, bedrock floor; basement walls consist of a rectangular trench, 1" deep and 11" wide, in which 5" to 8" diameter cedar posts were set; the posts were lined on the exterior with birch bark; possible fireplace outside of the southwest corner.
- F. 57, foundations of heavy, horizontal wood sills which rest on a loose, field stone wall about 2' wide; 2 large field stone fireplace footings at the center of the structure, each H-shaped opening to the north and south, 9' east-west by 12' north-south, with a fireplace throat 4' by 4'8". The west fireplace overlies the earlier F.51 basement. The east fireplace underlies the east wall of the later F. 11. F. 57 has square-beam floor joists, ca. 8" wide, placed about 6' on center. The west wall of F. 11 overlies the west wall of F. 57.
- F. 11, foundations of rock footings with horizontal wooden sills, north-south floor joists spaced 6' apart on center; possible exterior porch on the south side; possible fireplace represented by the west fireplace which served F. 57. Maxwell and Binford (1961: 61-62) note that

From the amount of broken plaster on the surface it is apparent that the interior walls are plastered, at least above a wainscoting, but probably not the ceiling. The plaster was smoothed on hand-split pine lathes 1-1/4 inches wide and one-half-inch thick, nailed directly (without furring strips) to the hand-hewn, squared wall beams. The plaster is of good quality, and still hard in spite of 180 years of submergence in the damp earth. The scratch coat (brown coat) is three- to four-sixteenths of an inch thick, carefully wiped smooth, and white washed with a good quality of white wash which is still bright.

Artifact Associations: Evidence of specific artifact associations with any of the Commanding Officer's house features is lacking, because of the superimposed nature of the structural remains and the extensive pot-hunting activity which has taken place in the area. Fortunately, stratigraphic relationships between F. 51, 57, and 11 permit the relative dating of these 3 features in the absence of reliable artifact associations.

Relationship With Other Features: A 1'9" wide stone foundation overlies sections of the north half of all 3 Commanding Officer's house features. This foundation has not been interpreted at this time.

Documentation: A Commanding Officer's house is shown on all 3 period maps with the following dimensions: Magra, 42' east-west by 31'6" north-south; Nordberg, 45' east-west by 24' north-south; Crown Collection, 39'6" to 42' east-west by 30' to 33' north-south. The 3 Commanding Officer's house features have been referred to specifically in a number of documents:

- F. 51, Maxwell and Binford (1961: 57) have concluded that the structure in a letter from de Lignery to Council, 1720, referred to as a 40-foot house is archaeologically represented by F. 51.
- F. 57;
  - Oct. 1768, letter from Glazier to Gage, describes the Commanding Officer's house lot size as 43' by 32'.
  - March, 1769, Elias Smith contract, noting that the Commanding Officer's house is to be repaired as a barrack for the Commanding Officer and the garrison officers.
  - June 1770, letter from Turnbull to Gage, noting that construction work on the Commanding Officer's house is proceeding and that it will consist of 4 rooms when finished.
  - July 1770, letter from Turnbull to Gage noting that the Commanding Officer's house is finished and that it consists of 4, 15' by 13' rooms, and 2 garret rooms.

Interpretation: The present analysis has essentially substantiated the interpretations presented by Maxwell and Binford in 1961. F. 51 very likely represents a Commanding Officer's house and/or officers quarters in use throughout the period of French control. Artifacts associated with the basement fill of F. 51 indicate that it was abandoned and filled between 1755 and 1765. We thus assume that F. 51 was abandoned and that it was replaced with F. 57 during this period. The second Commanding Officer's house, F. 57, was in use from this time, then, until 1770, when the construction of a new Commanding Officer's house (F. 11) was completed. F. 11 was used until 1781; there is no mention of its removal to Mackinac Island.



## STRUCTURE FEATURE 60: French Guardhouse

Figures 6, 8

This feature was excavated in 1960 and is briefly reported in Maxwell's 1960 preliminary report (n.d. [1960: 8-10]).

Location and Orientation: F. 60 is located approximately mid-way between F. 3 and the present west stockade, bounded by grid lines 110 and 140, L70 and L100. The structure is nearly square with a north-south, east-west orientation.

Dimensions: F. 60 is composed of 2 elements, the structure proper, 21'6" north-south by 21'6" east-west (external dimensions); and a structural addition which joins the east side, 18' north-south by 7' east-west (external dimensions).

Major Structural Features: The locations of all 4 walls are indicated by wall trench segments. The east and west walls were constructed of vertical posts, 6" to 8" in diameter, spaced between 2" and 17" apart. The northern 4 posts of the west wall were larger (ca. 12" in diameter) and spaced ca. 18" on center. This would leave a 6" space between posts. Two, heavy, support posts, placed in the same hole at the southwest corner, plus a 3' gap at the south end of the west wall indicate a doorway at this location. A fireplace was located at the south end of the east wall; 7' north-south by 4' east-west in total dimension, the stone hearth measured 3'6" north-south by 2'6" east-west. The inside edge of the hearth aligns with the inside edge of the wall, while the outside edge of the feature forms part of the east structure wall. A basement (F. 118) was located in the southwest corner of this structure (8' north-south by 4' east-west). F. 118 had thick plank sides (6" to 12" wide by 2" to 3" thick) and a bark-covered floor. Maxwell has interpreted several wall trenches along the east side of this structure as an antechamber with exterior smokehouse. This probable lean-to type of addition was 18'6" north-south by 5'6" east-west and had a square enclosure at the south end behind the fireplace. Post mold patterns along the south side of this addition indicate that entrance was gained at its southwest corner. There was also an entrance at the northwest corner.

Artifact Associations: Artifacts frequently associated with F. 60 and particularly with the fill in F. 118 include:

- Ceramics, (CA, GII, cream-colored earthenware; CA, GI, TC, brown and white tin-glazed earthenware; and CB, GI, white saltglazed stoneware)
- Fishhooks
- Tinkling Cones
- Gunflints (SC, spall gunflints)

- Awls
- Hawk Bells
- Buttons (CII, SA, T1, Va; CI, SD, T1, Va, both British)
- Beads (CI, SA, T2, Va and CI, SA, T3, Vd, both French)
- Religions Medallions

This assemblage in part reflects the suspected period of use of F. 60, that is, 1751-1769 (1770).

Relationships With Other Features: F. 60 overlies both F. 76 and 5. F. 60 may in turn be overlain by F. 61.

Documentation: A guardhouse is shown on all 3 period maps in the approximate location of F. 60. These maps indicate the following guardhouse dimensions: Magra, 19'6" north-south by 14'6" east-west; Nordberg, 20'6" north-south by 22' east-west; and Crown Collection, 22'6" north-south by 22' east-west. Both the Nordberg and Crown Collection dimensions are very close to the dimensions of F. 60. In addition, several eighteenth-century documents refer to the F. 60 guardhouse:

- Sept. 1751, La Jonquiere to French Minister, guardhouse burned and repaired, a new guardhouse constructed.
- 1765, Campbell to Gage, a guardhouse for an officer and 30 men needs to be built.
- Nov. 1769, Glazier to Gage, guardhouse present and plans made to build a needed guardhouse (there is no definite evidence at present to indicate that this proposed guardhouse was ever constructed).

Interpretation: The evidence above indicates that F. 60 was a French guardhouse, built in 1751 and used at least until 1769. After this date, 2 alternatives are feasible; either F. 60 continued to serve as a guardhouse or its use was discontinued with the proposed construction (?) of a new guardhouse in 1769. The latter alternative is suggested on the basis of the stratigraphic relationship between F. 60 and an overlying feature, F. 61.

**STRUCTURE FEATURE 61: British Blacksmith's shop**

**Figures 6, 8**

Feature 61 was excavated during the 1960 field season and has been reported by Maxwell in the 1960 preliminary report (n.d. [1960: 10-12]).

Location and Orientation: The north, east, and west walls of F. 61 are superimposed over the same walls of F. 60. The south wall of F. 61 is 9'6" south of the south wall of F. 60.

Dimensions: 31'3" north-south by 21'6" east-west (external measurements).

Major Structural Features: Horizontal log foundation and possibly horizontal log walls; entrance at the northwest corner; large stick and clay chimney outside of the west wall at approximate wall center, represented by a square area bounded by a wall trench with pickets; on the inside of the west wall, opposite the chimney foundation is a large rectangular area (7'8" east-west by 6' north-south) of fire-baked clay and rocks, delimited on its north and east sides by vertical posts and with a circular hearth area in the center filled with charred earth and charcoal. These features have been interpreted by Maxwell as a built-up hearth on a platform (inside the structure), and adjacent large chimney as a forge for metal-working.

Artifact Associations: F. 61 artifact associations are not reliable because of presence of artifacts associated with the underlying F. 60. Artifacts which can be specifically attributed to the forge include gun parts, metal scrap, creamware ceramics, and British King's 8 buttons.

Relationships With Other Features: Sections of F. 61 overlie Features 5, 76, and 60.

Interpretation: F. 61 has been interpreted by Maxwell as a British blacksmith's shop, built after 1774. The present analysis substantiates this interpretation.

#### STRUCTURE FEATURE 62: Church Area

Figures 6, 8

Feature 62 was excavated during the 1960 field season and has been described and tentatively interpreted by Maxwell (n.d. [1960: 3-4; 12-14]). The following structure description and interpretation are essentially those proposed by Maxwell. The church has subsequently been reconstructed.

Location and Orientation: Feature 62 has been assigned to several church structures in the west-central area of the fort, bounded by grid lines 160 and 210, L80 and L160. The archaeological evidence of F. 62 has been particularly difficult to interpret, due primarily to the superimposition of 2, and possibly 3, church structures in the same area and to the extensive pot-hunter activity which characterizes this area. Interpretations are thus provided tentatively and are based on the most acceptable explanation among several alternatives. Although Maxwell suggests that there may have been 3 different church structures in the same area, this discussion is limited to 2 structures which are at least in part definable.

Dimensions: The 2 church structures will be termed F. 62A and F. 62B. The latter was apparently constructed between 1741

and 1743, while the former existed during the early years of French control.

- F. 62A, 66' east-west by 34'6" north-south.
- F. 62B, 39' east-west by 34'6" north-south.

Major Structural Features:

- F. 62A, walls of vertical posts set in narrow wall trenches.
- F. 62B, walls of horizontal logs; floor joists laid directly on the ground surface, north-south joists spaced ca. 9' to 11' on center; structure is rectangular except offset areas along the north and south walls at the east end, and on the south wall slightly west of center. The northeast and south-east corner extensions (9' east-west by 4'6" north-south and 11'6" east-west by 5' north-south respectively) may represent small chapels (?). The south wall extension, 23'6" east-west by 6' north-south, has been interpreted as a vestry or sacristy.

Artifact Associations: Artifacts associated with either F. 62A or F. 62B have not been segregated. The following artifact categories were recovered in high frequencies in the area of F. 62.

- Beads (CI, SA, T2, Va; CI, SC, T1, T2, and T3; CII, SA, T8, Va, all French)
- Ceramics (CC, GI, porcelain; CA, G2, cream-colored earthenware; CB, G1, white saltglazed stoneware; CA, G1, tin-glazed earthenware)
- Gunflints (SC, spall gunflints)

This assemblage indicates that the area of F. 62 was in use throughout the period of site occupation.

Relationships With Other Features: A total of 24 burials were found in association with the church, underlying the east end; several of these were found in a cemetery plot east of the church. A Priest's house and connected blacksmith's shop join the church on its north side. The first expansion stockade (F. 81) may have bordered the east side of F. 62A. F. 62B overlies F. 81 and the west stockade of F. 5. The west side of F. 62B is adjacent to the west wall of F. 82, the second expansion stockade. The common south wall of F. 62A and F. 62B is in alignment with the south wall of a series of suspected French rowhouse units (F. 37 and 95). A very late stone blockhouse (?), F. 66, is superimposed over the south-central part of F. 62.

Documentation: F. 62 is shown on all 3 period maps with the following dimensions: Magra, 64' east-west by 26' north-south; Nordberg, 51' east-west by 29' north-south; and Crown Collection, 62' east-west by 38' north-south. The Crown Collection measurements are very close to the archaeological dimensions of F. 62A;

66' east-west by 34'6" north-south. Four historic references have relevance to F. 62.

- Register of Baptisms and Interments at Mackinac, entry noting that Marie Coussante died Aug. 10, 1743, and was the first one buried in the new church built by her father, under the holy-water font.
- Journal of Peter Pond, describes the church in 1773 as "a Commodious Roman Church . . . . Before it was given up to the British there was a French missionary established here who resided for a number of years here."
- Feb. 1780, Sinclair to Brehm, noting that the church is being transported to the Island for rebuilding at the new post. In addition, the names of the various Jesuit priests who served at Fort Michilimackinac are known:

Joseph Marest	1715
Charles Michel Messaiger	1723-1731
Jean Baptiste Saint-Pe	1730s
Pierre Luc Du Jaunay	1730-1765
Michel Guignas	1737-1738
Jean Baptiste de La Morinie	1741-1752
Claude Godefroy Coquart	1741-1744
Marin-Louis Le Franc	1753-1761

Interpretation: Features 62A and 62B are church structures which were in existence at different times during the period of site occupation. F. 62A may have been constructed as early as 1720-1725. This early structure was outside the west wall of the original F. 5 stockade enclosure. F. 62A was replaced by a larger church, F. 62B, in the early 1740s. This later structure was built within the fort enclosure of that time, possibly represented by the west wall of stockade Feature 82. F. 62B may have existed until the time of site abandonment, although as Maxwell points out (n.d. [1960: 13]), a third church structure may have been built after 1772.

**STRUCTURE FEATURE 66: Late British Period Blockhouse.**

Figures 6, 8

This structure was excavated during the 1960 season and has been described by Maxwell (n.d. [1960: 4-5]).

Location and Orientation: F. 66 is located slightly inside of the south wall of F. 62 and is bounded by grid lines 180 and 200, L120 and L140.

Dimensions: 11'6" north-south by 11'6" east-west, external measurements.

Major Structural Features: F. 66 consists of a square, stone foundation set in shallow wall trenches, 1'6" to 2' wide, with a possible entrance through the east wall at the southeast corner.

Artifact Associations: Ceramics (CB, GI, white saltglazed stoneware) and gunflints (SC, spall gunflints) were found in high frequencies in the area of F. 66. The specific association of these categories with F. 66, however, is questionable.

Relationships With Other Features: F. 66 is superimposed over the floor joists of F. 62.

Documentation:

- Oct. 1779, letter from Sinclair to Brehm, noting that Lt. Mercer has been directed to raise a blockhouse which will overlook and command hollow ground behind a sand hill which the troops could not reduce and which will flank the traders' houses.
- Feb. 1780, letter from Sinclair to Brehm, noting that "a block house has been erected, detached, and placed so as to cover the defenseless side of this fort and to allow us some safety in opening our land gates. It is a square of 16 feet, pierced for cannon on three sides, and will enable us to keep musquetry, at a distance from it over-looking every hollow way for 600 yards."

Interpretation: F. 66 represents the 1779 blockhouse referred to by Sinclair. This structure was constructed as a defensive measure after the church had been removed to Mackinac Island. The blockhouse was constructed in this location to protect the most vulnerable east side of the fort enclosure.

STRUCTURE FEATURE 77: Brick kiln

Figures 6, 8

Feature 77 was excavated during the 1961 season and has been described by Binford (1961: 27-30).

Location and Orientation: F. 77 is located south of Features 76 and 25, west of Feature 3, and is bounded by grid lines 140 and 160, L40 and L70. The long axis of this structure is oriented east-west.

Major Structural Features: F. 77 is defined by a long, narrow, rectangular depression. The depression contained a layer of charcoal, ash, pink clay, fired clay, brick, and mortar fragments. Two posts were noted at the west end corners; 2 additional posts were placed in the center of the north and south sides.

Artifact Associations:

- Bricks
- Ceramics (CB, GI, white saltglazed stoneware; CC, GI, porcelain)
- Pipestems (8, dated 1750)
- Buttons (1, CII, SA, T1, Va, British)

Relationships with Other Features: F. 77 is stratigraphically below a gravel layer which is associated with the construction of F. 3.

Interpretation: F. 77 has been interpreted by Binford (n.d. [1961: 30]) as a brick kiln constructed during a late period of French control and abandoned by 1766; this dating and interpretation is consistent with the present analysis.

# STRUCTURE FEATURE 81: First Expansion French Period Stockade

Figures 6, 7, 8, 9

Sections of this stockade were excavated between 1959 and 1966; brief statements on this feature appear in each of the yearly preliminary reports.

Location and Orientation: The north wall of F. 81 is between L30 and L150, 50, and 60. This wall turns south at the northwest bastion in squares 60 and 70, L140 and runs to the south through square 250L120. The south wall of F. 81 may be represented by F. 273 (259C).

Major Structural Features: F. 81 consists of a deep, stockade, wall trench which has been traced for a minimum distance of 303' (110' north segment, 193' west segment). An additional 57' of the west wall and a south wall of 81' may be added if we consider F. 293 and F. 273 (259C) as a west-wall segment and south wall respectively of F. 81. This latter possibility would indicate a stockade with a west wall 250' long. A 3'6" wide stockade gate has been noted in the west wall in square 140L120. F. 81 has a 11' north-south by 11'6" east-west bastion (external measurements) at its northwest corner. The wall trench which forms F. 81 varies between 3'4" and 5' wide at its surface, to ca. 15" wide at its bottom. Posts and post molds (8" diameter) were found spaced at irregular intervals. This feature was probably bordered by an internal, earth-firing ramp and an external, dry ditch.

Artifact Associations: The following artifact categories were represented in the F. 81 trench fill:

- Beads (CI, SA, T2, Va, French)
- Ceramics (CA, GI, tin-glazed earthenware: CB, GI, white saltglazed stoneware)
- Tinkling cones

Relationship With Other Features: F. 81 is underlain by F. 5 and F. 62. F. 81 is superimposed by Features 90, 220, and a series of north-south fence trenches which run between the later stockade F. 82 and the rowhouse unit represented by F. 90 (96, 91).

Interpretation: F. 81 represents the first expansion stockade during the French period of control. F. 81 was constructed when F. 5 was torn down (between 1725 and 1735) by moving the walls of F. 5 65' to the north and 62'6" to the south (assuming F. 273 (259C) to be the south wall of F. 81). The west wall of F. 81 is between 2' and 4' outside of the original west wall of F. 5. The F. 81 stockade was probably in existence by 1735 and was in use until 1751, the date at which the next stockade expansion is believed to have occurred. The dating of F. 81 is based primarily on its stratigraphic and horizontal relationships with other structures.

#### STRUCTURE FEATURE 82: Second Expansion French Period Stockade

Figures 6, 7

Sections of Feature 82 were excavated between 1959 and 1966.

Location and Orientation: A section of the north wall of F. 82 is located between grid lines 40 and 50, L60 and L110. A section of the west wall of F. 82 may be represented by a wall trench between 110 and 220, L150 and L160 (F. 353). The south wall of F. 82 may be represented by either F. 277 or F. 278 (271).

Dimensions: The north wall of F. 82 has been traced for a distance of 58'. The west wall of this feature, possibly represented by F. 353, has been traced for a distance of 109'. Trench features 277 and 278 (271) are 81' and 69'6" long respectively.

Major Structural Features: F. 82 is represented by a deep, well trench which varies between 2'6" and 3' wide at first recognition. Posts and post molds (6" to 8" diameter) were intermittently located in this trench.

Artifact Associations: The assemblage of artifacts derived from F. 82 trench fill is not indicative of a time of construction. This assemblage contains artifacts which date from both the French and British periods of control. Interpretations based on other evidence indicate that the British-period artifact associations are invalid.

Relationships With Other Features: F. 82 is directly associated with a series of north-south fence trenches which connect with



the north wall of F. 90 (96, 91). The supposed west wall of F. 82 is adjacent to a north-south trench which delimits the west side of F. 62.

Documentation: It is tentatively suggested that F. 82 represents the stockade referred to in the following reference:

- Sept. 1751, letter from La Jonquiere to French Minister, stating that the Sieur Duplessis has enlarged the fort on the Lake side.

Interpretation: F. 82 represents a second expansion stockade which was constructed during the French period of control. This stockade may be the one referred to above as having been constructed in 1751. The terminal date for F. 82 is determined by the initial date of construction of the third stockade expansion represented by F. 14 (1755-1760). Several alternatives have been considered for the location of the south wall of F. 82. The most logical choice at this time seems to be F. 278 (271). This choice would define a stockade with a 279' long west wall.

#### STRUCTURE FEATURE 88: French Period Well

Figures 6, 8

Feature 88 was excavated during the 1961 field season and has been reported in Binford's 1961 preliminary report (n.d. [1961: 22-27]). This feature has been reconstructed.

Location and Orientation: F. 88 is located in square 130L120.

Dimensions: See measurements in Major Structural Features below.

Major Structural Features: F. 88 consists of a wooden, well shaft which has been placed ca. 16' below the eighteenth-century ground surface. This shaft was constructed inside of an oval-shaped excavation (9' diameter at the surface and 7' diameter at the 8' deep level, the point at which bed rock was encountered). This excavation extended 6' into the bed rock and was shored with a rectangular, wooden structure consisting of vertical posts sheathed with narrow planks and sheets of bark, 6' north-south by 3'8" east-west. The shoring did not extend below the bed rock level. A wooden frame shaft (3'2" north-south by 2'8" east-west) consisting of vertical, sawed planks (1" to 1-3/4" thick) nailed to square timbers (5" to 7" square) framed inside the shaft was constructed in the bottom 8' of the well. This shaft was expanded above this point to a shaft which measured 5'6" north-south by 2'8" east west. This enlargement created interior shelves on the north and south sides of the well, 18" and 10" wide respectively. Little evidence exists of an overlying well-house structure.

The area between the wooden shaft and the original well excavation was filled with clean sand and gravel up to the surface of the limestone bed rock. Fill consisted of redeposited limestone above this level, parts of which were chinked with pink clay.

Artifact Associations: The bottom 3'6" of well fill represents fill which accumulated during the period of well use. The artifact assemblage in this fill was characteristically French in composition and could be representative of a French assemblage dating between ca. 1730 and 1760. The following diagnostic artifact categories were recovered:

- Beads (CL, SA, T2, Va; CI, SA, T7, Va; CI, SA, T9, Va; CI, SA, T6, Vb, French)
- Ceramics (CA, GI, tin-glazed earthenware, French)
- Knives (CI, GL, French Clasp Knives)
- Rosary Beads

The fill above this refuse deposit was deposited in one operation and consisted of a very similar artifact assemblage.

Relationship With Other Features: The F. 88 well-pit excavation passed through sections of the north and west walls of the early F. 5 stockade. F. 88 is adjacent to the inside of the west wall of F. 81 stockade.

Interpretation: F. 88 is a well which was constructed at about the time of the first stockade expansion represented by F. 81 (1730-1735). This well was probably in use until 1755 or 1760.

#### STRUCTURE FEATURE 89: French House

Figures 6, 8

This feature was excavated during the 1961 field season and has been briefly described by Binford (n.d. [1961: 15]).

Location and Orientation: F. 89 is located directly south of F. 88 adjacent to the west wall of stockade Feature 81.

Dimensions: 18' north-south by 15' east-west (external dimensions).

Major Structural Features: F. 89 is a rectangular house formed by 4 wall trenches. The shallow, wall trenches contained vertical pickets with evidence of pink clay used as chinking. A doorway may have been present through the south wall at the southeast corner.

Artifact Associations: No artifacts were found in definite association with F. 89.

Relationships With Other Features: F. 89 is superimposed over the west wall of stockade Feature 5 and is adjacent to the west wall of stockade Feature 81. The north wall of F. 89 aligns with the south side of the gate through F. 81.

Interpretation: The structural similarity of F. 89 to French rowhouse units, F. 25 (76, 27), and its proximity to F. 81 indicate that F. 89 was built during the French period of control, probably after 1730. F. 89 was not in existence in 1765; this is indicated by its absence on the Crown Collection Map.

STRUCTURE FEATURE 90 (96, 91): North-Northwest Rowhouse Unit,  
French and British Rowhouse Unit

Figures 6, 7

F. 90 (96, 91) was excavated during the 1961 field season; each of the feature units have been individually described in Binford's 1961 preliminary report (n.d. [1961: 16-20]). This structure has been reconstructed.

Location and Orientation: F. 90 is located in the northwest area of the site, immediately south of the north wall of the F. 81 stockade.

Dimensions: The 3 structures which compose rowhouse-unit F. 90 have the following external dimensions:

- F. 90, 26' north-south by 20' east-west
- F. 96, 26' north-south by 14'6" east-west
- F. 91, 26' north-south by 25'6" east-west

Major Structural Features: Each of the 3 structures are described individually.

- F. 90, north, south, and west walls consist of deep, wall trenches which contain vertical posts and post molds; the east wall is shallow and lacks wall-defined posts. A chimney is noted just north of center on the west wall, with a 3'6" to 4' long smoke chamber, constructed of crystalline rock and limestone.
- F. 96, west wall is common with the east wall of F. 90, east wall indicated by deep bearing support posts, ca. 14'6" east of the southwest corner; chimney at the center of the west wall, smoke chamber was 4' long inside by 6' long at its mouth, 3' deep, constructed of crystalline rock and clay. A basement (F. 83) occurs in the north-central part of the structure, 7' north-south by 5' east-west, constructed of vertical puncheons with internal plank lining and floored with bark.
- F. 91, all walls of this feature are indicated by the location of log-support "pilasters." A fireplace is located at

the center of the east wall, smoke chamber is 4' long inside, 6' long at its mouth, 3' deep, and is constructed of crystalline rock set in clay. Two basements are associated with this structure: (1) F. 79 located near the northwest corner, 5' east-west by 7' north-south, 5' deep, constructed of vertical posts supported with horizontal planks nailed to the posts; (2) F. 85, 7' east-west by 9' north-south, constructed of closely set, vertical puncheons.

Artifact Associations: Features 96 and 91 contained the majority of artifacts associated with this structure:

- Bricks
- Buttons (CI, SD, Tl, Va, British military; CII, SA, Tl, Va, British military; CIV, SA, Tl, Va)
- Tinkling Cones
- Cufflinks
- Ceramics (CA, GIV, TD, Jackfield; CA, GI, tin-glazed earthenware; CA, GII, cream-colored earthenware)

Gunflints were notably absent in F. 90, 96, and 91. A different assemblage of artifacts characterized garden or refuse areas north and south of the rowhouse unit:

- Beads (CII, SA, French)
- Ceramics (CC, GI, porcelain; CA, GII, cream-colored earthenware; CB, GI, white saltglazed stoneware; CA, GIV, TD, Jackfield; CA, GI, tin-glazed earthenware, high frequency of French)
- Rings (CII, SA, Jesuit rings)

Predominantly British artifact assemblages characterized each of the 3 basements associated with this structure feature, except for the bottom level of F. 83, which contained a late, French-period assemblage.

Relationships With Other Features: Binford has suggested (1962 map of F. 110 and 111) that F. 90 (96, 91) was modified during the British period of control, resulting in 2 overlying structure features, F. 110 and F. 111. The important modification is seen as the rebuilding of the common wall between F. 90 and F. 96, 6'6" to the east, where it served only as the east wall of F. 110. The west wall of F. 111 is represented by the previous common wall between F. 96 and F. 91. This interpretation is tenuous at present and is included as a possibility for future investigation only.

There is an additional eastern unit of this rowhouse, attached to the east side of F. 91 and represented by an east-west wall trench which extends from the southeast corner of F. 91. This structure is identified as F. 92. The assumed east end of this rowhouse unit is represented by north-south trench segments in squares 70 and 80 L20. This wall trench is in alignment with the east walls of F. 21 and F. 3. If this assumption is correct, the total east-west length of this rowhouse unit is 110'.

A series of 5, north-south trenches extend from the north wall of structure Feature 90 (91, 96) and join the north wall of stockade Feature 82. These trenches (garden fences) are relatively shallow and rarely exhibit post molds. In extending between F. 90 and F. 82, these trenches are superimposed on the earlier F. 81 stockade north wall. In addition, the north and south walls of F. 90 are superimposed on the F. 81 stockade west wall.

Documentation: This rowhouse unit is shown on all 3 period maps with the following width (north-south) dimensions: Magra, 19'; Nordberg, 23'; Crown Collection, 24'9". The Crown Collection map very closely represents the archaeological dimension of F. 90 (96, 91), 26'. Unfortunately, individual house-unit measurements are not presented on the Crown Collection map. The other 2 maps each indicate the presence and size of 5 structures which comprise this rowhouse unit. These structures exhibit east-west dimensions as follows (noted from west to east):

Magra	Nordberg
25'	31'6"
25'	20'
23'6"	15'
18'6"	21'
23'	23'
Total: 115'	110'6"

The total length of the Nordberg rowhouse unit (110'6") is very close to the 110' length suggested by the archaeological evidence. Both the Crown Collection and the Magra maps indicate rowhouse-unit lengths between 115' and 117'6". The Magra map indicates that an English trader occupied the westernmost house of this unit and that British officers occupied the next house.

Additional documentary information is provided for this rowhouse unit in a document entitled "State of Houses and Lands of Michilimackinac," compiled by a resident Royal Notary between 1754 and 1765. Although it is presently impossible to identify the occupants of individual houses from this source, the first recorded transaction which applies to this rowhouse unit is dated 1754.

Interpretation: Structure F. 90 (96, 91) represents 3 houses in a rowhouse unit which was constructed in approximately 1751. This initial date is supported by the stratigraphic relationship between F. 90 and F. 81. On this basis, F. 90 was constructed after F. 81, at approximately the same time as F. 82, and before F. 14. It is believed that F. 82 was constructed in approximately 1751. This dating is further indicated by the presence of a late French artifact assemblage in the

bottom of basement F. 83. F. 90 was probably in existence until 1780-1781. The majority of artifacts associated with this feature are British in origin, whereas the trash or garden areas north and south of these units contained both late French and British assemblages. These units were presumably originally occupied by French inhabitants and were later used by British inhabitants (traders, F. 90), and military officers (F. 96). Garden features north of F. 90 (96, 91) are clearly marked by attached north-south fence trenches. These trenches terminate in the north wall of the second expansion stockade, F. 82. The possible superimposition of Structures F. 110 and F. 111 is only mentioned at this time, pending the interpretation of data recovered from the 1967 excavations in adjacent areas.

#### STRUCTURE FEATURE 93: French House

Figures 6, 7, 8

This structure was excavated during the 1961 field season and has been briefly described by Binford (n.d. [1961: 15-16]).

Location and Orientation: F. 93 is adjacent to the inside of the west wall of stockade F. 81 and is immediately south of F. 90 (96, 91).

Dimensions: 20' north-south by 18'6" east-west (external measurements).

Major Structural Features: F. 93 is defined by 3, shallow, wall trench segments. The south wall of this structure has not been defined. An external chimney is noted at the approximate center of the east wall; the fireplace was 4' wide at the mouth and 3' deep. Internal partitioning is suggested by a 6'6" long, east-west trench segment attached to the west wall, 7'6" from the southwest corner.

Artifact Associations: The artifact categories which could be associated with F. 93 were temporarily non-specific, indicating a broad date range between ca. 1730 and 1770.

Relationships With Other Features: F. 93 stratigraphically underlies a section of the south wall of F. 90, corresponds in angular orientation to the west wall of stockade F. 81, and aligns with the east wall of F. 89.

Interpretation: F. 93 is a French house, constructed between 1730 and 1735, and abandoned by 1751. These dates are based on the suspected contemporaneity of F. 93 with the first expansion stockade, F. 81, and on the stratigraphic position of this structure below F. 90.

# STRUCTURE FEATURE 202 (203, 217): Possible British Period Structure

Figures 6, 9

F. 202 was excavated during the 1962 field season and has been reported by Vanderwall (n.d. [1962: 1-4]; 1966: 122-123). The description and interpretation of this feature is based on Vanderwall's 1966 report.

Location and Orientation: This structure is located at the east end of the southwest rowhouse unit (F. 220) and is delimited by grid lines 210 and 250, L20 and L60.

Dimensions: 28' north-south by 29' east-west (external measurements).

Major Structural Features: F. 202 (203, 217) consists of a number of north-south and east-west wall trench segments which have been tentatively interpreted by Vanderwall as a British guardhouse structure. The northeast corner of this structure is represented by a rock foundation (F. 217), 1'10" wide, which also served as a fireplace. A 3'6" doorway is indicated by a break in this foundation on the east end of the north side. The west and north walls are represented by joined, wall trench segments while the south wall is represented by a long, deep trench which has been interpreted in this report as the south wall of stockade Feature 5. Two privies (?) are associated with this structure: (1) F. 231, located at the inside center of the south wall, 3'6" north-south by 3' east-west, vertical-post sides, and enclosed within a vertical-post structure, 6'6" north-south by 5' east-west; and (2) F. 228, located outside the west wall at the southwest corner, 3'6" north-south by 2'6" east-west, vertical-post sides, entrance gained through a doorway in the east wall of F. 202.

Artifact Associations: None of the artifacts found in the area of F. 202 can be definitely associated with the feature itself.

Documentation: F. 202 is adjacent to a lot where a guard house existed which was torn down in 1764. This lot is referenced as follows:

- Oct. 1768, letter from Glazier to Gage, noting that the only King's land in the fort is the area of the Commanding Officer's house "and a spot where the French governor used to live 42 by 25 feet where stood a house which Captain Howard (stationed at the site between 1764 and 1766) ordered to be pulled down and converted into a garden."
- The Magra map (1766) indicates that this lot is "The Kings grounds, here Captain Howard pull down the Guard House and make a garden." This lot is noted on all 3 maps as either

a garden or a King's lot, flanked on the west by a long rowhouse unit (F. 220). The west side of this lot (ca. 7') appears to overlap the east wall of F. 202.

Interpretation: Vanderwall has interpreted this structure as a guardhouse built after 1768, in an area made available by the removal of the 2 last houses of rowhouse unit F. 220 (Vanderwall 1966: 123-124). This interpretation, as noted by Vanderwall, was originally questionable, due primarily to the existence of F. 220 rowhouse units in the same area as well as the probable presence of an earlier French structure underlying F. 202. The present analysis has been unable to more efficiently identify the location and function of structure F. 202.

STRUCTURE FEATURE 220: French Rowhouse Unit; Southwest Rowhouse Unit  
Figures 6, 9

Feature 220 was excavated during the 1962 and 1963 field seasons, has been reported by Vanderwall (n.d. [1962]; 1966), and has subsequently been reconstructed.

Location and Orientation: The north and south sides of F. 220 are located between grid lines 200 and 240.

Dimensions: F. 220 is 24'6" wide (external measurements). The total length of this unit--that indicated on the Magra and Nordberg maps (ca. 140-150')--has not been completely excavated; 124' of this unit have been excavated which defines the presence of 6 joined, but individual, rowhouses.

Major Structural Features: Each of the 6 house units are identified and described below and are referenced by the letters A through F, starting at the west end.

- A, this unit has been partially excavated and consists of a central basement (F. 215) and a fireplace (F. 214) located on the east wall towards the northeast corner. The basement, 10'6" east-west by 12'6" north-south, is constructed of vertical posts, supported on the inside by limestone rocks, and has a limestone-slab-lined floor. The fireplace feature is poorly defined; it is represented by a ca. 5' square area of flat limestone rocks overlain by burned sand and clay. This fireplace could conceivably have been H-shaped, thus serving both units A and B. The north and south walls of this unit are both very poorly defined. The east wall, defined by a pilaster support in square 220L140, appears to extend through fireplace Feature 214.
- B, this house contains a basement (F. 213) and possibly was served by half of an H-shaped fireplace (F. 221) along the east wall. The basement, 7'5" north-south by 4'11" east-west is located in the south-central area of house B. The



fireplace consists of scattered, fire-cracked rocks set in a pink-clay matrix. Horizontal floor boards (F. 245 and F. 246), 6" to 8" wide, were noted in the southwest corner of this house. The dimensions of house B are 23'6" east-west and 24'6" north-south.

- C, 23' east-west by 24'6" north-south, contained a basement, F. 212, and may have been served by half of an H-shaped fireplace (F. 221). The basement feature, 4' square, was located in the west-central area of house C and was constructed of vertical corner posts with sides of horizontal planks between corners. A 6" thick layer of clay surrounded this basement. The east wall of this house is delimited by a well-defined, north-south wall trench.
- D, 23'6" east-west by 24'6" north-south, contained 2 basements, F. 210 and F. 209, and was served by half of an H-shaped fireplace (F. 208) at the center of the east wall. The north and south walls are marked by well-defined, deep east-west wall trenches. The east wall is defined by a north-south wall trench segment which runs through the center of F. 208. Basement F. 210, located near the center of the west wall and 4' square, was constructed of vertical posts lined with bark. Two barrels were originally located along the south side of the basement. Basement F. 209, located near the center of house D and 8'6" north-south by 5'6" east-west, was constructed of split vertical log sides and log corners. This basement was floored with 1/4" to 1/8" thick boards. The fireplace (probably H-shaped) served houses D and E and was represented by well-laid stones in the form of an L, pink clay, and burned sand and clay.
- E, 24'6" north-south by 24'6" east-west, was served by half of an H-shaped fireplace (F. 208). The north and south walls of this unit are clearly defined by deep, east-west wall trenches. The east wall of this structure is represented by a short north-south trench segment in square 230L50. An internal east-west wall trench segment divides this unit into north and south parts.
- F, 24'6" north-south by 23' east-west; the north and south walls of this house are defined by east-west trench segments; the east wall (?) is defined by a short, north-south trench segment in square 210L30. A possible fireplace for this house (F. 217) is located near the northeast corner.

**Artifact Associations:** Two links of artifact association may be defined for F. 220: (1) general associations as evidenced by artifact category distribution maps and (2) specific house-unit associations defined by both feature associations and distributional concentrations.

Artifacts which can be attributed to F. 220 but which cannot be assigned to specific house units are:

- Buttons (CI, SC, T1, Va, French, 1730-1760)
  - Ceramics (CB, GI, white saltglazed stoneware, low frequency)
  - Gunflints (SA, blade gunflints, post-1740)
  - Rings (CII, SA, Jesuit rings)
- Artifacts which can be attributed to specific houses are:
- A, -Gunflints (SA, SC, spall and blade gunflints)
    - Knives (CI, GI, French clasp CI, G2, British clasp)
    - Buttons (CI, SD, T1, VC, Royal Irish, British)
    - Ceramics (CB, GI, white saltglazed stoneware; CA, GII, cream-colored earthenware; CC, GI, porcelain; CA, GI, tin-glazed earthenware)
  - B, -Ceramics (CC, GI, porcelain; CA, GII, cream-colored earthenware; CA, GI, tin-glazed earthenware, high frequency French)
    - Knives (CI, GI, French clasp)
    - Gunflints (SC, spall gunflints)
    - Fishhooks
  - C, -Ceramics (CC, GI, porcelain; CA, GII, cream-colored earthenware; CB, GI, white saltglazed stoneware; and CA, GI, tin-glazed earthenware, high frequency French)
    - Knives (CI, GI, French clasp)
    - Bale Seals (French)
    - Gunflints (SC, spall gunflints)
    - Beads (CII, SA, T1; CII, SA, T12, both French types)
  - D, -Ceramics (CA, GI, tin-glazed earthenware, high frequency French; CB, GII, TB, brown stoneware; CA, GIII, TB, brown glazed redware)
    - Rings (CII, SA, Jesuit rings)
    - Beads (CI, SA, T2, Va; CI, SC, T1; CII, SA, T1; CI, SC, T1 and T2, all French types)
    - Buttons (CI, SD, T1, Va; CII, SA, T1, Va, both British military types; CI, SC, T1, Va, French, 1730-1760)
  - E, -Beads (CI, SA, T2, Va; CI, SC, T1; CI, SC, T2, French)
  - F, specific artifact categories could not be attributed to this house unit.

In the case of F. 220, it is also important to consider those artifact categories which were generally absent or rare; these include:

- Gunflints (SC, spall gunflints)
- Ceramics (CC, GI, porcelain; CA, GIII, TB, brown glazed redware; CA, GI, TC, brown and white earthenware, French; CA, GI, TD, powdered tin-glazed earthenware, post-1750; CB, GII, TB, Rhenish stoneware)

Artifact categories recovered from the garden area south of F. 220 very closely reflect the mixed French-British assemblage found within the rowhouse proper, although all of the categories noted above as rare or absent in F. 220 were noted in high frequencies in the garden areas.

Relationships With Other Features: F. 220 overlies the west walls of stockade Features 5 and 81, probably overlies the west wall of stockade F. 82, and is inside stockade F. 14. The latter two associations are based on the projected locations of F. 82 and 14, since the areas in which they would occur at the west end of F. 220 have not been excavated. F. 220 underlies F. 202. This rowhouse unit is also associated with a series of north-south and east-west trenches to the south which are thought to represent garden fence and/or lot boundaries. The most important of these trenches, F. 233 (314, 317) runs east-west between squares 270L140 and 260L30, at a distance of approximately 21' south of the south wall of F. 220. This boundary is clearly defined on the Nordberg and Crown Collection maps. The entire north wall of F. 220 is joined by a series of shallow, wall trenches which are thought to represent porches. The north wall of F. 220 is closely aligned with the south end of F. 16, a defensive stockade thrown up around F. 3 and lasting until 1781, indicating that F. 220 was in existence until 1781.

Documentation: Two documentary sources apply to the interpretation of F. 220: (1) a document entitled "State of Houses and Lands at Michilimackinac," compiled between 1754 and 1765 by a Royal Notary at the site, and (2) the 3 eighteenth-century maps of the site. The first source indicates that F. 220 was in existence at least by 1756--the first date at which a land transfer was recorded for this unit. The second source consists of the Crown Collection map (1765), the Nordberg map (1769), and the Magra map (1766), all of which document the presence of F. 220. Both the Magra and Nordberg maps very closely reflect the predicted length of F. 220, including the lot at the east end which at one time contained an additional house attached to F. 220, measuring 147'6" and 142'6" respectively. The projected length of this unit (and lot) based on archaeological evidence is 147'. In spite of this correspondence in the dimension of total length, individual house dimensions cannot be as easily determined. Individual houses represented on the Nordberg map vary in length between 19'6" and 26'6"; the same units on the Magra map vary between 18' and 30' in length.

Interpretation: F. 220 represents a series of joined rowhouse units which were probably constructed by the French between 1755 and 1760 and which were in use until 1781. The majority of artifact associations are French (dating between 1730 and 1760) and secondarily, British, reflecting the feature's initial French construction and occupation as well as the re-occupation of this area and of certain house units by British soldiers after 1761. F. 220 consisted of 6 and probably 7 house units, each of which was 24'6" in width (north-south) and between 23' and 24'6" in length (east-west). Garden plots

characterized the area within 21' of the south wall, while the north wall is lined with a series of porch-like additions. Four of the 6 houses defined have basements; all units are served by either double H-shaped fireplaces or single mouth fireplaces.

F. 215 (in house A) was not originally believed to be a part of F. 220 based on an initial analysis. The present analysis, in considering projected house size and orientation, suggests that F. 215 and its associated house structure (A) were a part of F. 220, representing the westernmost house unit of this feature.

**STRUCTURE FEATURE 266:** French Rowhouse Unit; South Southwest Rowhouse Unit (Feature 266 has previously referred specifically to one house of this rowhouse unit, but is used here to reference the entire rowhouse unit).

Figures 6, 9

F. 266 was excavated during the 1964 field season and has been partially described by Vanderwall (n.d. [1964]) and Stone (n.d. [1965]). Two additional house structures representing this rowhouse unit were excavated by James A. Brown during the 1967 field season. These units are briefly mentioned as they relate to the size and alignment of F. 266.

Location and Orientation: F. 266 is located between Feature 220 and the south stockade of the site. This feature is bounded by grid lines 260 and 300, L20 and L.50.

Dimensions: F. 266, a 24'6" wide series of rowhouses has been excavated to a total east-west distance of 125', including data produced during the 1967 excavations. Based on the alignment and spacing of house units, the total length of this unit should be 142'6", closely approximating the 141'6" and 138'6" distances derived from the Magra and Nordberg maps respectively. This unit is historically (Nordberg map) and archaeologically represented by 7 house units, 6 of which have been completely excavated, and 1 of which has been partially excavated through the 1967 field season.

Major Structural Features: The individual house units of F. 266 are referred to in this discussion by the numbers 1 through 7, counting from the west.

- 1, ca. 24'8" north-south by 13'4" east-west, is defined by wall trenches on the north, south, and east and by a fireplace (F. 422) on the west. A basement (F. 424A) is located adjacent to the south wall.
- 2, 24'8" north-south and 19'6" east-west, is defined by a fireplace (F. 383) opening from the west wall, by wall trenches on

- the north and south sides, and by the back of a fireplace (F. 348) on the east side which serves house 3.
- 3, 24'6" north-south by 18'6" east-west, is defined by a basement (F. 297) in the southeast corner and a fireplace (F. 348) at the approximate center of the west wall. The fireplace was constructed of 2 tiers of granite boulders which form a half H-shaped fireplace opening to the east. The bottom tier consisted of 6 large boulders set on sterile beach sand and cemented with pink clay. The top tier consisted of ca. 30 smaller boulders, also cemented with clay. The maximum dimensions of this feature were 4' east-west by 5'10" north-south, with sides which vary in width from 1'6" to 1'0". The north and east faces of the north side were prepared with white, cement-like chinking, of plaster, approximately 3/8" thick. The mouth of this feature was 3'6" wide. The basement, 7'2" north-south by 6'10" east-west is constructed of 2 to 3" diameter vertical posts lined on the inside with horizontal planks. Internal partitioning has been recorded in the southwest corner of the basement and possibly represents a secondary enclosed area within the basement. The north wall of house 2 is defined by a deep east-west wall trench segment, F. 294. The south wall is defined by a trench-like feature and scattered east-west trending wood, possibly representing a sill. The location of the east wall is indicated by the location of a garden fence (F. 281) which joins the southeast corner of the house, and by a north-south trench segment in square 300L100.
  - 4, 24'6" north-south by 22'6" east-west, is defined by a basement (F. 262) and a possible fireplace in the northeast corner. The north and south walls of this unit are poorly defined, represented by east-west-oriented soil discolorations and trench segments. The east wall, defined by a narrow north-south wall trench containing upright posts, also serves as the west wall of house 5. The basement, 4'9" north-south by 5'6" east-west, is constructed of horizontally laid 4" diameter cedar logs, interior to 6" diameter vertical corner posts.
  - 5. (also F. 266), 22'6" east-west by 24'6" north-south, is defined by a basement (F. 267) in the southwest corner. The north and south walls are poorly defined. The east wall is represented by a narrow, north-south wall trench, interrupted by a fireplace (F. 252) which serves house 6. The basement, 4'3" north-south by 4'9" east-west, is constructed of horizontally laid 4" diameter logs exterior to vertical corner posts.
  - 6, 24'6" north-south by 24' east-west, is defined by a fireplace (F. 252) on its east side and a basement (F. 265) located in the northeast corner. The southeast corner of this house is defined by the junction of wall trench F. 351

(east-west) and wall-trench Feature 352 (north-south). F. 353, a narrow, wall trench with vertical posts represents the east wall of house 6. The fireplace, constructed of field stone, faced the east with a hearth area, 3' east-west by 2'8" north-south. The basement, 9'5" east-west by 6'1" north-south, was constructed of horizontally laid logs exterior to vertical corner posts. This basement was partitioned into east and west halves by a limestone wall and floored with 6" wide wooden planks.

- 7, the western 5' of this house have been excavated. The north and south walls are defined by wall-trench Features 315 and 351 respectively.

Artifact Associations: House units 3 through 6 are included in the following discussion. Two levels of artifact association are noted for F. 266: (1) specific house unit associations, and (2) general rowhouse unit associations. Artifacts specifically identified with individual house units are:

- 3, -Barrel Hoops
  - Ceramics (CA, GI, tin-glazed earthenware; CC, GI, porcelain; CA, GII, cream-colored earthenware)
  - Rings (CI, SA, Jesuit rings)
  - Gunflints (SC, spall gunflints)
  - Buttons (CI, SD, Tl, Va, British King's 8)
- 4, -Buttons (CII, SA, Tl, Va, British)
  - Gunflints (SA and SC, blade and spall gunflints)
  - Rings (CII, SA, Jesuit rings)
  - Knives (CI, GI, French clasp)
  - Ceramics (Ca, GII, cream-colored earthenware; CB, GI, white saltglazed stoneware; CA, GIII, TB, brown glazed redware)
- 5, -Buttons (CII, SA, Tl, Va, British; CI, SC, Tl, Va, French)
  - Gunflints (SA and SC, blade and spall gunflints)
  - Rosary beads
  - Ceramics (CC, GI, porcelain; CB, GI, white saltglazed stoneware; CA, GIII, TH, slip-decorated earthenware)
  - Buckles (CI, SB)
- 6, -Knives (CI, GI, French clasp)
  - Gunflints (SC, spall gunflints)
  - Buttons (CI, SC, Tl, Va, French; CI, SD, Tl, Va, British King's 8)
  - Ceramics (CB, GI, white saltglazed stoneware; CC, GI, porcelain; CA, GII, cream-colored earthenware; CA, GI, tin-glazed earthenware; CA, GIII, TB, brown glazed redware)

Those artifact categories generally associated with F. 266 in high frequency are:

- Barrel hoops
- Beads (CI, SB; CII, SA, T2, French)
- Buckles (CII, SA)
- Buttons (CI, SD, Tl, Va, British King's 8; CII, SA, Tl, Va, British)

- Ceramics (CC, GI, porcelain; CA, GII, cream-colored earthenware; CB, GI, white saltglazed stoneware; CA, GI, TC, brown and white earthenware; CA, GI, tin-glazed earthenware; French is rare)

The following artifact categories were notably rare or absent in the area of F. 266:

- Beads
- Awls
- Ceramics (CB, GII, TB, brown stoneware; CA, GIII, TD, green glazed earthenware)
- Jew's-harps
- Buttons (CI, SD, Tl, Va, French)

The artifact assemblage found in the garden areas south of F. 266 very closely duplicates that associated with F. 266 proper.

Relationships With Other Features: F. 266 stratigraphically overlies the west walls of stockade Features 5 (?), 81, and 82 and is inside the west wall of stockade F. 14. Garden fences commonly extend south of the south wall of F. 266; several of these correspond in position to the proposed north-south walls which separate F. 266 house units.

Documentation: F. 266 is documented in "State of Houses and Lands at Michilimackinac," compiled by a resident Royal Notary, and on all three eighteenth century maps of the site. The first source records land transactions for this rowhouse between 1754 and 1765. This source also indicates that a street (Rue De La Diable) paralleled F. 266 on the north side. This street was approximately 12' wide based on archaeological evidence. The Magra and Nordberg maps each indicate a rowhouse in the area of F. 266. The Nordberg map indicates that 7 house units were present, whereas the Magra map indicates only 6, although both maps correspond very closely in total rowhouse length, 138'6" and 141'6" respectively. The length of individual house units indicated on the Nordberg map vary between 19' and 21'6" (east-west). These house sizes very closely represent the sizes suggested on the basis of archaeological evidence, with all but one house (house 1) measuring between 18'6" and 24'.

Interpretation: F. 266 represents a rowhouse series which was constructed by the French between 1755 and 1760. The majority of artifact associations are British; specifically British military, indicating that the majority of this unit, although constructed and owned by the French, was occupied by British military personnel from the time of their arrival in 1761. This rowhouse unit was probably in use until 1781.

F. 266 consisted of 7, joined house units, each of which was ca. 24'6" wide (north-south) and between 18'6" and 24' long (east-west). Walls between buildings were constructed of vertical posts set in wall trenches. The north and south walls

probably consisted of vertical logs resting on horizontal sills which in turn were supported by pilasters. Five of the 6 units completely excavated had basements. The boundaries between each house were also delimited by north-south, garden-fence, wall trenches which extended south of the rowhouse.

#### PRIEST'S HOUSE STRUCTURE:

Figures 6, 8

The major portion of this structure was excavated during the 1967 field season; James A. Brown is presently preparing a comprehensive report on this structure which has been reconstructed. The present discussion is presented as a brief summary of evidence pertaining to this structure and is based on Brown's data.

Location and Orientation: The Priest's house (as well as the attached blacksmith's shop) is attached to the north wall of the church. This structure is within grid lines 110L170, L110, and L160.

Dimensions: Two different, superimposed, structures defined the Priest's house between 1750 and 1781. The first structure (Brown's Unit 1, First Foundation) was 23'2" east-west by 24' north-south. The second structure (Unit 1, Second Foundation) was 22'6" east-west by 26' north-south. In addition, two entrance or porch structures have been defined, 1 each attached to the north wall of the church and the south wall of the Priest's house. These 2 structures were separated by a 10' wide open entranceway. The 2 structures are 14' east-west and 6' to 8' north-south, and each is provided with a 4' wide doorway facing the interior passageway. A blacksmith's shop or forge structure (14' square) is attached to the southeast corner of the Priest's house proper.

Major Structural Features: The first Priest's house (first foundation) is defined by 2 joined cellars; an upper cellar, 8'10" east-west by 7'6" north-south, composed of split logs (puncheons) and posts with attached bark; and a lower cellar, 7' east-west by 8' north-south, composed of puncheons and posts. A 2'10" wide doorway joins the 2 cellars. The second Priest's house may be represented by a fireplace located inside the southeast corner. The second foundation is offset from the first by approximately 2'6" to the east. The forge structure exhibits a forge-hearth area in the northeast corner and a doorway on the west wall towards the northwest corner. The hearth is defined by a short series of large field stones set in pink clay.

Relationships With Other Features: The Priest's house overlies the west wall of the F. 82 stockade, is within the F. 14 stockade, and is external to the F. 81 stockade.



Documentation: The Priest's house is indicated on all 3 period maps; however, these representations have little dimensional correspondence with the archaeological evidence.

Interpretation: The identified Priest's house was separated from the north side of the Church by ca. 24' and consisted of 2 temporally distinct structures. The earlier structure was probably built around 1750 and was in use until at least 1770. A post-1770 date is indicated for the second structure. The existence of a blacksmith's shop attached to the Priest's house has been demonstrated both archaeologically and historically.

## PART II

The second part of this appendix is a complete list of archaeological features which were recorded between 1959 and 1966. Each feature is listed by number and location, briefly identified, and interpreted if possible.

<u>Feature</u>	<u>Location</u>	<u>Comments</u>
F.1	120 R40	Human femur, probably in refuse pit (F.6).
F.2	120 R30	Refuse pit, probably part of F.6.
F.3	See Fig. 6	British soldier's barracks (see Part I).
F.4	110 and 120 R40	Charred beams, horizontal log molds and north-south trench segment, possibly early French structure.
F.5	See Fig. 6	Earliest French stockade, described in Part I.
F.6	120 R40	Refuse pit underlying and part of F.4.
F.7	100 R20	Refuse pit.
F.8	100 R20	Refuse pit.
F.9	100 $\square$ - 90 R30	East-west trench, later identified as south wall of F. 51.
F.10	Unknown	Feature number combined with F.5.
F.11	Fig. 6	Commanding Officer's house, described in Part I.
F.12	120 R30	Deep square to rectangular pit, possible French well.
F.13	130 L30	North fireplace of F.3.
F.14	Fig. 6	Third expansion stockade (see Part I).
F.15	Unknown	
F.16	Fig. 6	Stockade around F.3 (see Part I).
F.17	100 and 100 L30	Pit covered with mustard clay.
F.18	Unknown	
F.19	120 R30	Refuse pit
F.20	100 L20	Circular pit lined with clay and fire-cracked rock, possibly hearth.
F.21	Fig. 6	Provisions storehouse (see Part I).

<u>Feature</u>	<u>Location</u>	<u>Comments</u>
F.22	Fig. 6	Provisions storehouse (See Part I).
F.23	130 L30	Footing for F.13, north fireplace of F.3.
F.24	Fig. 6	Part of F.27 (see Part I).
F.25	Fig. 6	French house in rowhouse unit (see Part I).
F.26	Unknown	Possibly chimney feature associated with F.25.
F.27	Fig. 6	French house in rowhouse unit (see Part I).
F.28	150 L45	Refuse pit, contemporaneous with F.3.
F.29	130 L50 (?)	Refuse pit.
F.30	160 L45	Refuse pit.
F.31	Fig. 6	French house (see Part I).
F.32	160 and 150	North-south and east-west trench segments, possibly represent corners of French house.
F.33	180 L40	Refuse pit.
F.34	200 L20	Large refuse pit containing field stone.
F.35	190 L40	Refuse pit.
F.36	110 L20	Refuse pit.
F.37	200 L40	East-west trench segment, possibly south wall of French house.
F.38	160 and 170 L10	Brown sand pit.
F.39	160 L10	Brown sand pit.
F.40	Unknown	East-west wall trench, combined with F.9.
F.41	90 L10 to 70 L40	North-south wall trench, later interpreted as west wall of F.51.
F.42	90 line between L20 and L40	East-west trench, later interpreted as east-west extension of F.16.
F.43	Unknown	Refuse pit.

<u>Feature</u>	<u>Location</u>	<u>Comments</u>
F.44	Unknown	Refuse pit.
F.45	190 L10, L20	Refuse pit.
F.46	190 L10, L20	Refuse pit.
F.47	170 L20	Refuse pit.
F.48	110 R30	Trench corner, possibly structure over F.12, possible French well.
F.49	60 L50	North-south trench segment, possibly garden fence between F.90 and F.82.
F.50	30 and 40 L70	North-south trench segment.
F.51	Fig. 6	Commanding Officer's house (see Part I).
F.52	90 L10	Refuse pit.
F.53	90 L10	Refuse pit.
F.54	140 L10	Possible wall between F.3 and F.16
F.55	60 L110	Stockade walls, probably F.81.
F.56	Unknown	
F.57	Fig. 6	Commanding Officer's house (see Part I).
F.58	40 L70	North-south series of small posts, probably recent fence.
F.59	Unknown	Small pit which cuts through F.5.
F.60	Fig. 6	French guardhouse (see Part I).
F.61	Fig. 6	Blacksmith's shop (see Part I).
F.62	Fig. 6	Church area (see Part I).
F.63	Unknown	
F.64	170 L120	Rock pit, after 1750.
F.65	Unknown	
F.66	Fig. 6	Blockhouse (see Part I).

<u>Feature</u>	<u>Location</u>	<u>Comments</u>
F.67	Unknown	
F.68	Unknown	
F.69	Unknown	
F.70	130 - 140 L50 - L60	Basement of F.25
F.71	130 L60	Refuse pit.
F.72	120 L60	Refuse pit.
F.73	Unknown	
F.74	140 L60	Fireplace in F.25.
F.75	190 L60	Clay-lined pit.
F.76	Fig. 6	French house in rowhouse unit (see Part I).
F.77	Fig. 6	Brick kiln (see Part I).
F.78	90 L80	Fireplace of F.91 (part of F.90 rowhouse unit).
F.79	80 L90	Basement of F.91 (part of F.90 rowhouse unit).
F.80	70 L90	Refuse pit.
F.81	Fig. 6	First stockade expansion (see Part I).
F.82	Fig. 6	Second expansion stockade (see Part I).
F.83	80 L110	Basement in F.96 (see Part I).
F.84	110 L100	Rock-filled pit, possibly associated with F.93.
F.85	90 L100	Basement in F.91 (see Part I).
F.86	Unknown	
F.87	70 L130	Refuse pit.
F.88	Fig. 6	French well (see Part I).
F.89	Fig. 6	French house (see Part I).
F.90	Fig. 6	House of French rowhouse unit (F.90) (see Part I).

<u>Feature</u>	<u>Location</u>	<u>Comments</u>
F.91	Fig. 6	House of French rowhouse unit (F.90) (see Part I).
F.92	100 L60	North-south, east-west trench, possibly French house, aligned with F.37.
F.93	Fig. 6	French house (see Part I).
F.94	160 and 170 L60	Possibly French house, roughly aligned with F.31.
F.95	190 and 200 L70, 200 L60	North-south and east-west trenches, possibly French house, aligned with F.37.
F.96	Fig. 6	House of French rowhouse unit (F.90) described in Part I.
F.97	140 and 150 L70	Rock pile.
F.98	Unknown	
F.99	170 L70	Refuse pit.
F.100	160 L70	Refuse pit.
F.101	60 L80	Refuse pit.
F.102	70 L120	Refuse pit.
F.103	50 L70	Refuse pit.
F.104	60 L120	Refuse pit.
F.105	50 L80	Refuse pit.
F.106	70 L150	Refuse pit.
F.107	70 L140	Refuse pit.
F.108	60 L140	Refuse pit.
F.109	110 L100	Refuse pit.
F.110	Area of F.90 (96, 91)	Possibly structure which overlies F.90 and part of F.96.
F.111	Area of F.90 (96, 91)	Possibly structure which overlies F.96 and part of F.91.

<u>Feature</u>	<u>Location</u>	<u>Comments</u>
F.112	210 L40	Refuse pit.
F.113	200 L60	Refuse pit.
F.114	210 L40	Refuse pit.
F.115	West of F.90	Western continuation of F.90.
F.116	70 L110	Refuse pit.
F.117	110 L100	Refuse pit.
F.118	130 and 140 L100	Basement of F.60 (see Part I).
NOTE: Feature numbers 119 through 200 were originally unassigned. Feature numbers 119 through 161 have subsequently been applied to new features.		
F.119	110 L120	Refuse pit.
F.120	160 L158	British zone (F.296) in Priest's house area.
F.121	70 L120	West, north-south trench, possible garden fence north of F.90.
F.122	220 L60	East-west trench, probably north wall of F.202.
F.123	150 L60	Clay-brick feature in F.77.
F.124	90 110	Clay apron, west side of Commanding Officer's house.
F.125	100 L80 and L90	East-west trench.
F.126	110 L120	Refuse pit.
F.127	40 L110	British zone in area of F.14.
F.128	110 L110	Northeast-southwest wall trench, in F. 93.
F.129	190 L40	Clay apron, west side of F.3.
F.130	110 L20	Clay apron, northeast corner of F.3.
F.131	70 L110	North-south trench, possibly garden fence between F.90 and F.82.

<u>Feature</u>	<u>Location</u>	<u>Comments</u>
F.132	120 L120	North, east-west wall trench.
F.133	180 L120	Center, north-south wall trench, same as F.81.
F.134	70 L120	East, north-south trench, possible garden fence between F.90 and F.82.
F.135	300 L90	Refuse pit.
F.136	170 L70	East-west trench, part of F.94.
F.137	160 L60	Post hole, southeast corner of square.
F.138	110 L40	Clay apron, north side of F.3.
F.139	260 L90	South, east-west trench, also F.314 and F.317, garden fence south of F.220.
F.140	140 L55	Log floor associated with F.76.
F.141	80 L10	Clay apron, west side of Commanding Officer's house.
F.142	170 L30	Fireplace fill in south fireplace of F.3.
F.143	210 L60	East-west trench representing north wall of F.220.
F.144	250 L100	East, north-south trench, possible garden fence south of F.220.
F.145	70 L120	North-south trench segment in northeast section of the square.
F.146	230 L120	Probable fireplace debris associated with F.220.
F.147	220 L60	North-south trench, also F.202, west wall of F.202.
F.148	280 L80	Pink-clay area.
F.149	100 L80	East-west trench, also F.125.
F.150	70 L20	North-south wall trench in northwest corner of square, possibly garden fence north of F.90.



<u>Feature</u>	<u>Location</u>	<u>Comments</u>
F.151	280 L90	Shallow pit, northeast corner of square.
F.152	130 L50	Pit, part of F.70, associated with F.25.
F.153	80 C	West fireplace, Commanding Officer's house, F.57.
F.154	215 L90	East-west wall trench, north side of F.220.
F.155	70 L130	North-south trench, represents part of bastion feature of F.81.
F.156	120 L20	Clay apron, east side of F.3.
F.157	40 L30 and L40	Basement of F.22.
F.158	250 L30	East-west trench.
F.159	110 L50	East-west trench.
F.160	100 L120	North-south trench, west wall of F.93.
F.161	200 L150	Refuse pit.
NOTE: Feature numbers 162 through 200 have not been assigned.		
F.201	Unknown	
F.202	Fig. 6	Possible British guardhouse (see Part I).
F.203	Unknown	
F.204	230 L40	Possible fireplace associated with F.202.
F.205	Unknown	
F.206	220 L30	Possible basement associated with as yet unexcavated house at the east end of F.220.
F.207	220 L30	North-south and east-west trench segment, possibly associated with F.206.
F.208	230 L80	Fireplace in F.220.
F.209	230 L80 and L90	Basement in F.220.
F.210	230 L90	Basement in F.220.

<u>Feature</u>	<u>Location</u>	<u>Comments</u>
F.211	Unknown	Basement in F.220.
F.212	230 L110	Basement in F.220.
F.213	230 and 240 L130	Basement in F.220.
F.214	230 L140	Possible fireplace in F.220.
F.215	230 L150	Basement in F.220.
F.216	240 L110	Refuse pit.
F.217	220 L40	Rock foundation, northeast corner of F.202.
F.218	Unknown	
F.219	230 and 240 L110	Possible basement.
F.220	Fig. 6	French rowhouse (see Part I).
F.221	230 L120	Possible fireplace of F.220, associated with F.146.
F.222	Unknown	
F.223	230 L110	North-south trench, west wall of F.5.
F.224	230 L40	North-south trench.
F.225	230 L50	Center, north-south trench.
F.226	230 L50	West, north-south trench.
F.227	230 L60	Refuse pit.
F.228	250 L60	Basement or privy at southwest corner of F.202.
F.229	250 and 260 L60	Disturbed pit.
F.230	250 L70	Refuse pit.
F.231	240 L50	Basement or privy on inside south wall of F.202.

<u>Feature</u>	<u>Location</u>	<u>Comments</u>
F.232	260 L40	Refuse pit.
F.233	260 L80	East-west wall trench, same as F.314, F.139, and F.317, represents east-west fence south of F.220.
F.234	250 L120	Basement.
F.235	250 L140 and L150	East-west trench.
F.236	250 L50	Refuse pit.
F.237	250 L120	North-south trench.
F.238	Unknown	
F.239	240 L50	North-south, east-west trenches, structure over F.231.
F.240	250 L80	Refuse pit.
F.241	250 L90	East-west trench, possible south wall of F.5.
F.242	250 L100	North-south trench, joins F.241.
F.243	250 L100	Center north-south wall trench.
F.244	Unknown	
F.245	240 L130	Floor boards, associated with F.220.
F.246	240 L140	Floor boards, associated with F.220.
F.247	240 L40 and L50	South wall of F.202.
F.248	230 L60	Refuse pit.
F.249	250 L140 and L150	Basement.
F.250	260 L90	Refuse pit.
F.251	260 L90 and L100	East-west trench, same as F.311
F.252	280 L60	Fireplace in F.266.
F.253	270 L40	Soil discoloration representing north wall of F.266.

<u>Feature</u>	<u>Location</u>	<u>Comments</u>
F.254	240 L30	Refuse pit.
F.255	250 L50	Rectangular-shaped rock pile.
F.256	250 L140	North-south trench, same as F.82.
F.257	250 L50	Indian firepit.
F.258	Unknown	
F.258A	310 L50	Upright log and pit.
F.259	250 L30	Refuse pit.
F.259A	310 L40	East-west trench, same as F.259C.
F.259B	310 L40	East extension of F.262A, log support.
F.259C	310 L40 and L50	East-west trench, same as F.273, may represent south wall of either F.5 or F.81.
F.260	240 L60	Rock pile.
F.260A	310 L50	Charcoal concentration.
F.261	250 L120	Refuse pit.
F.261A	310 L50	Refuse pit.
F.262	280 L90 and L100	Basement in F.266.
F.262A	310 L40	Log-support pit.
F.263	Unknown	
F.263A	310 L40	External fill around F.263C.
F.263B	310 L40	Wall-collapse fill from east side of F.263C.
F.263C	310 L40	Basement.
F.264	Unknown	
F.264A	310 L50	Refuse pit.
F.265	270 and 280, L40 and L50	Basement in F.266.

<u>Feature</u>	<u>Location</u>	<u>Comments</u>
F.265A	310 L80	Small concentration of charcoal, clay, and burned corn.
F.266	Fig.	French rowhouse unit (see Part I).
F.266A	310 L40	Refuse pit.
F.267	290 L70 and L80	Basement in F.266.
F.267A	320 L80	Charcoal concentration in F.278.
F.268	Unknown	
F.268A	310 L80	Refuse pit.
F.269	(?)	Supposed structure with corners in 260L60, and 260L100, 290L60 and 290L100.
F.269A	320 L80	Possible fireplace.
F.270	310 L50	Charcoal concentration, north side of F.258A.
F.271	320 L40 to 320 L80	East-west trench, also F.278.
F.272	310 L70	Refuse pit.
F.273	310 L70 to 310 L110	East-west trench, same as F.259C.
F.274	310 L40 and L50	Refuse pit.
F.275	320 L40	Refuse pit.
F.276	320 L70	Refuse pit.
F.277	320 L70 to 320 L90	East-west trench, same as F.288.
F.278	320 L70 and L80	East-west trench, same as F.271.
F.279	310 L80	Refuse pit.
F.280	320 L80	Refuse pit, associated with F.269A.
F.281	300 to 330 L100	North-south trench, probable garden fence extending south of F.266.
F.282	310 L100	Refuse pit.

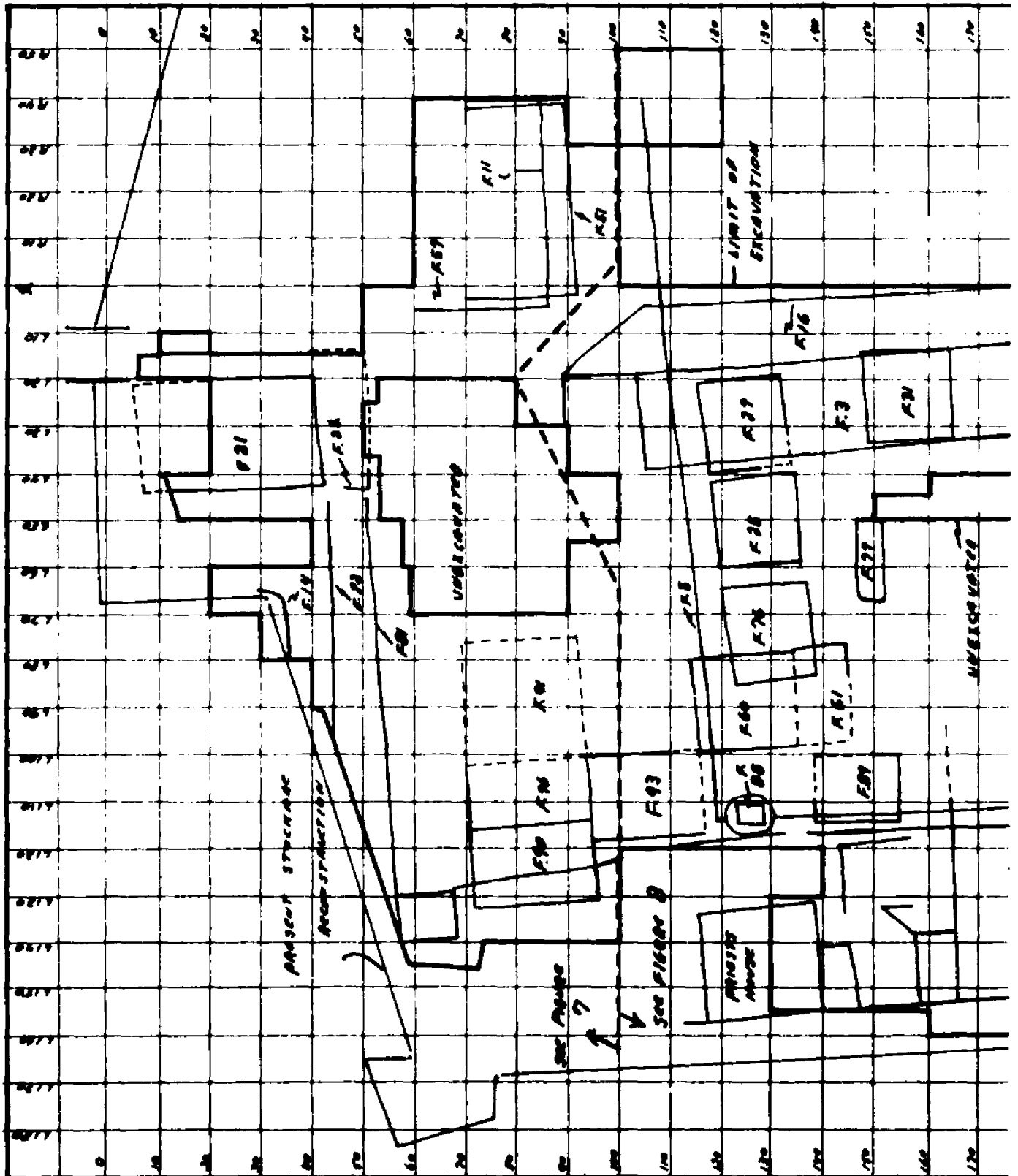
<u>Feature</u>	<u>Location</u>	<u>Comments</u>
F.283	310 L00	Refuse pit.
F.284	310 L90	Refuse pit.
F.285	310 L100	Refuse pit.
F.286	310 L100	Clay and charcoal pit.
F.287	310 L90	Refuse pit.
F.288	310 L40 and L50	East-west wall trench, same as F.277.
F.289	300 L110	Refuse pit.
F.290	290 L110	Clay pit.
F.291	290 L110	Charcoal concentration.
F.292	270 L110	Charcoal concentration.
F.293	250 to 310 L110	North-south trench, representing west wall of either F.5 or F.81.
F.293A	280 L110	Clay concentration in F.263C.
F.294	280 L110	East-west trench, probable north wall of F.266.
F.295	320 L90	Clay pilaster.
F.296	260 L130 260 L140 270 L130 270 L140 280 L120 290 L120 310 L110 320 L100 320 L110 330 L110	"British Zone," consists of a dark brown late British period refuse strata, probably garden areas south of F.220 and F.266 row-house units.
F.297	290 and 300 L110	Basement in F. 266.
F.298	330 and 340 L40	Fireplace, associated with unexcavated building on the west side of the land gate.
F.299	320 L100	Basement.

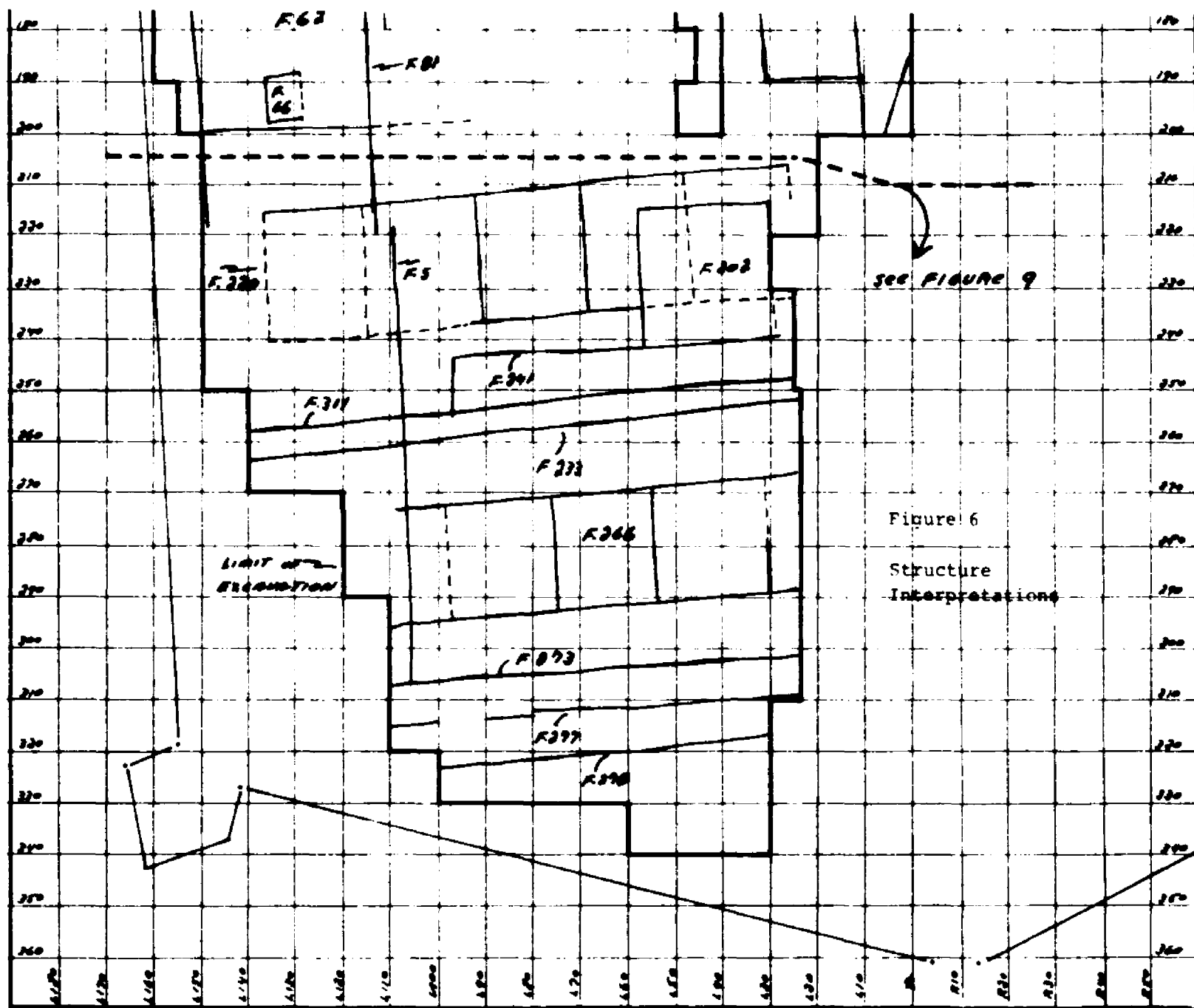
<u>Feature</u>	<u>Location</u>	<u>Comments</u>
F. 300	330 L50	Rock-filled pit.
F. 301	320 L100	Refuse pit.
F. 302	330 L40	Log-support pit for fireplace F.298.
F. 303	320 L100 and L110	East-west trench.
F. 304	270 L110	East-west trench.
F. 305	340 L40 and L50	Semi-circular trench associated with F.298.
F. 306	320 L110	Refuse pit.
F. 307	340 L40	Log support pit for fireplace F.298.
F. 308	330 L100	Refuse pit.
F. 309	330 L90	Refuse pit.
F. 310	260 L110	Basement.
F. 311	260 L110	East-west trench, same as F.251.
F. 312	160 L130	Wood concentration.
F. 313	150 L160	Clay pilasters.
F. 314	270 L130	East-west trench, same as F.139 and F.233.
F. 315	270 L30	East-west trench, north wall of F.266.
F. 316	160 L150	Refuse pit.
F. 317	260 L30	East-west trench, same as F.314, represents garden fence south of F.220.
F. 318	160 L150	Charcoal-stained area.
F. 319	160 L150	Burial
F. 320	160 L140 and L150	East-west trench segments, probably represent doorway to porch-like structure attached to the northwest corner of the church.
F. 321	260 L120	Refuse pit.

<u>Feature</u>	<u>Location</u>	<u>Comments</u>
F.322	270 L120	East-west trench, same as F.304.
F.323	Unknown	
F.324	160 L156	Clay pilaster.
F.325	160 L156	British zone in Priest's house area.
F.326	160 L140	Upright post pit.
F.327	160 L140	Refuse pit.
F.328	160 L130	Refuse pit.
F.329	160 L130	Charcoal and clay concentration.
F.330	160 L130	North-south and east-west trenches.
F.331	160 L140	Refuse pit.
F.332	160 L130 to 160 L160	East-west trench.
F.333	160 L158	Rectangular, wooden box.
F.334	160 L158	Refuse pit.
F.335	160 L158	Rectangular, wooden box.
F.336	160 L158	Charcoal and seed concentration.
F.337	160 L130	Tree stump.
F.338	160 L158	Barrel feature.
F.339	160 L150	Refuse pit.
F.340	150 L158	Part of pilaster F.324.
F.341	260 L140	Refuse pit.
F.341A	150 L130	Soil discoloration.
F.342	150 L150	Charcoal and ash concentration.
F.343	Unknown	
F.344	140 L150	Brick and stone concentration.

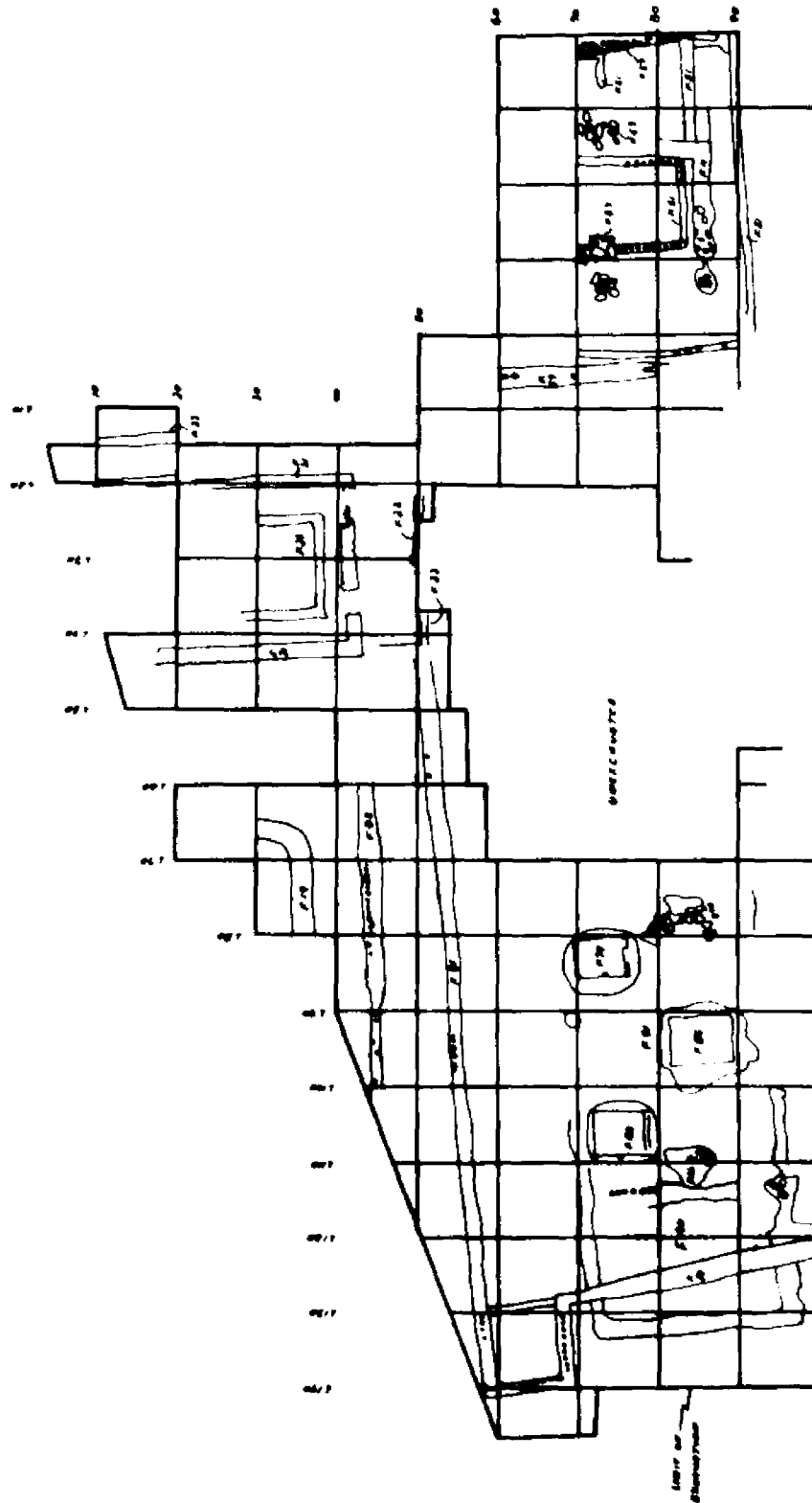


<u>Feature</u>	<u>Location</u>	<u>Comments</u>
F. 345	260 L130	Refuse pit.
F. 346	260 L130	Refuse pit.
F. 347	260 and 270 L130	Indian refuse deposit.
F. 348	290 L120	Fireplace in F.266.
F. 349	280 L120	Disturbed pit.
F. 350	260 and 270 L130	North-south trench.
F. 351	290 L30	East-west trench, defines south wall of F.266.
F. 352	290 L40 and 300 and 310 L30	North-south trench, represents north-south trench in F.266, and garden fence south of F.266.
F. 353	170 L160	North-south trench segment.
F. 354	150 L150 and L160	North-south and east-west trench.
F. 355	150 L160	East-west trench, same as F.254.
F. 356	150 L130 and L140	East-west trench.
F. 357	150 L140	Refuse pit.
F. 358	130 and 140 L140	Lower cellar, northeast corner of Priest's house.

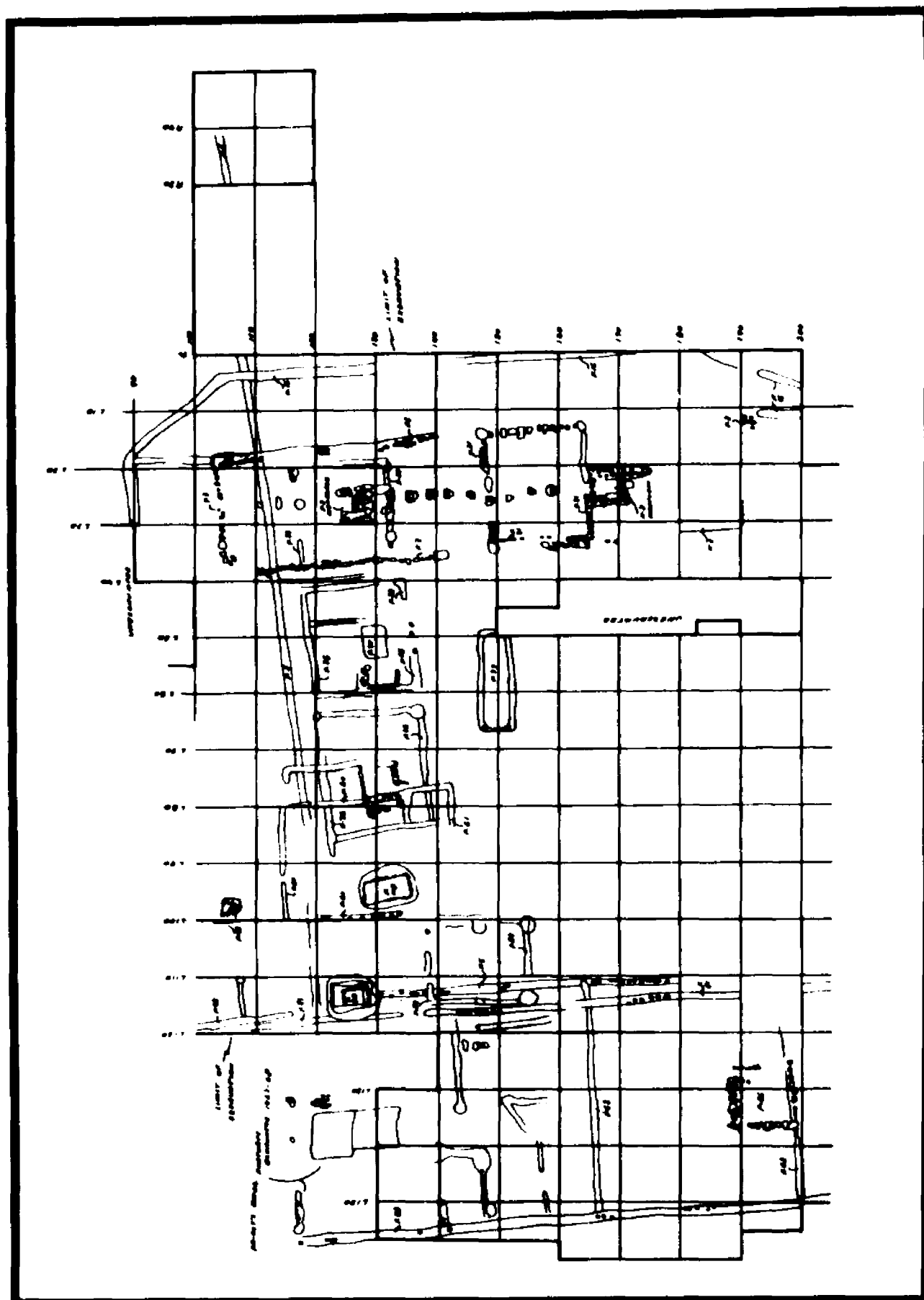




**Figure 7    Structural Evidence**

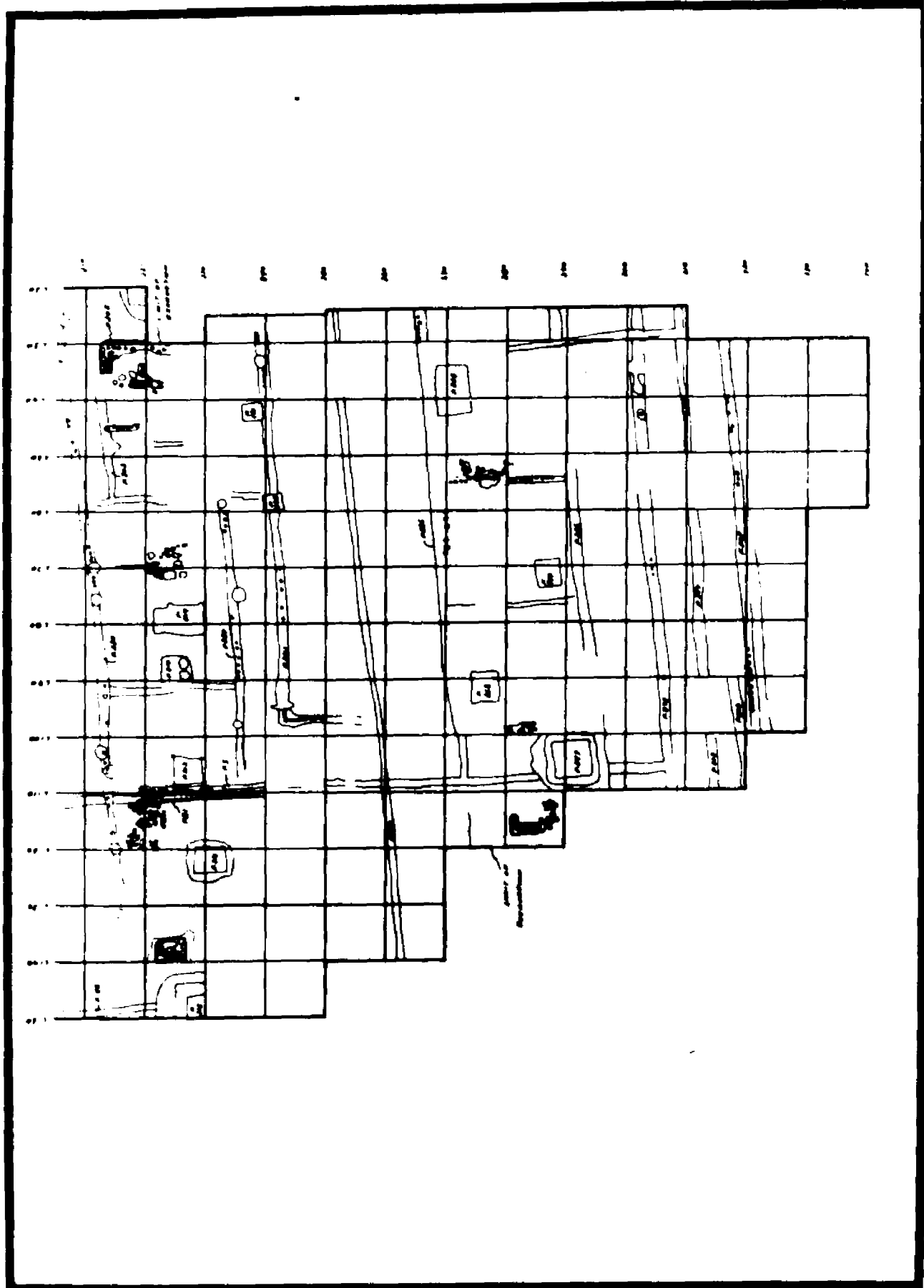


**Figure 8   Structural Evidence**



**Figure 9    Structural Evidence**





**APPENDIX B:**  
**ARTIFACT DESCRIPTIONS**

## Introduction

The artifacts recovered at Fort Michilimackinac during the 1959 through 1966 excavations are divided into two parts for descriptive purposes. Part I includes artifact categories which have the greatest value for site interpretation; Part II includes categories of lesser interpretative value. The descriptions of artifact categories listed in Part I of this appendix are based on the formal system of classification; interpretations are based on archaeological, comparative, and historical evidence. Categories included in Part II are either listed by frequency, or are listed, briefly described, and interpreted on the basis of archaeological evidence. This two-part division of artifact categories is based on a preliminary evaluation of each category in terms of its potential contribution to site interpretation. The selection of category priorities is based on several considerations, each of which is relevant in evaluating the interpretative potential of an artifact category and in defining which artifact categories were to be formally described in Part I. These include:

1. Site Distribution--artifact categories which exhibit areal concentrations, significant feature associations, structural associations and/or contrasting distributional patterns between formal divisions are formally described. Several artifact categories listed in Part II exhibit one or more of these

traits but could not be readily interpreted. These observations are, however, included when applicable to specific Part II artifact categories.

2. Comparative Evidence--artifact categories which either are significant for the interpretation of other historic sites, or which are present in high frequencies on other sites are formally described.
3. Historical Evidence--artifact categories which can be accurately dated or assigned a nationality of use and/or manufacture on the basis of historical documentation are formally described.
4. Frequency of Occurrence--it is assumed that artifact categories of greater frequency have a greater potential for the definition of temporal and spatial differences at the site. Also, the selection of high frequency artifact categories increases the comparative value of categories formally described, since the probability that they occur on similar sites is greater.

The following two considerations have been secondary in selecting categories to be formally described.

5. Artifact Category Representation of Context of Utilization--one or several artifact categories representative of each context of utilization (that is, structural, household, personal, and craft or activity) are formally described in order to provide a formally valid cross section of functional activities or

tasks represented at the site. Artifact categories assigned to each context of utilization are listed below.

6. Applicability to Illustrating and Evaluating the Formal Approach to Classification--it has been necessary to select numerically large and formally complex artifact categories in order to illustrate the mechanics of formal classification as well as to assess the comparative and analytic qualities of formal classification.

The descriptions of artifact categories in Parts I and II are arranged according to the following contextual format.

#### PERSONAL CONTEXT OF UTILIZATION

##### Clothing and Clothing Accoutrements

Textiles	Part II
Buttons	I
Hooks and Eyes	II
Buckles	I
Shoe Heel Plates	II
Ice Creepers	II
Cuff Links	I
Ice Skate	II

##### Adornment

Beads	Part I
Tinkling Cones	I
Hawk Bells	II
Religious Medallions and Crucifixes	II
Rings	I
Jewelry	II
--Bracelets	
--Earrings	
--Pendants	
--Brooches	
--Chain	
--Hat Pin	

--Spacers  
--Bangles

### Grooming

Comb	Part II
Hair Brush	II
Razor	II

### Activities

Recreation	Part II
--Chess Piece	II
--Cup and Pin	II
--Gaming Pieces	II
--Dice	II
--Whizzer	II
--Marbles	II
--Kaolin Pipes	I
--Jew's Harps	I
Writing	
--Lead Pencils	II
--Letter Seal	II

## HOUSEHOLD CONTEXT OF UTILIZATION

### Maintenance and Repair

Pins	Part II
Needles	II
Thimbles	II
Awls	I
Scissors	II

### Preparation and Consumption of Food

Kettle Hooks	Part II
Kettle Handles	II
Kettle Lugs	II
Kettles, Cast Iron	II
Porringer Handle	II
Plate, Pewter	II
Spigots	II
Ceramics, Non-European	II
Forks	I
Spoons	I
Ceramics (European)	I

Furnishings

Hasp Locks	Part II
Drawer-Pull Knobs	II
Drawer Handles	II
Hinges, Furniture	II
Tacks	II
Candle Holders	II
Candle Snuffer	II
Fire Tongs or "Smoker's Companion"	II

Storage

Barrel Hoops	Part II
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## STRUCTURAL CONTEXT OF UTILIZATION

Components

Bricks	Part I
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Structural Hardware and Parts

Nails	Part II
Hinges	II
Pintles	I
Screws	II
Bolts, Nuts, and Washers	II
Staples	II
Keys	II
Locks	II
Door, Gate, or Shutter Hooks	II
Door-Latch Hardware	II
Keyhold Plates	II

## CRAFT OR ACTIVITY CONTEXT OF UTILIZATION

Offense and Defense and/or Acquisition of  
Subsistence Resources

Knives	Part I
Traps	II
Projectile Points	II
Scythes	II
Harpoons	II
Fishhooks	I
Sword Parts	II
Gunflints	I

Special Skills and/or Crafts

## Woodworking Tools

--Files	Part II
--Saws	II
--Axes	II
--Planes	II
--Wedges	II
--Chisels	II
--Gouges	II
--Drill Bits	II
--Punches	II
--Gimlets	II
Other Tools	
--Hammer	II
--Vice	II

Measuring

Dividers	Part II
Weights	II
Compass	II
Clock Parts	II
Telescope	II

Commercial

Bale Seals	Part I
Coins	II

## MISCELLANEOUS OR GENERALIZED CONTEXT OF UTILIZATION

Rivets	Part II
Harness Buckles	II
Strike-a-Lites	II

The descriptions of categories in Part I include the following:

1. Introductory Statement--including a notation of artifact frequency; method of manufacture (included if not apparent from the descriptions or if different methods of manufacture have been used to distinguish formal divisions); information on



non-formal distinctions used to describe fragmentary specimens; the definition of descriptive and classificatory attributes and an explanation of their taxonomic arrangement; the description of attribute identification terminology; and, finally, an explanation of the descriptive format utilized, including the notation of what types of evidence are included in the descriptions and where they are located in this appendix.

2. Description--descriptions include the definitions of formal attributes; the notations of frequency, number of specimens measured, illustration references, measurements and/or the statistics computed; and the definition of additional non-classificatory descriptive properties. Cross-references are often noted between classificatory levels to point out important formal relationships. Comparative and site distributional evidence and interpretations are often presented in the descriptive context; this information is included as a part of the category conclusions in some cases.
3. Conclusions--conclusions include summary statements on formal diversity, comparative, historical, and distributional evidence, and the interpretation of specific formal artifact divisions in terms of date of use and significance for site interpretation. Conclusions also include the identification of formal variable significance and problems for future study.

Although artifact descriptions in this appendix are straightforward, a number of descriptive techniques and measures have been used which require explanation. These are:

1. Statistics--statistical measures applied in this report include Pearson's product moment correlation, or correlation coefficient ( $r$ ); standard deviation ( $s$ ); and arithmetic mean or average. The correlation coefficient is a measure of relationship or of co-variation between variables and is expressed on a scale between -1.0 and +1.0. A negative value indicates that there is a negative linear correlation between variables; this correlation increases in degree between zero and -1.0. A positive value indicates that there is a positive linear correlation between variables; this correlation increases in degree between zero and +1.0. This measure has been applied to the evaluation of the relationships between the length and width dimensions of gunflints. The standard deviation provides a measure of dispersion of values around the arithmetic mean computed from these values. The larger the standard deviation, the greater the dispersion of values about the mean. This measure has been used in a number of cases to emphasize the reliability of the mean and to facilitate the comparison of means between samples.
2. Historic Site Descriptions--Table 1 is provided to identify the dating, location, and source of reference of other archaeological sites referred to in this report.

3. Artifact Measurements--artifact measurements are either self-explanatory or are identified and explained in the descriptive text. Measurement summaries include the range and/or arithmetic mean. The mean has been computed for all samples containing more than six measurements. Individual measurements are presented when these number less than six. In certain cases a particular dimension could not be measured on all specimens; this absence, if confusing, is noted by a dash (-). The rationale for the definition of artifact size groups is included in the descriptive text of the applicable artifact category. All measurements are presented in millimeters unless otherwise noted. The abbreviation E signifies an estimated measurement.
  
4. Other Abbreviations--MS<sup>2</sup> identifies the site of Fort Michilimackinac. MS<sup>2</sup> 1 refers to non-provenience artifacts. The designations C, S, T, V, G, and Cat. are abbreviations for Class, Series, Type, Variety, Group, and Category respectively; F. is the abbreviation used for Feature. A dash (-) is used to designate unidentifiable portions of letters (which may appear as names) or symbols which have been noted on marked specimens (see preceding section on Artifact Measurements). If a letter is present, but questionable, it is enclosed within parentheses ( ). The letters NNW, NW, SSW, and SW apply to the north-northwest (F. 90, F. 91, F. 96), northwest (F. 25, F. 27, F. 76), south-southwest (F. 220), and southwest (F. 266) row-house units respectively.

5. Figures--Photographs are provided of type specimens for each artifact category described in Part I. Line drawings supplement the illustrations of several categories. Each illustration is accompanied by a figure caption which indicates the artifact figure designation, taxonomic designation, and catalog number.
  
6. Classification--the term "Category" when applied to an artifact description indicates that that artifact or sample could not be completely formally classified. Category descriptions follow the description of artifacts to which they are most closely related on the basis of formal attributes. Occasionally, the "Discussions" (summary observations) are presented in the descriptive text. These normally summarize noted relationships between formal divisions.

TABLE 1 Comparative Historic Sites

Site	Dates	Source
Ada, Michigan	pre-1760, 1820-1850	Merrick 1958
Ahumada, Texas	1756-1771	Tunnell & Ambler 1967
Alachua, Florida	1750-1800	Goggin, et al. 1949
Alamo, Texas	1740-late 19th c.	Greer 1967
Ft. Albany, Ontario	1680-1715	Quimby 1966
Ft. Atkinson, Nebraska	1819-1827	Kivett 1959
Bell Site, Wisconsin	1680-1730	Wittry 1963
Big Tree, New York	ca. 1770	Hayes 1965
Birch Island, Ontario	1750-1800	Greenman 1951
Brewer, New York	1710-	Pratt 1961
Brunswick Town, No. Carolina	1726-1776	South 1964
Canawaugus, New York	ca. 1800	Hayes 1965
Corchaug, New York	1640-1660	Solecki 1950
Fatherland, Mississippi	1682-1730	Quimby 1942
Fish Hatchery, Louisiana	early 18th c.	Webb & Gregory 1965
Frederica, Georgia	1736-1748	Hamilton 1964
Gilbert Site, Texas	3rd 1/4 of 18th c.	Jelks 1967
Gros Gap, Michigan	1710-1760	Quimby 1963
Jamestown, Virginia	17th c.	Cotter & Hudson 1957 Cotter 1958
Kaskaskia, Illinois	1703-1763	Perino 1967
Kipp, North Dakota	1826-	Woolworth & Wood 1960

Table 1 (Cont.)

Site	Dates	Source
Lasanen, Michigan	1680-1705	Stone, n.d.
Lawton, Texas	1650-1805	Webb & Gregory 1965
Ligonier, Pennsylvania	1758-1766	Hagerty 1963 Klinger & Wilder 1967
Longlac, Ontario	1740-1921	Dawson 1969
Longest, Oklahoma	1760-1820	Blain 1967
Los Adaes, Louisiana	18th c.	Webb & Gregory 1965
Fortress of Louisbourg, Nova Scotia	1720-1760	Dunton 1968 Sutermeister 1968
Marlborough, Virginia	1726-1768	Watkins 1968, 1969
Orringh Tavern, New York	1790-1820	Hayes 1965
Ossossane, Ontario	1636	Quimby 1966
Pearson, Texas	1775-1830	Duffield & Jelks 1961
Pemaquid, Maine	1625-1775	Camp 1967
Pen, New York	1685-1696	Pratt, n.d.
Pensacola, Florida	1722-1752	Smith 1965
Perkins	early 18th c.	Pratt, n.d.
Philip Mound	1600-1700	Benson 1967
Portland Point, New Brunswick	1631-1645 1762-late 18th c.	Barka 1965
Posey, Oklahoma	1830-1840	Wyckoff & Barr 1968
Ft. Renville, Minnesota	1826-1846	Nystuen & Lindeman 1969
Rosewell, Virginia	1763-1772	Noël Hume 1962
Ft. Saint Joseph, Michigan	1700-1781	Quimby 1966; 1938
Sainte Marie I, Ontario	1639-1649	Quimby 1966

TABLE 1 (Cont.)

Site	Dates..	Source
Santa Rosa, Florida	1722-1752	Smith 1965
Shantok, Connecticut	1620-1750	Salwen 1966
Southern Compress, Louisiana	1714-1803	Webb & Gregory 1965
Spokane, Washington	1800-1826	Combes 1964
Strickler, Pennsylvania	1650-1675	Futer 1959
Ft. Ticonderoga, New York	18th c.	Calver & Bolten 1950 Campbell 1959 Hagerty 1963
Tutters Neck, Virginia	1701-1710, 1730-1740	Noël Hume 1966
Valley Forge, Pennsylvania		Klinger & Wilder 1967
Whitney, New York	1710-1745	Pratt 1961
Wilkinson, Louisiana	1803-1820	Webb & Gregory 1965
Womack, Texas	1700-1730	Wittry 1963
Woods Island, Alabama	1650-1715	Morrell 1965

**APPENDIX B, PART I:**  
**FORMAL ARTIFACT DESCRIPTIONS**



## BUTTONS

A large and formally complex sample of buttons was recovered at Fort Michilimackinac; a total of 188 formal button categories are defined from a sample of 1302 specimens.

### Classification and Description:

The following attributes were recognized in the description of buttons:

1. Structure, defined by the number and combination of button parts or elements. Button elements are the crown (or button face), back (or reverse face), eye (metal loop for attachment), and filler (clay or other material between crown and back). The crown and back may be two separate, but joined, elements, or the obverse and reverse faces respectively of a single piece of metal. The distinguishing terminology is maintained in either case.
2. Method of manufacture, such as casting, soldering, brazing, crimping, lathe turning, and so on.
3. Material of button element composition.
4. Shape of button and button elements.
5. Decoration, defined as crown design, or the presence of metallic plate, such as gold (gilt) or silver.
6. Size refers to button diameter.

Four levels of taxonomic distinction are based on these attributes:

1. Class--distinguished by differences in structure.
2. Series--defined by differences in method of manufacture.
3. Type--defined by combinations of material and shape attributes.
4. Variety--defined by combinations of design and minor shape attributes.

These distinctions apply primarily to the formal classification of complete specimens. A second, less formal, classification has been devised to include individual button elements such as crowns and by-products of button manufacture. Similar taxonomic distinctions are made for the crown element classification, although they are less rigorously applied.

Button descriptions are presented according to the formal classification defined above. Each button category is described briefly by noting its major diagnostic features; detailed verbal descriptions have been avoided since most specimens are illustrated. Photographs are presented of the crown faces of nearly all categories; cross section and button back perspective line drawings are presented of selected types to illustrate important attributes. Information on button diameter and size groupings is included in the individual category descriptions and is summarized in Table 7. Comparative evidence and information on site distribution and feature associations

are presented only where applicable to the interpretation of specific button categories. Information on feature associations is summarized in Table 10 . Many buttons are described only, and no interpretation is suggested due to the limited distributional and comparative evidence available at present.

Class I Crown-Back Element, and Eye Element

Series A Elements Cast Together

Type 1 Pewter, flat to convex crown, flat back

Type 1 varieties are distinguished by eye shape (eye joins back directly or is mounted on a "neck" which joins the back) and decoration.

Variety a Flat crown with sharp beveled edge; eye mounted on neck, mold seam across back and eye.

Figure 10 A  
30 specimens  
Dimensions (30 specimens): 2 sizes; (1) 15.0-17.0,  
(2) 21.5-22.5.

Variety b Flat crown with slightly rounded edge; eye mounted on neck; mold seam across back and eye.

Figure 10 B  
9 specimens  
Dimensions (9 specimens): 2 sizes; (1) 16.0-17.5,  
(2) 21.0-23.0.

Variety c Slightly convex crown with rounded edges; eye mounted on back; mold seam across back and eye.

Not illustrated  
3 specimens  
Dimensions (2 specimens): 16.0, 14.5.

Variety d Flat crown with basket-weave-like design; eye mounted on back, mold seam across back and eye; parallel striations on back.

Figure 10 C  
1 specimen  
Dimensions (1 specimen): 14.6.

Variety e Flat crown with basket-weave-like design; eye mounted on neck, mold seam across back and eye.

Figure 10 D  
1 specimen  
Dimensions (1 specimen): 17.3.

Variety f Flat crown with slightly raised, rounded edge; eye mounted on back; mold seam across back and eye.

Figure 10 E  
1 specimen  
Dimensions (1 specimen): 17.4.

Variety g Flat crown with rounded edge; eye mounted on back; mold seam across back and eye.

Figure 10 F  
1 specimen  
Dimensions (1 specimen): 15.3.

Variety h Slightly convex crown; eye mounted on neck; mold seam across back and eye.

Figure 10 G  
4 specimens  
Dimensions (3 specimens): 13.6, 14.4, 15.6.

Variety i Slightly convex crown with raised number 60; eye mounted on neck; mold seam across back and eye.

Figure 10 H  
1 specimen  
Dimensions (1 specimen): 17.0.

See discussion of CI, SD, T1, Vg.

Variety j Flat crown; beveled back; eye mounted on back; mold seam across back.

Figure 10 I  
1 specimen  
Dimensions (1 specimen): 15.6.

Discussion: Class I, Series A, Type 1

Four of the 7 specimens recovered from features (Table 10 ) were found in association with basements in the SSW rowhouse unit. The presence of CI, SA, T1 specimens in this structure (dated ca. 1740-1780) and their absence in both early French and British military structures indicate that they were in use at the fort between approximately 1740-1745 and 1780 and that they may have been used by civilian rather than military personnel (except for CI, SA, T1, Vi). Olsen (1963: 552) suggests a date range of between 1750 and 1812 for similar types. The single CI, SA, T1, Vi specimen identifies the British Sixteenth Regiment which was stationed at the fort between 1761 and 1772. Olsen (1963: 552) notes however that numbered regimental buttons did not appear until 1767. CI, SA, T1, Vi thus may be closely dated between 1767 and 1772; its presence in F. 296, a late British period garden refuse deposit, supports this dating.

Series B Elements Cast Together, Drilled Eye

The eyehole on Series B specimens was drilled after casting. Casting evidence has been removed on all specimens. Series B, Types 1, 2, and 3 buttoneyes are wedge-shaped and taper on all sides. Series B, Types 4 and 5 button eyes are round.

Type 1 Brass, crown-edge lip

Variety a Flat crown with raised floral design, gilt, and edge lip; flat back.

Figure 10 J

2 specimens

Dimensions (2 specimens): 17.6, 20.7.

Type 2 Brass, flat crown and back

Variety a Plain, flat crown.

Figure 10 K

1 specimen

Dimensions (1 specimen): 22.8.

Variety b Flat crown with pinwheel design in relief.

Figure 10 L

1 specimen

Dimensions (1 specimen): 23.7.

Discussion: Class I, Series B, Type 2

These buttons are similar to those described by Olsen (1963: 552) as dating between 1700 and 1765.

Type 3 Brass, flat crown with raised brass and iron decoration, flat back

All Type 3 specimens exhibit small, raised, cup-like decorative elements on the crown face. These cups are filled with an iron substance as a decorative addition.

Variety a Flat crown with raised floral decoration; 6 drilled holes between raised designs.

Figure 10 M

1 specimen

Dimensions (1 specimen): 18.4.

Varieties b through j

These varieties may be described in a tabular format since they differ only in size and decorative style (see Table 2 ).

TABLE 2 Button Description: Class I, Series B, Type 3, Varieties b through j

Taxonomic Designation	Figure Designation	Frequency	Size	Crown Decoration
CI, SB, T3, Vb	10 N	1	25.7	7 raised designs on floral background, irregular crown edge
Vc	10 O	1	25.0	7 raised designs on floral background
Vd	10 P	2	17.7 17.8	5 raised designs around crown border, center star
Ve	10 Q	1	17.0	4 raised designs, center star
Vf	10 R	1	17.1	4 raised designs, center star
Vg	11 A	1	17.6	5 raised designs, center star, possible fleur-de-lis
Vh	11 B	1	17.3	4 raised designs
Vi	11 C	1	17.2	4 raised designs
Vj	11 D	1	17.2	4 raised designs on floral background

Discussion: Class I, Series B, Type 3

Three CI, SB, T1 varieties were recovered from late British period features and are tentatively assigned to the British period (1761-1781) on this basis.

Type 4 Brass, flat crown, round drilled eye

Variety a Raised pinwheel design on crown; iron substance in each design element.

Figure 11 E

1 specimen

Dimensions (1 specimen): 17.6.

Variety b Five raised designs on flat crown; designs separated by 5 drilled holes; irregular crown edge.

Figure 11 F

1 specimen

Dimensions (1 specimen): 17.3.

Type 5 White metal; round, drilled eye

Variety a Plain, flat crown.

1 specimen

Dimensions (1 specimen): 17.1.

Variety b Flat crown with impressed center star design.

Figure 11 H

1 specimen

Dimensions (1 specimen): 17.6.

Discussion: Class I, Series B, Type 5

South (1964: 118) has assigned a date of 1726 to 1776 to similar specimens (his Type 11) from Brunswick Town, North Carolina.

Series C Crown and Eye Cast Separately and Joined by BrazingType 1 Brass crown and eye

Variety a Plain convex crown with flat edge lip; concave back; U-shaped eye brazed to back.

Figure 11 I

78 specimens

Dimensions (78 specimens): 2 sizes; (1) 17.0-19.5;  
(2) 23.5-24.5.



South (1964: 118) has assigned a date of 1726 to 1776 to a similar type (his Type 10) from Brunswick Town, North Carolina. Campbell (1959) has examined CI, SC, Tl, Va specimens from both Fort Michilimackinac and Fort Ticonderoga and concludes that they represent French uniform buttons from ca. 1750. The latter date is supported by distributional evidence at Fort Michilimackinac. CI, SC, Tl, Va specimens do not occur at the site in British military contexts and rarely occur north of the 100 grid line or south of the 280 grid line. Specific structural associations within these limits are the SW rowhouse unit and the area between this unit and the SSW rowhouse unit, and, the north-west corner of the earliest French stockade (F. 5). CI, SC, Tl, Va specimens have not been found in either the NNW or the SSW rowhouse units. An approximate date of between 1730 and 1760 may be assigned CI, SC, Tl, Va buttons on the basis of this evidence.

#### Series D Crown-Back Element Cast Around Eye

##### Type 1 Pewter crown-back, iron eye

All CI, SD, Tl specimens exhibit a mold seam and plug and a casting spur on the back face

Variety a Convex crown with impressed Ks 8 design and beaded border; concave back.

Figure 11 J

228 specimens

Dimensions (143 specimens): 2 sizes; (1) 23.5-24.5;  
(2) 18.0-19.0.

This button variety was worn by the British, King's Eighth Regiment which served at Fort Michilimackinac between 1774 and 1781. CI, SD, Tl, Va buttons were found in 3 major areas at the site: (1) south of the 240 grid line, including the SSW rowhouse unit and the garden areas north and south of this unit; (2) in the British soldiers barracks (F. 3); and (3) within the NNW rowhouse unit. Important areas of low frequency are the NW and SW rowhouse units. The SW rowhouse unit was in use during the period of British control (1761-1781) although, apparently, not by British soldiers. Table 10 indicates specific structural features within which CI, SD, Tl, Va specimens were found. The majority of these features are late British period in association. A date range of between 1770 and 1781 is suggested by the archaeological evidence; a more accurate date of 1774 to 1781 is indicated by the historical evidence.

Variety b Nearly flat crown and back with impressed Ks 8 design on crown.

Figure 11 K  
1 specimen  
Dimensions (1 specimen): 15.0.

This specimen lacks the beaded-crown border characteristic of CI, SD, Tl, Va.

Variety c Nearly flat crown and back with raised Ks 8 design on crown and decorated crown border.

Figure 11 L  
1 specimen  
Dimensions (1 specimen): 14.3.

This specimen differs from CI, SD, Tl, Va in the style of crown-border decoration and in the raised Ks 8 design.

Variety d Slightly convex crown with impressed 10 design, slightly concave back.

Figure 11 M-N  
42 specimens  
Dimensions (42 specimens): 2 sizes; (1) 17.5-18.5;  
(2) 24.0-25.0.

This button variety was worn by the British Tenth Regiment, which occupied the site between 1772 and 1774. CI, SD, Tl, Vd specimens were found in 1 major concentration in the area of the British soldier's barracks. CI, SD, Tl, Vd specimens do not occur either in the NW or the SW rowhouse units. CI, SD, Tl, Va buttons have a similar pattern of distribution.

Variety e Slightly convex crown with raised RI 18 design; raised rim on crown border; concave back.

Figure 11 O-P  
7 specimens  
Dimensions (7 specimens): 2 sizes; (1) 17.0-18.0;  
(2) 24.0-25.0.

The British Eighteenth Regiment (The Royal Irish) served in the Revolutionary war in 1777 (Calver and Bolten 1950: 107-108) but were never stationed at Fort Michilimackinac. The 7 specimens may have been lost at the site by members of this regiment who had been transferred to Fort Michilimackinac; however, there is no historical evidence to document such a transfer.

Variety f Slightly convex crown with impressed 29 and wreath-like border; concave back.

Figure 11 Q

1 specimen

Dimensions (1 specimen): 18.2.

The British Twenty-ninth Regiment was stationed at Louisbourg, Nova Scotia, and in the Virginias between 1746 and 1750; at Halifax, Nova Scotia, and in Boston between 1765 and 1773; and in eastern Canada from 1776 until 1787.

Variety g Slightly convex crown with raised 60 and beaded border; slightly concave back.

Figure 11 R

9 specimens

Dimensions (9 specimens): 2 sizes; (1) 17.0-18.0;  
(2) 23.0-24.0.

The British Sixtieth Regiment was stationed at Fort Michilimackinac between 1761 and 1772 (see discussion of CI, SA, T1 in reference to Sixtieth Regimental buttons).

Variety h Plain; slightly convex crown; slightly concave back.

Figure 12 A

6 specimens

Dimensions (5 specimens): Diameter range, 16.5-32.1.

These specimens appear to date within the British period on the basis of feature associations (Table ).  
Olsen (1963: 552) dates this variety between 1760 and 1790.

Variety i Slightly convex crown with impressed 7 design and wreath-like border; slightly concave back.

Figure 12 B

1 specimen

Dimensions (1 specimen): 24.0.

The British Seventh Regiment served in eastern Canada between 1773 and 1783.

Variety j Slightly convex crown with raised central crown design and raised wreath of roses and thistles around border; slightly concave back.

Figure 12 C

1 specimen

Dimensions (1 specimen): 16.6.

This specimen identifies the Royal Highland Emigrant Corps which served in the east between 1775 and 1779 (Campbell 1959; Calver and Bolton 1950: 130-133).

Type 2 Pewter crown-back, brass or copper eye

Variety a Plain, flat crown; flat back.

Figure 12 D

5 specimens

Dimensions (4 specimens): 16.9, 17.4, 15.5, 18.3.

Type 3 Brass crown-back, iron eye

Variety a Plain, flat crown; flat back with circular striations.

Figure 12 E

3 specimens

Dimensions (3 specimens): 19.7, 16.0, 16.0.

Variety b Plain, convex crown with narrow, flat border rim; concave back.

Figure 12 F

2 specimens

Dimensions (2 specimens): 30.4, 25.9.

Iron rust within the casting spur is the only evidence that these specimens possessed iron eyes.

Type 4 Brass crown, brass or copper eye

Type 4 varieties are described in a tabular format (see Table 3 ). An interpretative discussion follows the descriptions. Casting spurs are present on all specimens; mold seams are absent on all specimens.

TABLE 3 Button Descriptions: Class I, Series D, Type 4, Varieties a through e

Taxonomic Designation	Figure Designation	Frequency	Size	Comments
CI, SD, T4, Va	12 G	17	2 sizes, 16.0-18.0; 22.0-24.0	Flat crown and back, circular striations on back
Vb	12 H	26	2 sizes, 17.5-18.5; 23.0-26.0	Slightly convex and concave crown and back respectively, silver plated brass
Vc	12 I	1	16.7	Flat crown with beveled edge, slightly concave back, silver plated brass
Vd	12 J	2	22.0, 22.3	Flat crown, very slightly concave back (not shown in illustration), back circular striations
Ve	12 K	2	26.0, 17.3	Flat crown and back, impressed zig-zag crown border design, silver plated brass

Discussion: CI, SD, T4

Distributional evidence indicates that CI, SD, T4 buttons are not associated with either early French structures or British military structures. The major area of concentration is within the SSW rowhouse unit and within the garden areas to the north and south of this unit. A civilian use and date range of between 1750 and 1780 is tentatively suggested by this evidence. Similar specimens have been found at other sites and have been dated as follows: Olsen (1963: 552) proposes a 1760-1785 date range; Noel Hume (1962: 194-195), describing the Rosewell excavations, assigns a 1750-1800 date range; South (1964: 117) describes a similar type (his Type 7) as dating within the period from 1726 until 1776.

Class II    Crown-Back Single Element But Separated by Hollow Space,  
                 Plus Eye

Series A    Crown-Back Cast as Single Unit Around Eye, Two Air  
                 Holes Through Back

Type 1    Pewter crown-back, iron eye

Variety a    Convex crown; slightly convex back; 2 holes  
                 in back.

Figure 12 L

249 specimens

Dimensions (125 specimens): 2 sizes, (1) 15.5-17.0;  
                 (2) 21.0-22.5.

CII, SA, T1, Va buttons occur frequently in the following areas: (1) within the SSW rowhouse unit and in the garden areas to the north and south of this unit; (2) within and in the general area of the British soldiers' barracks (F. 3); and (3) within the NNW rowhouse unit and in the garden areas north and south of this unit. CII, SA, T1, Va specimens are notably infrequent in the NW and SW rowhouse units and in the Church and Priest's house area. The SSW rowhouse unit association is very definite; 16 and 13 specimens respectively are located in basement features (F. 262 and F. 267). A basement in the NNW rowhouse unit (F. 85) yielded 4 specimens. The guard house basement (F. 118) yielded 2 specimens. This button variety appears to have been used by the British military between 1760 and 1780. As Campbell (1959) points out, however, CII, SA, T1, Va buttons were used by the British military prior to 1767-1768, or before the adoption of numbered regimental buttons. An extended period of use at Fort Michilimackinac is indicated by the noted British barracks (F. 3) association. This structure was not built until after 1769, as indicated by its absence on the Nordberg map of that date, and was not torn down until 1781.

Series B Crown and Back Cast Separately and Joined by Brazing,  
Eye Soldered to Back

**Type 1 Brass crown, back, and eye**

Variety a Plain, convex crown and back; wide strap-like eye.

**Figure 12 N**

**26 specimens**

Dimensions (26 specimens): 2 sizes, (1) 14.5-16.0;  
(2) 18.5-20.5.

CII, SB, Tl, Va specimens exhibit silver solder over the entire back face. Circumferential striations are noted on many crown faces. These specimens are not associated with major British military button types (CI, SD, Tl, Va or CII, SA, Tl, Va). A CII, SB, Tl, Va association with the SW rowhouse unit is noted. A date range of between 1740 and 1760 is suggested on the basis of this evidence.

Series C Crown and Back Cast Separately and Joined by Brazing,  
Eye Cast as Part of Back and Then Drilled

## Type 1 Brass

Variety a    Convex crown; slightly convex back; wedge-shaped eye.

**Figure 12 0**

4 specimens

Dimensions (4 specimens): 15.2, 20.0, 20.3, 14.7.

**Circumferential striations present on button backs.**

**Series D** Crown and Back Cast Separately and Joined by Brazing,  
Back Cast Around Eye, Two Air Holes Through Back

**Type 1      Brass**

**Variety a**    **Convex crown and back.**

**Figure 12 M-P**

12 specimens

**Dimensions (12 specimens):** 2 sizes, (1) 14.5-15.5;  
(2) 20.0-23.0.

See discussion of Class II, Series D, Type 1, and Type 2.

Type 2 Brass crown and eye, copper (?) backVariety a Convex crown and back.

Figure 12 Q

10 complete specimens, 26 backs

Dimensions (26 specimens): 2 sizes, (1) 16.0-17.5;  
(2) 21.5-22.5.Discussion: Class II, Series D, Types 1 and 2

Both types were combined on a distribution map for interpretive purposes. A high frequency of occurrence is noted within the NNW rowhouse unit. A secondary area of occurrence is the SSW rowhouse unit and the garden areas north and south of this unit. Absences are noted in the NW and SW rowhouse units, British military structures, and the Church and Priest's house area. This information suggests a civilian use between ca. 1760 and 1780 although Calver and Bolton (1950: 230) suggest that similar types were used by the French military. Feature contexts support the suggested date range of 1760 to 1780.

Series E Crown and Back Cast Separately and Joined by Brazing,  
Back Cast Around Eye, No Air Holes Through BackType 1 Brass back and eye, copper (?) crownVariety a Convex crown; slightly convex back; casting spur extends partially up the eye shaft; circumferential striations on back; dull, eroded crown surface.

Figure 13 A

19 specimens

Dimensions (17 specimens): 2 sizes, (1) 15.5-17.0;  
(2) 19.5-22.0.

These specimens are assigned a 1760-1780 date on the basis of distributional similarity to CII, SD, T1 and CII, SD, T2.

Type 2 Copper crown and brass back cast separately and joined by brazing, back cast around iron eye, circumferential striations on back faceVariety a Convex crown; slightly convex back.

Figure 13 B

6 specimens

Dimensions (6 specimens): possibly 2 sizes, (1) 14.0-15.5;  
(2) 19.5-20.5.



Type 3 Pewter crown and back cast separately and joined by brazing, back cast around iron eye, mold seam across back

Variety a Convex crown; nearly flat back.

Figure 13 C

2 specimens

Dimensions (2 specimens): 21.6, 21.4.

Type 4 Brass, crown and back cast separately and joined by brazing, back cast around eye

Variety a Convex crown and back.

Figure 13 D

1 specimen

Dimensions (1 specimen): 23.9.

Type 5 Brass crown and loop cast separately and brazed together, back cast around loop which is missing (iron or brass)

Variety a Slightly convex crown and back; raised geometric crown design.

Figure 13 E

1 specimen

Dimensions (1 specimen): 22.1.

### Class III Crown, Back, and Filler, Separate Elements

Series A Crown and Back Produced Separately and Crimped Together With Filler Between

The crown elements of Class III buttons were produced by striking a thin disk of metal in a mold which had been engraved with the desired decorations. Metal backs for Class III buttons were produced similarly; bone and wood backs were cut and drilled. A filler element was inserted between crown and back to make the finished button more solid and less easily damaged.

Type 1 Bone back, brass crown, back is cut bone with 4 drilled holes for attachment and a recessed rim to receive the crimped crown

Type 1 varieties are presented in a tabular format (Table 4 ). An interpretative discussion follows these descriptions. Refer to figures for information on crown decoration. All varieties exhibit slightly convex crowns and backs and appear to contain a clay filler element.

TABLE 4 Button Descriptions: Class III, Series A, Type 1, Varieties a through n

Taxonomic Designation	Figure Designation	Frequency	Size	Crown Decoration and Comments
CIII, SA, T1, Va	13 F	3	24.1, 15.9, 17.3	Plain.
Vb	13 G	1	16.2	Plain; probably same as CIII, SA, T1, Va; crown is slightly more convex.
Vc	13 H	3	16.1, 22.6, 16.1	Raised Ks 8 with basket-weave border; gilt.
Vd	13 I	1	16.6	Ks 8 symbol raised; gilt; letters HONI.SOIT. QUI.MAL.Y.Pense. around border.
Ve	13 J	1	17.6	Impressed floral design.
Vf	13 K	1	21.6	Raised herringbone design; gilt.
Vg	13 L-M	2	17.3, 16.3	Raised basket weave.
Vh	13 N	1	15.8	Raised basket weave; silverplated.
Vi	13 O	1	15.4	Raised geometric design.
Vj	13 P	1	21.7	Raised geometric and floral design.
Vk	13 Q	1	17.3	Raised floral design.
Vl	13 R	1	16.0	Raised floral design.
Vm	14 A	1	21.3	Raised geometric and floral design; silver plated.
Vn	14 B,C	1	23.7	Raised Tenth Regiment design; silver plated.

Discussion: Class III, Series A, Type 1

Varieties c, d, and m represent British officers' regimental buttons (see discussion of CI, SA, Tl, Va and CI, SA, Tl, Vd). Several of the remaining variety specimens were recovered from British feature contexts. South (1964: 115) notes that Variety a buttons (his Type 3) were a major type at Brunswick Town, North Carolina, and assigns a 1726-1776 period date to this type.

Type 2 Pewter crown, bone back, back is cut bone with 4 drilled holes for attachment, and a recessed rim to receive the crimped crown, clay filler element

Variety a Plain; slightly convex crown and back.

Figure 14 D  
1 specimen  
Dimensions (1 specimen): 17.4.

Type 3 Two-part copper (?) crown, composed of an inner solid disk and an outer perforated disk, bone back with 4 drilled holes and recessed rim, clay filler

Variety a Slightly convex crown and back; floral crown design.

Figure 14 E  
1 specimen  
Dimensions (1 specimen): 24.4.

Variety b Slightly convex crown and back; gilt; back with 4 drilled holes and recessed rim; clay filler; geometric crown design.

Figure 14 F  
1 specimen  
Dimensions (1 specimen): 15.6.

Type 4 Two-part copper (?) and brass crown, composed of a solid inner brass disk and a perforated outer copper disk, bone back with 4 drilled holes and beveled edge, clay filler

Variety a Convex crown and back; geometric crown design.

Figure 14 G  
1 specimen  
Dimensions (1 specimen): 22.9.

Type 5    Brass crown, wooden back with 4 holes for attachment  
             and recessed edge to receive crimped crown, clay  
             filler

Type 5 varieties are presented in a tabular format (Table 5 ).  
Refer to figures for information on decoration. All varieties  
have convex crowns and flat to slightly convex backs. An in-  
terpretative discussion follows the Table 5 descriptions.

TABLE 5 Button Descriptions: Class III, Series A, Type 5, Varieties a through o

Taxonomic Designation	Figure Designation	Frequency	Size	Crown Decoration and Comments
CIII, SA, T5, Va	14 H	2	21.4, 16.1	Silver plated; plain, convex crown.
Vb	14 I	1	17.1	Gilt; plain; nearly flat crown.
Vc	14 J	1	22.1	Convex crown; gilt.
Vd	14 K	2	21.3, 16.0	Convex crown with lip; gilt.
Ve	14 L	1	25.0	Raised basket weave design; silver plated; convex crown.
Vf	14 M	1	16.8	Raised basket weave design; convex crown.
Vg	14 N	1	21.8	Raised basket weave design; gilt; convex crown.
Vh	14 O	1	17.3	Raised geometric and floral design; convex crown.
Vi	14 P	1	18.3	Raised geometric and floral design; convex crown.
Vj	15 A	1	21.6	Raised floral design; convex crown.
Vk	15 B	1	21.8	Raised floral design; convex crown.
Vl	15 C	1	16.6	Raised floral design; convex crown.
Vm	15 D	1	15.8	Raised floral design; gilt; convex crown.
Vn	15 E	1	22.1	Raised center star and floral design; silverplated; convex.
Vo	15 F	1	20.0	Highly domed; convex crown; raised beaded design on crown border.

Discussion: Class III, Series A, Type 5

The small sample of wood back specimens described above cannot be interpreted on the basis of distributional or comparative evidence.

Type 6 Two-part brass crown, composed of an inner solid disk and an outer perforated disk, wooden back with 4 holes and recessed rim, clay filler

Variety a Slightly convex crown; convex back; floral design (compare with CIII, SA, T3, Va).

Figure 15 G

3 specimens

Dimensions (3 specimens): 15.6, 21.4, 16.2.

Variety b Flat crown with beveled edge; convex back.

Figure 15 H

1 specimen

Dimensions (1 specimen): 15.9.

Variety c Convex crown and back; gilt crown.

Figure 15 I

1 specimen

Dimensions (1 specimen): 15.9.

Class III, Category 1 Button Backs

This category consists of button backs characteristic of Class III buttons. Two varieties are defined on the basis of material.

Variety a Bone.

Figure 15 J-K

19 specimens

Dimensions (19 specimens): 2 sizes, (1) 14.0-15.5;  
(2) 20.5-23.5.

Variety b Wood.

Figure 15 L

19 specimens

Dimensions (19 specimens): 2 sizes, (1) 13.5-15.0;  
(2) 19.5-22.0.

Discussion: Class III

Little evidence has been presented to permit an accurate dating of CIII buttons. The 84 CIII specimens (including CII, Cat. 1 backs) were plotted on a distribution map. CIII buttons are commonly found

in the SSW rowhouse unit, in the garden areas north and south of this unit, and in the NNW rowhouse unit. Areas of low frequency or absence are the British soldiers' barracks (F. 3), the NW and SW rowhouse units and the Church and Priest's house area. From this evidence, it appears that CIII buttons were in common civilian use throughout the period of British control (1760-1781); however, French or British attribution is not possible.

Class IV Crown, Back, Eye, and Filler, All Separate Elements

Series A Crown, Back, and Eye Produced Separately, Double Wire Eye Crimped to Back Through Four Drilled Holes, Crown Crimped Over Back With Clay Filler Between

The crown elements of Class IV buttons were produced by striking a thin disk of metal in a mold which had been engraved with the desired decorations. Metal backs for Class IV were produced by a similar process; bone and wood backs were cut and drilled. A filler element was inserted between crown and back.

Type 1 Brass crown, back, and eye, clay filler

Variety a Slightly convex crown and back; 2 thin, wire cross-eyes.

Figure 15 M

18 specimens (7 complete, 11 backs)

Dimensions (18 specimens): 2 sizes, (1) 15.0-16.5;  
(2) 21.5-23.5.

CIV, SA, T1, Va specimens were recovered from the garden area between the SW and SSW rowhouse units, from the NNW rowhouse unit, and from the area of the north walls of the first and second expansion stockades. Feature contexts duplicate these associations. This evidence does not support a clear dating for CIV, SA, T1, Va specimens.

Series B Crown, Back, And Eye Produced Separately, Eye Crimped to Back, Crown Crimped to Back With Filler Between

Type 1 Pewter crown, iron back and eye, clay filler

Variety a Convex crown with raised Ks 8 design; slightly convex back.

Figure 15 N-O

2 specimens

Dimensions (2 specimens): 23.5, 16.6.

These specimens represent British officers' buttons (see discussion of CI, SD, T1, Va).

Type 2 Pewter crown, iron back, brass eye, clay filler

Variety a Convex crown with raised geometric design;  
slightly convex back.

Figure 15 P

1 specimen

Dimensions (1 specimen): 20.9.

Type 3 Pewter crown, pewter back, unknown eye material

Variety a Slightly convex crown and back; raised Ks 8  
design on crown.

Figure 15 Q

1 specimen

Dimensions (1 specimen): 16.4.

This specimen represents a British officers' button (see discussion of CI, SD, T1, Va).

Type 4 Brass crown and back, unknown eye

Variety a Slightly convex crown and back; raised geometric and floral design on crown.

Figure 15 R

1 specimen

Dimensions (1 specimen): 15.8.

Type 5 Brass or copper crown, bone back with 1 drilled hole for brass eye

Type 5 varieties are presented in a tabular format (Table 6 ). Refer to figures for information on decoration. All varieties have slightly convex crowns and backs. It is probable that all specimens have a clay filler element.



TABLE 6 Button Descriptions: Class IV, Series A, Type 5, Varieties a through j

Taxonomic Designation	Figure Designation	Frequency	Size	Crown Decoration and Comments
CIV, SA, T5, Va	15 S	3	26.4, 26.3, 21.1	Raised floral and geometric design (sunburst).
Vb	15 T	1	21.6	Raised floral design.
Vc	15 U	1	15.9	Raised floral design.
Vd	16 A	1	22.3	Raised floral and geometric design.
Ve	16 B	1	15.7	Raised floral design.
Vf	16 C	1	15.4	Raised floral and geometric design.
Vg	16 D	1	16.0	Raised floral and geometric design; gilt.
Vh	16 E	1	21.4	Impressed floral design.
Vi	16 F	1	16.4	Impressed floral design.
Vj	16 G	1	21.9	Raised geometric design (diamonds).

Discussion: Class IV, Series B, Type 5

CIV, SB, T5 specimens cannot be dated on the basis of distributional or comparative evidence.

Class IV, Category 1 Button Backs

This category consists of button backs characteristic of CIV buttons. Two varieties are defined on the basis of material.

Variety a Bone.

not illustrated

15 specimens

Dimensions (14 specimens): 2 sizes, (1) 14.0-15.5;  
(2) 20.5-22.0.

Variety b Iron.

not illustrated

10 specimens

Dimensions (10 specimens): 2 sizes, (1) 15.5-17.0;  
(2) 21.5-23.0.

Class V Crown Over Filler-BackSeries A Crown Sewn Over Filler-Back and Attached to BackType 1 Fabric crown, wood filler-back

Variety a Convex crown of woven, twisted yard (copper-green color) over flat back; single drilled hole through back.

Figure 16 H

7 specimens

Dimensions (7 specimens): diameter range, 15.5-21.5.

Variety b Flat crown of woven silver strips and silver wrapped yarn; flat back.

Figure 16 I

1 specimen

Dimensions (1 specimen): 17.7.

Variety c Convex crown of silver wrapped yarn; flat back; wound silver wire between filler-back and crown.

Figure 16 J

1 specimen

Dimensions (1 specimen): 22.5.

Class VI    Single Element ButtonsSeries A    Lathe Turned Buttons With Drilled Holes for AttachmentType 1    Shell

Variety a    Flat crown with central recessed area through which 4 holes have been drilled; flat back.

Figure 16 K-L

3 specimens

Dimensions (3 specimens): 16.9, 15.2, 14.9.

Variety b    Flat crown with center recessed area through which 2 holes have been drilled; flat back.

Figure 16 M-N

2 specimens

Dimensions (2 specimens): 12.4, 12.2.

Variety c    Flat crown with center recessed slit through which 2 holes have been drilled; flat back.

Figure 16 O-P

4 specimens

Dimensions (4 specimens): 12.3, 11.4, 14.4, 8.8.

Button Categories

Three button categories have been defined which cannot be assigned specific class designations within the formal classification: (1) button blanks and manufacturing by-products, (2) button filler, and (3) button crowns. The button crown classification corresponds closely in formal arrangement to that proposed for complete specimens above.

Category 1    Button Blanks and By-ProductsType 1    Bone blanks

Thin bone disks commonly used as button backs on CIV, SB, T5 buttons; each disk has one central drilled hole and is flat to slightly convex on each face.

## Figure 16 Q

129 specimens

Dimensions (75 specimens): 2 sizes, (1) 13.0-15.0;  
(2) 19.5-21.5.

The majority of specimens appear to be button-back blanks since their edges have not been cut and recessed to receive a crimped metal crown. These specimens were manufactured on the site, probably to replace broken or worn bone button backs. The majority of specimens were found within the SSW rowhouse unit, in the garden areas to the north and south of this unit, and within the NNW rowhouse unit and the British soldiers' barracks (F. 3.) Specific feature associations correspond to this general distribution pattern. This pattern of distribution and feature associations corresponds to formal types described above which have been dated between 1750 and 1780.

Type 2 Bone by-products

Type 2 specimens consist of bone fragments from which Cat. 1, T1 button-back blanks were cut.

## Figure 16 R

10 specimens

Category 2 FillerType 1 Clay

## Figure 16 S

3 specimens

Dimensions (3 specimens): 13.2, 15.3, 12.9.

Category 3 Button Crowns

Series A Brazen Form (specimens may represent formal CII, SB through CII, SE crowns)

Type 1 Brass

Variety a Flat, plain.

## Figure 16 T

31 specimens

Dimensions (28 specimens): 2 sizes, (1) 16.0-17.0;  
(2) 20.5-23.0.

Variety b Flat, raised pinwheel design.

Figure 16 U

1 specimen

Dimensions (1 specimen): 21.3.

Series B Crimped Form

Type 1 Brass

Type 1 varieties are described in a tabular format (Table 8 ).  
Design and shape attributes distinguish varieties. Refer to  
figures for information on crown decoration.

TABLE 7 Button Measurements

Taxonomic Designation			Frequency	Number Measured	Diameter Measurements
CI,	SA, T1,	Va	30	30	2 sizes, (1) 15.0-17.0; (2) 21.5-22.5
		Vb	9	9	2 sizes, (1) 16.0-17.5; (2) 21.0-23.0
		Vc	3	2	16.0, 14.5
		Vd	1	1	14.6
		Ve	1	1	17.3
		Vf	1	1	17.4
		Vg	1	1	15.3
		Vh	4	3	13.6, 14.4, 15.6
		Vi	1	1	17.0
		Vj	1	1	15.6
		T1, Va	2	2	17.6, 20.7
		T2, Va	1	1	22.8
		Vb	1	1	23.7
		T3, Va	1	1	18.4
		Vb	1	1	25.7
		Vc	1	1	25.0
		Vd	2	2	17.7, 17.8
		Ve	1	1	17.0
		Vf	1	1	17.1
		Vg	1	1	17.6
		Vh	1	1	17.3
		Vi	1	1	17.2
		Vj	1	1	17.2
		T4, Va	1	1	17.6
		Vb	1	1	17.3
		T5, Va	1	1	17.1
		Vb	1	1	17.6
CI,	SC, T1,	Va	78	78	2 sizes, (1) 17.0-19.5; (2) 23.5-24.5
	SD, T1,	Va	228	143	2 sizes, (1) 23.5-24.5; (2) 18.0-19.0
		Vb	1	1	15.0
		Vc	1	1	14.3
		Vd	42	42	2 sizes, (1) 17.5-18.5; (2) 24.0-25.0
		Ve	7	7	2 sizes, (1) 17.0-18.0; (2) 24.0-25.0
		Vf	1	1	18.2
		Vg	9	9	2 sizes, (1) 17.0-18.0; (2) 23.0-24.0
		Vh	6	5	16.5-32.1 (range)
		Vi	1	1	24.0
		Vj	1	1	16.6
	T2,	Va	5	4	16.9, 17.4, 15.5, 18.3
	T3,	Va	3	3	19.7, 16.0, 16.0
		Vb	2	2	30.4, 25.9

TABLE 7 (Cont.)

Taxonomic Designation			Frequency	Number Measured	Diameter Measurements
		T4, Va	17	17	2 sizes, (1) 16.0-18.0; (2) 22.0-24.0
		Vb	26	26	2 sizes, (1) 17.5-18.5; (2) 23.0-26.0
		Vc	1	1	16.7
		Vd	2	2	22.0, 22.3
		Ve	2	2	26.0, 17.3
CII,	SA, T1, Va		249	125	2 sizes, (1) 15.5-17.0; (2) 21.0-22.5
	SB, T1, Va		26	26	2 sizes, (1) 14.5-16.0; (2) 18.5-20.5
	SC, T1, Va		4	4	15.2, 20.0, 20.3, 14.7
	SD, T1, Va		12	12	2 sizes, (1) 14.5-15.5; (2) 20.0-23.0
	T2, Va		36	36	2 sizes, (1) 16.0-17.5; (2) 21.5-22.5
	SE, T1, Va		19	17	2 sizes, (1) 15.5-17.0; (2) 19.5-22.0
	T2, Va		6	6	2 sizes, (1) 14.0-15.5; (2) 19.5-20.5
	T3, Va		2	2	21.6, 21.4
	T4, Va		1	1	23.9
	T5, Va		1	1	22.1
CIII,	SA, T1, Va		3	3	24.1, 15.9, 17.3
	Vb		1	1	16.2
	Vc		3	3	16.1, 22.6, 16.1
	Vd		1	1	16.6
	Ve		1	1	17.6
	Vf		1	1	21.6
	Vg		2	2	17.3, 16.3
	Vh		1	1	15.8
	Vi		1	1	15.4
	Vj		1	1	21.7
	Vk		1	1	17.3
	Vl		1	1	16.0
	Vm		1	1	21.3
	Vn		1	1	23.7
	T2, Va		1	1	17.4
	T3, Va		1	1	24.4
	Vb		1	1	15.6
	T4, Va		1	1	22.9
	T5, Va		2	2	21.4, 16.1
	Vb		1	1	17.1
	Vc		1	1	22.1
	Vd		2	2	21.3, 16.0
	Ve		1	1	25.0
	Vf		1	1	16.8
	Vg		1	1	21.8
	Vh		1	1	17.3
	Vi		1	1	18.3
	Vj		1	1	21.6

TABLE 7 (Cont.)

Taxonomic Designation		Frequency	Number Measured	Diameter Measurements
	Vk	1	1	23.8
	Vl	1	1	16.6
	Vm	1	1	15.8
	Vn	1	1	22.1
	Vo	1	1	20.0
	T6, Va	3	3	15.6, 21.4, 16.2
	Vb	1	1	15.9
	Vc	1	1	15.9
CIII, Cat. 1,	Va	19	19	2 sizes, (1) 14.0-15.5; (2) 20.5-23.5
	Vb	19	19	2 sizes, (1) 13.5-15.0; (2) 19.5-22.0
CIV, SA, T1,	Va	18	18	2 sizes, (1) 15.0-16.5; (2) 21.5-23.5
SB, T1,	Va	2	2	23.5, 16.6
	T2, Va	1	1	20.9
	T3, Va	1	1	16.4
	T4, Va	1	1	15.8
	T5, Va	3	3	26.4, 26.3, 21.1
	Vb	1	1	21.6
	Vc	1	1	15.9
	Vd	1	1	22.3
	Ve	1	1	15.7
	Vf	1	1	15.4
	Vg	1	1	16.0
	Vh	1	1	21.4
	Vi	1	1	16.4
	Vj	1	1	21.9
CIV, Cat. 1,	Va	15	14	2 sizes, (1) 14.0-15.5; (2) 20.5-22.0
	Vb	10	10	2 sizes, (1) 15.5-17.0; (2) 21.5-23.0
CV, SA, T1,	Va	7	7	15.5-21.5
	Vb	1	1	17.7
	Vc	1	1	22.5
CVI, SA, T1,	Va	3	3	16.9, 15.2, 14.9
	Vb	2	2	12.4, 12.2
	Vc	4	4	12.3, 11.4, 14.4, 8.8
Cat. 1,	T1	129	75	2 sizes, (1) 13.0-15.0; (2) 19.5-21.5
	T2	10		
Cat. 2	T1	3	3	13.2, 15.3, 12.9
Cat. 3, SA, T1,	Va	31	28	2 sizes, (1) 16.0-17.0; (2) 20.5-23.0
	Vb	1	1	21.3
SB, T1,	Va	16	16	2 sizes, (1) 15.5-17.0; (2) 21.5-23.5
	Vb	7	7	2 sizes, (1) 15.0-16.0; (2) 21.0-23.0
	Vc	2	2	18.3, 17.4
	Vd	26	25	2 sizes, (1) 15.5-17.0; (2) 21.0-23.5



TABLE 7 (Cont.)

Taxonomic Designation	Frequency	Number Measured	Diameter Measurements
Ve	5	3	21.6, 16.4, 19.5
Vf	3	3	15.6, 16.2, 25.0
Vg	1	1	28.9
Vh	3	3	16.7, 16.8, 12.3
Vi	1	1	22.3
Vj	3	3	15.6, 24.0, 16.7
Vk	2	2	15.5, 15.7
Vl	1	1	15.7
Vm	1	1	15.3
Vn	1	1	25.2
Vo	2	2	17.2, 19.3
Vp	1	1	17.3
Vq	1	1	15.8
Vr	1	1	15.0
Vs	2	2	15.8, 16.2
Vt	2	2	21.4, 22.0
Vu	3	3	21.4, 15.7, 22.3
Vv	3	3	30.4, 21.9, 17.2
Vw	1	1	15.5
Vx	2	2	17.0, 17.8
Vy	1	1	16.0
Vz	1	1	24.7
Vaa	1	1	17.6
Vbb	1	1	22.5
Vcc	4	3	21.4, 21.4, 21.0
Vdd	1	1	14.8
Vee	1	1	24.6
Vff	1	1	15.9
Vgg	1		
Vhh	1	1	15.6
Vii	1	1	17.9
Vjj	1	1	15.8
Vkk	1	1	21.8
Vll	1	1	21.5
Vmm	1	1	25.2
Vnn	1	1	24.6
Voo	1	1	26.7
Vpp	1	1	24.3
Vqq	1	1	25.5
Vrr	1	1	22.3
Vss	2	2	15.7, 16.0
Vtt	8	8	22.0-24.5 (range)

TABLE 7 (Cont.)

Taxonomic Designation	Frequency	Number Measured	Diameter Measurements	
Vuu	1	1	17.8	
Vvv	1			
T2, Va	1	1	23.6	
Vb	1	1	28.3	
Vc	1	1	15.8	
T3, Va	3	2	22.3,	15.9
Vb	1	1	16.4	
T4, Va	2	1	21.6	
Vb	1	1	23.7	
T5, Va	1	1	16.6	
Vb	1	1	18.7	
Vc	1	1	18.8	

TABLE 8 Button Descriptions: Button Cat. 3, Series B, Type 1, Varieties a through vv

Taxonomic Designation	Figure Designation	Frequency	Size	Crown Decoration and Comments
Button Cat. 3 SB, T1, Va	16 V	16	(1) 15.5-17.0 (2) 21.5-23.5	Plain, slightly convex
Vb	none	7	(1) 15.0-16.0 (2) 21.0-23.0	Plain, convex, gilt
Vc	none	2	18.3, 17.4	Plain, domed-convex
Vd	16 W-X	26	(1) 15.5-17.0 (2) 21.0-23.5	Convex with edge rim
Ve	16 Y	5	21.6, 16.4, 19.5	Raised basket-weave design, gilt, slightly convex
Vf	16 Z	3	15.6, 16.2, 25.0	Raised basket-weave design, slightly convex
Vg	16 AA	1	28.9	Raised basket-weave, bilt, slightly convex
Vh	16 BB	3	16.7, 16.8, 12.3	Raised geometric design, domed-convex
Vi	16 CC	1	22.3	Raised floral and geometric design, gilt, flat crown
Vj	16 DD-EE	3	15.6, 24.0, 16.7	Impressed floral design, gilt, slightly convex
Vk	16 FF-GG	2	15.5, 15.7	Raised floral design, gilt, (1 specimen lacks gilt), slightly convex
Vl	16 HH	1	15.7	Raised geometric design, gilt, slightly convex

TABLE 8 (Cont.)

Taxonomic Designation	Figure Designation	Frequency	Size	Crown Decoration and Comments
Vm	16 II	1	15.3	Raised geometric design, domed-convex
Vn	17 A	1	25.2	Raised geometric design, gilt, slightly convex
Vo	17 B-C	2	17.2-19.3	Flat, gilt, raised Ks 8 design (horse symbol and letters HONI.SOIT.QVL.MAL.Y.PENSE.
Vp	17 D	1	17.3	Slightly convex, geometric and floral design raised
Vq	17 E	1	15.8	Slightly convex, geometric design raised
Vr	17 F	1	15.0	Slightly convex, raised geometric design
Vs	17 G	2	15.8, 16.2	Slightly convex, raised geometric design, gilt
Vt	17 H	2	21.4, 22.0	Slightly convex, raised geometric design
Vu	17 I-J	3	21.4, 15.7, 22.3	Slightly convex, raised floral design
Vv	17 K	3	30.4, 21.9, 17.2	Slightly convex, impressed floral and geometric design, gilt
Vw	17 L	1	15.5	Slightly convex, raised floral design
Vx	17 M	2	17.0, 17.8	Slightly convex, raised floral design
Vy	17 N	1	16.0	Slightly convex, impressed floral design
Vz	17 O	1	24.7	Slightly convex, raised geometric design, gilt
Vaa	17 P	1	17.6	Domed convex, raised geometric design

TABLE 8 (Cont.)

Taxonomic Designation	Figure Designation	Frequency	Size	Crown Decoration and Comments
Vbb	17 Q	1	22.5	Flat, raised geometric design
Vcc	17 R	4	21.4, 21.4, 21.0	Slightly convex, raised geometric design
Vdd	17 S	1	14.8	Slightly convex, raised geometric design, gilt
Vee	17 T	1	24.6	Slightly convex, raised floral and geometric design, gilt
Vff	17 U	1	15.9	Slightly convex, raised geometric design
Vgg	17 V	1		Domed-convex, raised floral design
Vhh	17 W	1	15.6	Flat crown, raised brass cups with iron, raised floral design
Vii	17 X	1	17.9	Slightly convex, raised floral design
Vjj	17 Y	1	15.8	Slightly convex, raised floral design, gilt
Vkk	17 Z	1	21.8	Slightly convex, raised geometric design
Vll	17 AA	1	21.5	Slightly convex, raised floral design
Vmm	17 BB	1	25.2	Slightly convex, raised floral design
Vnn	17 CC	1	24.6	Slightly convex, raised geometric and floral design
Voo	17 DD	1	26.7	Slightly convex, raised floral design, gilt
Vpp	17 EE	1	24.3	Slightly convex, raised geometric design, gilt
Vqq	17 FF	1	25.5	Flat, raised floral design

TABLE 8 (Cont.)

Taxonomic Designation	Figure Designation	Frequency	Size	Crown Decoration and Comments
Vrr	17 GG	1	22.3	Domed-convex, raised geometric design, gilt
Vss	17 HH	2	15.7, 16.0	Slightly convex, raised floral design
Vtt	18 A	8	22.0-24.5	Flat, plain, gilt
Vuu	18 B	1	17.8	Slightly convex, raised geometric and floral design
Vvv	18 C	1		Slightly convex, raised floral design

Types 2, 3, 4, and 5

These types may be combined and described in the same tabular format (Table 9 ). Type 2 button crowns are represented by specimens which have an inner solid brass disk and an outer perforated disk (compare with CIII, SA, T3, T4, and T6). Type 3 button crowns are silver plated brass. Type 4 specimens are brass and exhibit attached fabric filler. Type 5 specimens are pewter.

TABLE 9 Button Descriptions: Button Category 3, Series B, Types 2, 3, 4, and 5

Taxonomic Designation	Figure Designation	Frequency	Size	Crown Decoration and Comments
Cat. 3, SB, T2, Va	18 D	1	23.6	Slightly convex, perforated design
Vb	18 E	1	28.3	Slightly convex, perforated design, gilt
Vc	18 F	1	15.8	Slightly convex, perforated design, gilt
T3, Va	18 G, H	3	22.3, 15.9	Slightly convex, plain
Vb	18 I	1	16.4	Slightly convex, geometric design
T4, Va	18 J	2	21.6	Flat, plain
Vb	18 K	1	23.7	Flat, impressed floral design, gilt
T5, Va	18 L	1	16.6	Slightly convex, plain
Vb	18 M	1	18.7	Slightly convex, raised Ks 8 design
Vc	18 N	1	18.8	Slightly convex, raised geometric design



### Discussion: Button Category 3

All Category 3 button specimens were combined on a distribution map for interpretative purposes. Their presence is noted in the NNW, SW and SSW rowhouse units, and in the garden areas north and south of the SSW rowhouse unit. Areas of absence of low frequency are the Church and Priest's house area and the British soldiers' barracks (F. 3). These buttons were apparently worn by civilians from at least 1740 until 1780. A similar but more restricted pattern of distribution was noted for formal button types (CIII and CIV) to which Category 3 crowns correspond as a structural element.

### Discussion: Buttons

The preceding formal classification of buttons provides a large body of data for comparative research. Unfortunately, many of the button types described were neither dated nor assigned to specific nationalities of use. This shortcoming reflects both the inadequacy of comparative evidence and the failure of site distributional evidence to yield firm dates.

As with other artifact categories described in this report, several unresolved problems resulted from the analysis. The large majority of button types were assigned dates between 1740 and 1780; this is inconsistent with the known period of site occupation. This observation could be the result of two interrelated factors: (1) misinterpretation, and (2) differences in the social composition and size of population at the site prior to and after 1740. The most frequent button types were of military usage and were standardized in both structure and design. Civilian buttons were less frequent and lacked standardization in either structure or design. Similar observations have been made for buckles and other items of civilian adornment, such as rings and beads.

The distribution of different button types at the site is a very useful indicator of structure contemporaneity and usage. This evidence is further elaborated in Chapter 4.

Figure 10 Buttons (Actual Size)

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	CI, SA, T1, Va	1305
B	Vb	2445
C	Vd	881
D	Ve	2024
E	Vf	3416
F	Vh	2563
G	Vh	3094
H	Vi	3314
I	Vj	1608
J	SB, T1, Va	2650
K	T2, Va	2741
L	Vb	896
M	T3, Va	1
N	Vb	1
O	Vc	1900
P	Vd	1101
Q	Ve	2890
R	Vf	1

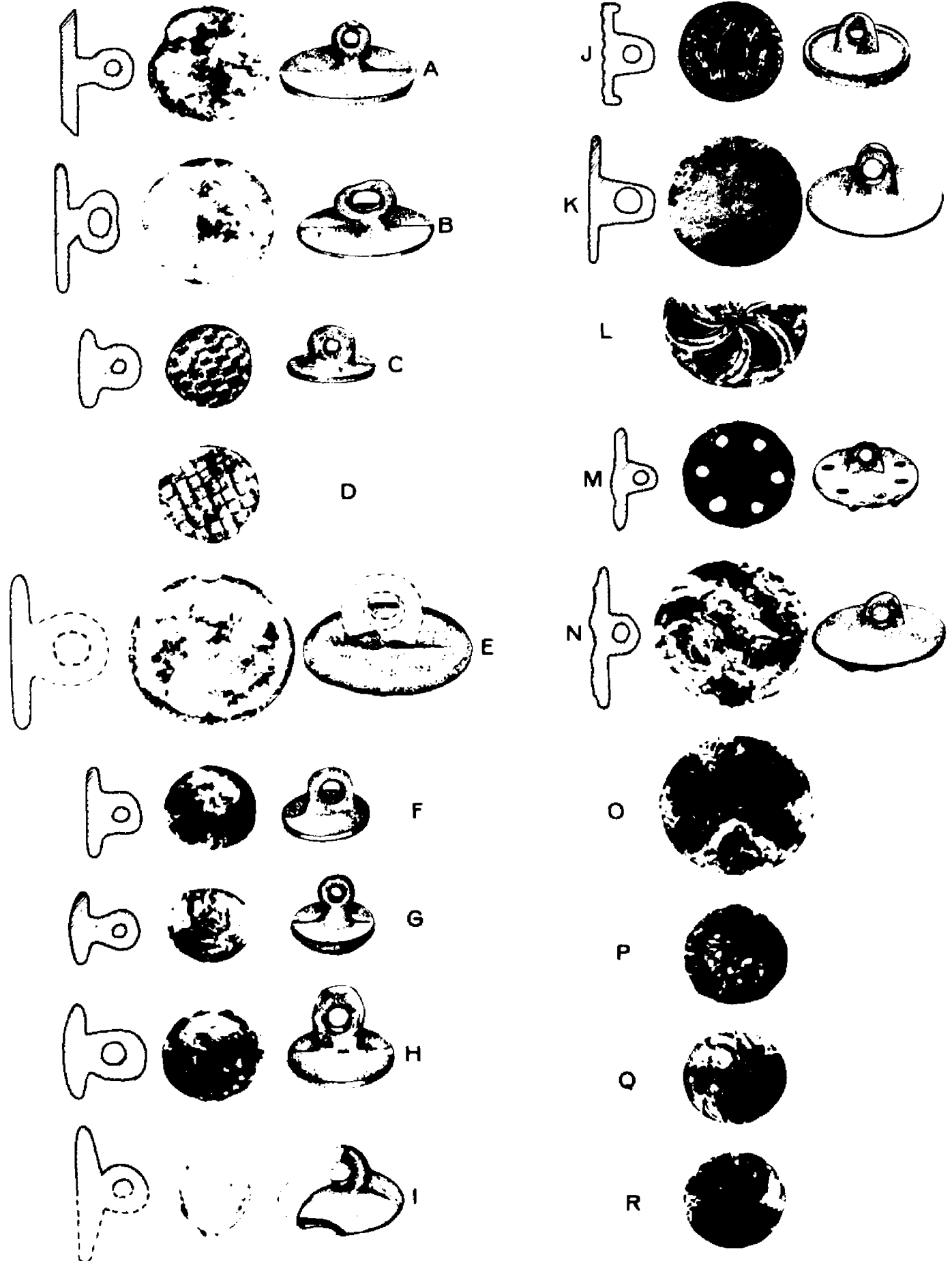


Figure 11 Buttons (Actual Size)

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	CI, SB, T3, Vg	1192
B	Vh	1
C	Vi	1
D	Vj	3004
E	T4, Va	1106
F	Vb	1
G	T5, Va	310
H	Vb	2687
I	SC, T1, Va	1
J	SD, T1, Va	411
K	Vb	2348
L	Vc	448
M	Vd	1343
N	Vd	676
O	Ve	1460
P	Ve	1400
Q	Vf	151
R	Vg	2781

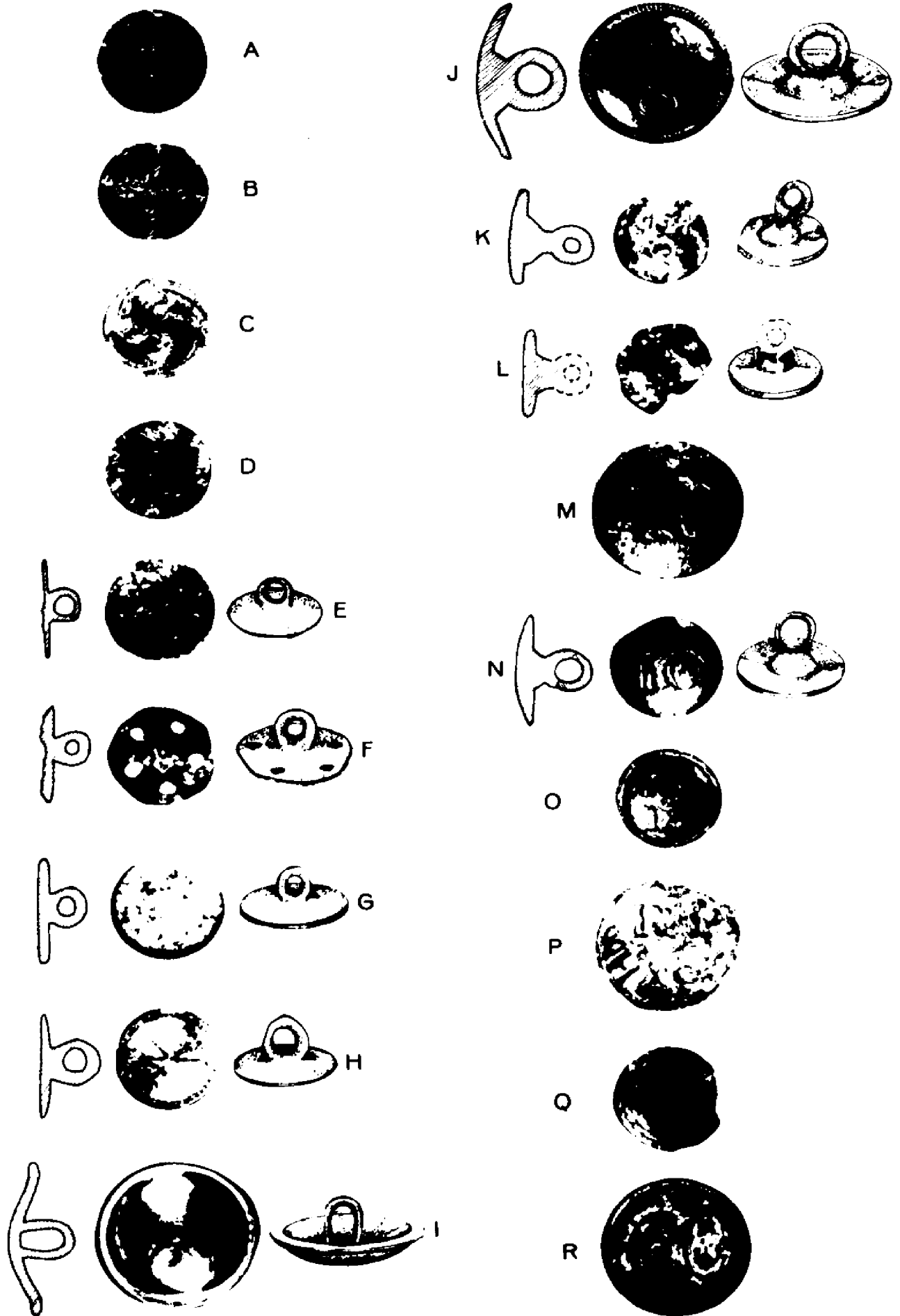


Figure 12 Buttons (Actual Size)

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	CI, SD, T1, Vh	1399
B	Vi	1416
C	Vj	493
D	T2, Va	871
E	T3, Va	2462
F	Vb	2014
G	T4, Va	1
H	Vb	1
I	Vc	344
J	Vd	3026
K	Ve	1499
L	CII, SA, T1, Va	2443
M	SD, T1, Va	2370
N	SB, T1, Va	169
O	SC, T2, Va	3120
P	SD, T1, Va	1348
Q	SD, T2, Va	2004

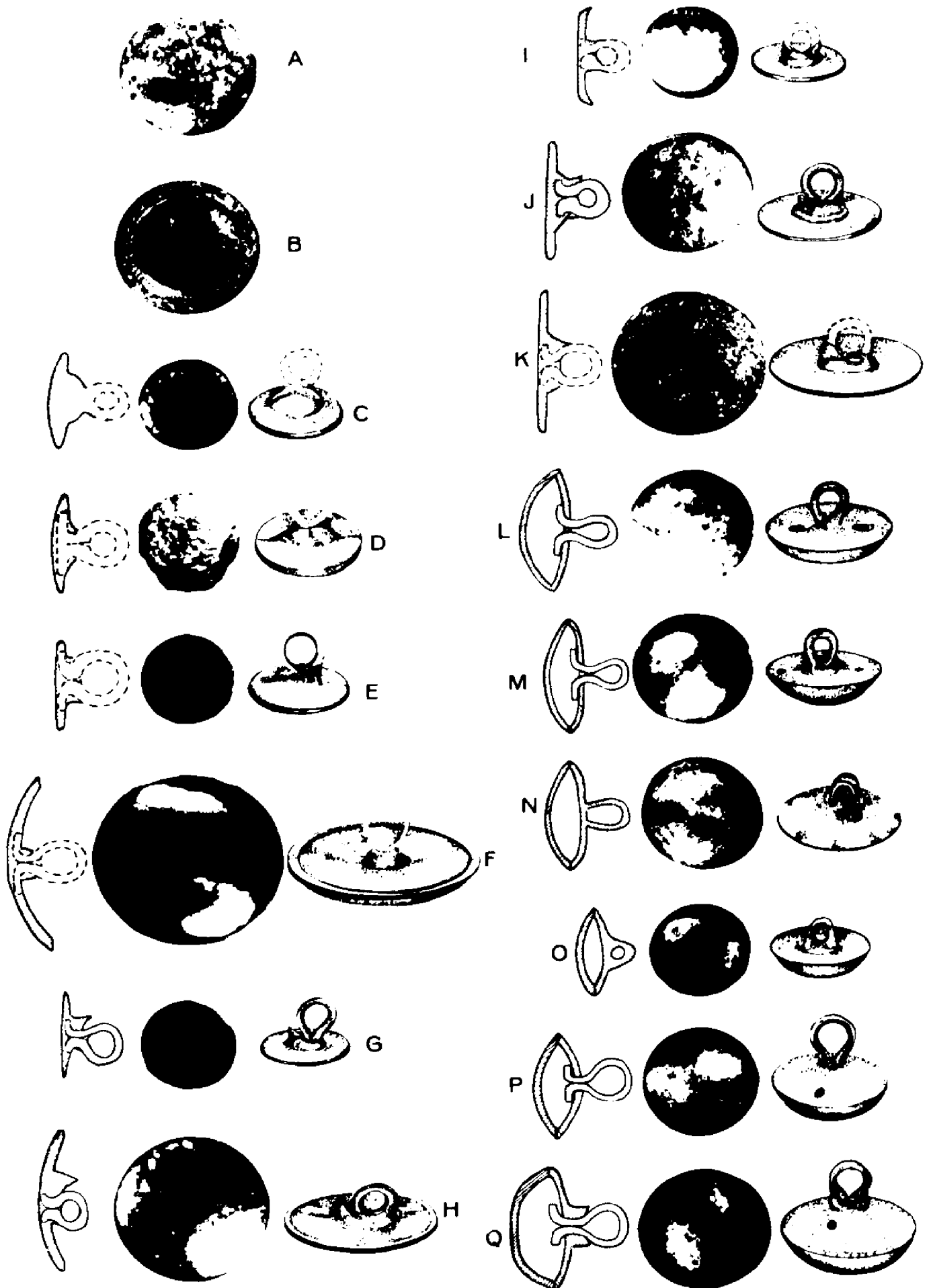
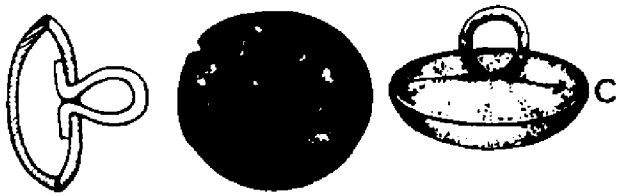
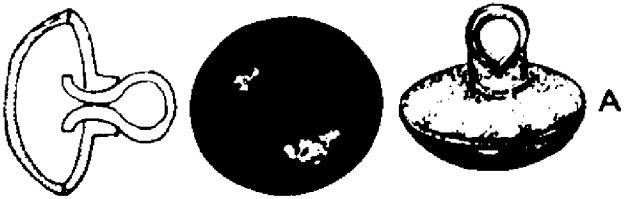




Figure 13 Buttons (Actual Size)

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	CII, SE, T1, Va	1459
B	T2, Va	2060
C	T3, Va	264
D	T4, Va	1
E	T5, Va	1
F	CIII, SA, T1, Va	2066
G	Vb	3120
H	Vc	2007
I	Vd	2216
J	Ve	528
K	Vf	1464
L	Vg	240
M	Vg	1951
N	Vh	2771
O	Vi	1402
P	Vj	2891
Q	Vk	1520
R	vl	911



R

Figure 14 Buttons (Actual Size)

Figure Designation	Taxonomic Designation	Catalog <sup>2</sup> Number, MS
A	CIII, SA, T1, Vm	2184
B	Vn	2457
C	Vo	578
D	T2, Va	812
E	T3, Va	759
F	Vb	2642
G	T4, Va	1853
H	T5, Va	2699
I	Vb	1
J	Vc	1025
K	Vd	2512
L	Ve	1
M	Vf	1427
N	Vg	2821
O	Vh	2606
P	Vi	1399



A



B



C



D



E



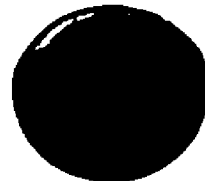
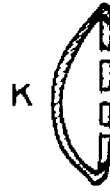
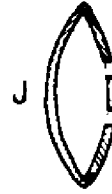
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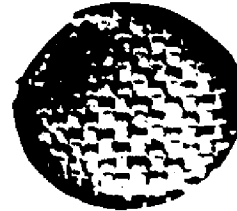
G



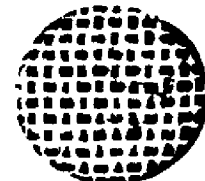
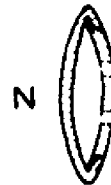
H



L



M



N

O



P



Figure 15 Buttons (Actual Size)

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	CIII, SA, T5, Vj	3331
B	Vk	364
C	Vl	645
D	Vm	244
E	Vn	813
F	Vo	2000
G	T6, Va	1
H	Vb	267
I	Vc	657
J	CIII, Cat. 1, Va	1687
K	Va	460
L	Vb	2390
M	CIV, SA, T1, Va	1
N	SB, T1, Va	2643
O	Va	1282
P	T2, Va	1
Q	T3, Va	2323
R	T4, Va	2085
S	T5, Va	1954
T	Vb	1144
U	Vc	1356

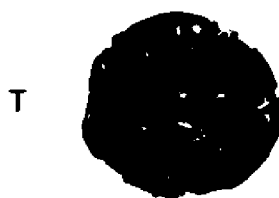
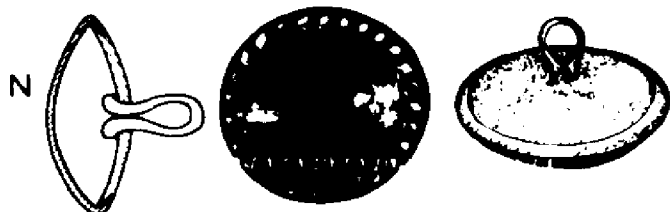
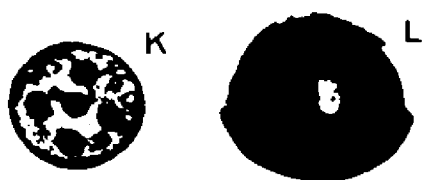
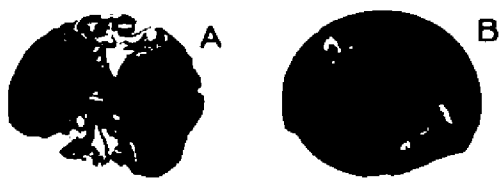


Figure 16 Buttons (Actual Size)

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>	Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	CIV, SB, T5, Vd	554	S	Cat. 2, T1, Va	2269
B	Ve	267	T	Cat. 3, SA, T1, Va	1
C	Vf	4	U	Vb	2834
D	Vg	587	V	SB, T1, Va	1416
E	Vh	1470	W	Vd	2828
F	Vi	1776	X	Vd	2623
G	Vj	1	Y	Ve	2214
H	CV, SA, T1, Va	978	Z	Vf	1416
I	Vb	1	AA	Vg	1240
J	Vc	1	BB	Vh	21
K	CVI, SA, T1, Va	200	CC	Vi	1820
L	Va	3082	DD	Vj	432
M	Vb	3052	EE	Vj	1
N	Vb	3448	FF	Vk	889
O	Vc	2031	GG	Vk	2884
P	Vc	3391	HH	Vl	2461
Q	Cat. 1, T1, Va	1930	II	Vm	2369
R	T2, Va	344			

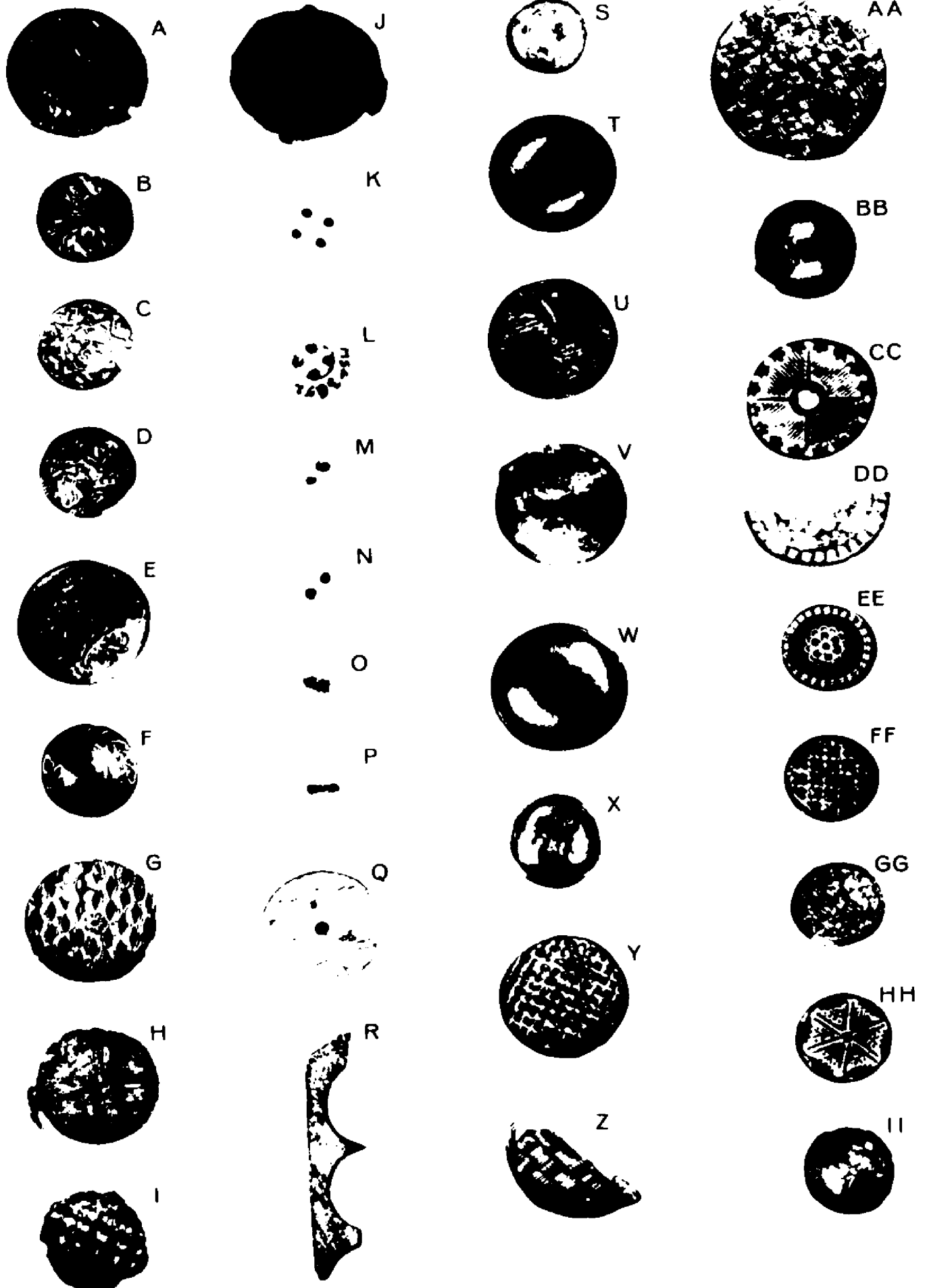
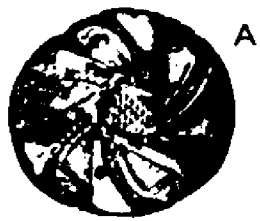




Figure 17 Buttons (Actual Size)

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>	Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	Cat. 3, SB, Tl, Vn	1	R	Vcc	741
B	Vo	894	S	Vdd	2519
C	Vo	1633	T	Vee	1
D	Vp	1320	U	Vff	1
E	Vq	1	V	Vgg	1019
F	Vr	1	W	Vhh	189
G	Vs	2536	X	Vii	203
H	Vt	2571	Y	Vjj	1
I	Vu	2834	Z	Vkk	2675
J	Vu	528	AA	Vll	
K	Vv	2337	BB	Vmm	3104
L	Vw	534	CC	Vnn	1066
M	Vx	901	DD	Voo	1
N	Vy	1266	EE	Vpp	2177
O	Vz	1	FF	Vqq	1428
P	Vaa	1	GG	Vrr	1724
Q	Vbb	1	HH	Vss	1



A



J



R



AA



B



K



S



BB



C



L



T



CC



D



M



U



DD



E



N



V



EE



F



O



W



FF



G



P



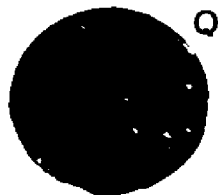
X



GG



H



Q



Y



HH



I



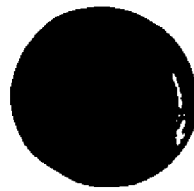
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Figure 18 Buttons (Actual Size)

Figure Designation	Taxonomic Designation	Catalog <sup>2</sup> Number, MS
A	Cat. 3, SB, T1, Vtt	297
B	Vuu	1
C	Vvv	1
D	T2, Va	2472
E	Vb	1947
F	Vc	3242
G	T3, Va	3335
H	Va	1
I	Vb	1
J	T4, Va	3
K	Vb	2548
L	T5, Va	422
M	Vb	3314
N	Vc	1493



A



J



B



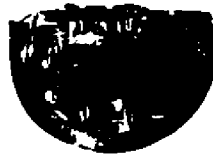
K



C



L



D



M



E



N



F



G



H



I

TABLE 10 Buttons: Feature Associations

Taxonomic Designations			Frequency	Feature Association	Taxonomic Designation			Frequency	Feature Association
CI,	SA, T1, Va		1	297		Va	1	151	
		Va	1	243		Va	1	18	
		Vb	2	262		Va	3	299	
		Vc	1	265		Va	1	348	
		Vg	1	262		Va	1	118	
		Vi	1	296		Va	1	267	
	SB, T2, Va		1	263		Vd	1	79	
	T3, Vd		1	262		Vd	1	254	
		Ve	1	299		Vd	1	141	
		Vj	1	296		Vd	1	229	
	SC, T1, Va		1	300		Vd	1	16	
		Va	1	365		Ve	1	85	
		Va	1	227		Ve	1	215	
		Va	1	298		Vh	1	85	
		Va	1	292		Vh	2	267	
		Va	1	21		Vi	1	85	
		Va	1	118	CI, SD, T4, Vb	2	262		
	SD, T1, Va		2	263		Vb	1	216	
		Va	2	54		Vb	1	118	
		Va	1	87	CII, SA, T1, Va	16	262		
		Va	5	297		Va	1	80	
		Va	1	21		Va	1	142	
		Va	1	82		Va	1	77	
		Va	1	79		Va	4	85	
		Va	1	210		Va	1	271	
		Va	5	296		Va	1	80	
		Va	1	262		Va	1	54	
		Va	1	117		Va	2	296	
		Va	1	3		Va	1	338	

TABLE 10 (Cont.)

Taxonomic Designation	Frequency	Feature Association	Taxonomic Designation	Frequency	Feature Association		
	Va	2	118		T2, Va	1	148
	Va	1	144	CIII, SA, T1, Va	1	297	
	Va	1	20		Vg	1	21
	Va	1	222		Vh	1	281
	Va	1	83		Vj	1	299
	Va	1	254		T2, Va	1	118
	Va	1	248		T5, Vd	1	267
	Va	1	324		Vi	1	85
	Va	1	21		Vm	1	21
	Va	13	267		Vo	1	226
	Va	1	79		T6, Va	1	118
SB, T1, Va	1	209			Vb	1	21
	Va	1	93		Ve	1	265
	Va	1	118	CIII, Cat. 1, Va	1	85	
	Va	1	112		Va	1	21
	Va	2	203		Vb	1	246
SC, T1, Va	1	235			Vb	1	118
T2, Va	2	248			Vb	1	209
	Va	2	79	CIV, SA, T1, Va	1	79	
	Va	2	118		Va	1	82
	Va	1	296		Va	1	81
	Va	1	267		SB, T5, Va	1	213
SD, T1, Va	1	85			Va	1	80
	Va	1	267		Ve	1	21
T2, Va	1	85		CIV, Cat. 1, Va	1	21	
	Va	1	83		Va	1	85
	Va	1	20		Va	1	216
SE, T1, Va	1	101			Va	1	79
	Va	1	262	CV, SA, T1, Va	1	21	

TABLE 10 (Cont.)

Taxonomic Designation		Frequency	Feature Association	Taxonomic Designation		Frequency	Feature Association
	Va	1	267	Cat. 3, SB, T1, Va		1	83
Cat. 1,	T1	7	85		Vd	1	254
Cat. 1,	T1	1	21		Vd	1	296
Cat. 1,	T1	1	26		Vd	1	94
Cat. 1,	T1	1	296		Vd	1	83
Cat. 1,	T1	1	20		Ve	1	262
Cat. 1,	T1	4	267		Vf	1	85
Cat. 1,	T1	1	79		Vs	1	267
Cat. 1,	T1	1	16		Vv	1	229
Cat. 1,	T2	1	262		Vdd	1	267
Cat. 1,	T2	1	21		Vss	1	20
Cat. 3, SB, T1, Va		1	85		Vtt	1	85
	Va	1	21	T5, Vb		1	296

## BUCKLES

Buckles of many different types have been described in the literature (see, for example, Calver and Bolton 1959: 221-222; Noel Hume 1979: 84-88; Smith 1965: 67, 115; Peterson 1968: 76, 230-231; Klinger and Wilder 1967: 20-22). In these sources, the following terms are variably applied to buckles of different size, shape, function, and construction: shoe, spur, belt, knee, hat, baldric, stock, and harness. Distinctions between these forms have been made on a highly subjective basis; both size and shape have been the most important criteria for determining types. Since distinctions such as these are less critical in order of interpretative importance than the determination of either date or nationality of use, little attempt has been made to objectively distinguish these forms. They may be ranked in size in an approximate manner as follows: large (shoe and belt), medium (stock and knee), and small (spur). All of these sizes are represented in the Fort Michilimackinac sample of 419 buckles, buckle parts, and fragments. Harness buckles have been identified and are briefly noted in Part 2 of Appendix B.

### Classification and Description:

The following attributes were recognized in the classification of buckles:

1. Form and articulation of buckle elements. Buckle elements include the frame, a hinge bar (either movable or cast as part of the frame), a hook (movable part which is attached to the hinge bar and which serves to permanently secure leather or



strap to buckle), and a tongue (prong which temporarily secures a loose strap end to the buckle). Each of these elements are not present on all buckles.

2. Shape of frame and movable elements.
3. Material.
4. Decoration, usually defined by molded or inset design elements.
5. Size, refers to frame length and width and hook width. Additional dimensions such as hook and tongue length are presented when applicable.

Four levels of taxonomic distinction are based on these attributes: (1) class--distinguished by differences in the means of attaching buckle to leather or strap; (2) series--distinguished by the form of different elements of attachment; (3) type--distinguished by a combination of decoration and attachment element shape; and (4) variety--distinguished by frame decoration and/or shape of attachment element.

The above formal distinctions apply to complete buckles. A second classification has been devised for the description of buckle frames. Series are distinguished by shape differences; types are distinguished by material differences; and varieties are distinguished by differences in size and decoration.

The following buckle descriptions are based on these two systems of classification. Information on distributional and comparative evidence is presented in the descriptive context where applicable.

Table 15 lists buckle feature associations. Buckle measurements are presented in the context of individual type descriptions. Category 1 buckle measurements are presented in Table 14. Refer to illustrations for detailed information on decoration.

### Class I Hook Attachment

All CI buckles have a movable hook element attached to a pin or hinge bar, as well as a movable tongue element which is attached to the same hinge bar at the center of the hook. The hook element permanently secures the leather or strap; the tongue element temporarily secures the loose strap end while in use. All CI specimens are curved between the ends. CI series are defined by different forms of these elements for attachment.

#### Series A Single Prong Hook with Single Tongue

Series A specimens exhibit a hook which bears 1 prong on its distal end; this prong projects toward the inside of the buckle frame and hook.

Type 1 Oval (or rectangular with rounded corners); iron frame; iron hook, tongue, and hinge bar

Variety a Undecorated.

Figure 19 A

1 specimen

Dimensions (1 specimen): frame length, 42.3; frame width, 32.8; maximum hook width, 29.7.

Type 2 Rectangular brass frame, brass hook, iron tongue and hinge bar

Variety a Decorated.

Figure 19 B

1 specimen

Dimensions (1 specimen): frame length, 38.4; frame width, 30.5; maximum hook width, 36.8.

Type 3 Rectangular iron frame; iron hook, tongue, and hinge bar

Variety a Undecorated.

Figure 19 C

1 specimen

Dimensions (1 specimen): frame length, 47.1; frame width, 31.5; maximum hook width, 27.0.

Type 4 Rectangular brass frame, brass hook and tongue, iron hinge bar

Variety a Undecorated.

Figure 19 D

1 specimen

Dimensions (1 specimen): frame length, 40.0E; frame width, 28.1; maximum hook width, 28.1.

Series A, Category 1

This category consists of hook elements used with CI, SA buckles. Varieties are distinguished by hook shape and material and are presented in a tabular format (Table 11 ).

TABLE 11 Buckle Descriptions: Class I, Series A, Category 1, Varieties a through g

Taxonomic Designation	Frequency	Maximum Hook Width	Figure	Comments
CI, SA, Cat. 1, Va	4	38.0E, 38.5, 36.4, 42.0E	19 E	Iron, convex hook end, concave hook sides.
Vb	2	26.4, 31.8	19 F	Iron, flat hook end, slightly concave hook sides.
Vc	4	43.5, 42.9E, 34.0	19 G	Iron, flat hook end, concave, hook sides
Vd	1	40.8	19 H	Iron, flat hook end, slightly concave hook sides.
Ve	1	31.4	19 I	Brass, flat hook end, concave hook sides.
Vf	4	23.0, 29.2, 26.8	19 J	Iron, flat hook end, slightly concave hook sides.
Vg	2	27.4, 29.0E	19 K	Iron, flat hook end, slightly concave hook sides.

Series B Double Prong Hook and Double Prong Tongue

Type 1 Rectangular, brass frame; iron hook, tongue, and hinge bar

Variety a Decorated.

Figure 19 L

1 specimen

Dimensions (1 specimen): frame length, 53.1; frame width, 42.6; maximum hook width, 33.8.

Type 2 Rectangular brass frame; iron hook, tongue, and hinge bar

Variety a Decorated.

Figure 19 M

1 specimen

Dimensions (1 specimen): frame length, 45.0E; frame width, 40.0; maximum hook width, 34.5E.

Type 3 Rectangular brass frame with rounded corners; iron hook, tongue, and hinge bar

Variety a Decorated.

Figure 19 N

1 specimen

Dimensions (1 specimen): frame length, 57.2; frame width, 47.1; maximum hook width, 39.2E.

Type 4 Rectangular iron frame with rounded corners; iron hook and hinge bar, tongue missing

Variety a Undecorated.

Figure 19 O

1 specimen

Dimensions (1 specimen): frame length, 51.3; frame width, 42.0; maximum hook width, 36.8.

Type 5 Rectangular brass frame with rounded corners; iron hook and hinge bar, tongue missing

Variety a Undecorated.

Figure 19 P

1 specimen

Dimensions (1 specimen): frame length, 64.0E, frame width, 49.5; maximum hook width, 39.6.

Series B, Category 1

SB, Cat. 1 consists of hook elements attributable to CI, SB buckles.  
SB, Cat. 1 varieties are presented in a tabular format (Table 12 ).

TABLE 12 Buckle Descriptions: Class I, Series B, Category 1, Varieties a through l

Taxonomic Designation	Frequency	Maximum Hook Width	Figure	Comments
CI, SB, Cat. 1, Va	8	41.6 (average)	19 Q-R	1 brass, 7 iron specimens; convex hook end, and concave sides.
Vb	2	35.4	19 S	Iron, convex hook end, concave sides
Vc	2	34.5E	19 T	Iron, convex hook end, concave sides
Vd	1	42.3	19 U	Iron, nearly flat hook end, concave sides
Ve	2	40.7	19 V	Iron, flat hook end, concave sides
Vf	11	41.2 (average)	19 W	Iron, flat hook end, concave sides
Vg	9	40.9 (average)	19 X	Iron, flat hook end, slightly convex sides
Vh	1	45.6	19 Y	Iron, flat hook end, slightly convex sides
Vi	2	42.4, 43.4	19 Z	Iron, flat hook end, concave sides
Vj	1	37.8	19 AA	Iron, flat hook end, flat sides
Vk	1	37.9	20 A	Iron, flat hook end, slightly convex sides
Vl	1	34.5	20 B	Iron, flat hook end, slightly convex sides

Series B, Category 2

This category consists of 20 fragmentary CI, SB buckle elements which can neither be assigned to CI, SB types nor to CI, SB, Cat. 1 varieties. See Figures 20 C-F for examples.

Discussion: Class I, Series A and Class I, Series B

CI, SA and CI, SB buckles were combined on one distribution map for interpretative purposes. The majority of these specimens were found in one area of concentration south of the 220 grid line. This area includes both the SW and SSW rowhouse units and the surrounding garden areas. Several specimens were found in the area of the French guard-house (F. 60) and in the NNW rowhouse unit. Specimens were absent in the Church and Priest's house area, in the NW rowhouse unit, and in British military structures. Feature associations (Table 15 ) support this distributional evidence; therefore, a broad date range of between 1740 and 1780 is suggested. Both stock, belt, and probably knee buckles are represented in this sample. Military usage is not indicated by the distributional evidence; however, it cannot totally be discounted.

Series C Flanged (or Winged) Hook, Single Prong Tongue

CI, SC buckles consist of specimens which have flanged hooks.

Type 1 Rectangular iron frame with rounded corners; iron hook, tongue, and hinge bar

Variety a Undecorated.

Figure 20 G

1 specimen

Dimensions (1 specimen): frame length, 27.0; frame width, 24.8; maximum hook width, 18.3.

Variety b Undecorated.

Figure 20 H

1 specimen

Dimensions (1 specimen): frame length, 27.8; frame width, 22.5; maximum hook width, 16.5.

This specimen varies slightly from CI, SC, T1, Va in hook shape.



Variety c Undecorated.

Figure 20 I

2 specimens

Dimensions (1 specimen): frame length, 26.6; frame width, 23.0; maximum hook width, 17.5E.

This specimen's hook element has a central, heart-shaped hole.

Type 2 Rectangular brass frame with rounded corners; brass hook and tongueVariety a Decorated.

Figure 20 J

1 specimen

Dimensions (1 specimen): frame length, 25.4; frame width, 20.4; maximum hook width, 13.5.

The hinge bar on this specimen has been replaced with a brass straight pin. The tongue element is missing.

Variety b Undecorated.

Figure 20 K

1 specimen

Dimensions (1 specimen): frame length, 25.0; frame width, 18.0; maximum hook width, 12.0.

This specimen exhibits an iron hinge bar.

Type 3 Rectangular brass frame with rounded corners; brass hook and hinge bar, iron tongueVariety a Decorated.

Figure 20 L

1 specimen

Dimensions (1 specimen): frame length, 23.9; frame width, 19.0; maximum hook width, 10.0.

Type 4 Rectangular brass frame with rounded corners; iron hook, tongue, and hinge barVariety a Undecorated.

Figure 20 M

1 specimen

Dimensions (1 specimen): frame length, 28.0; frame width, 24.0; maximum hook width, 14.8E.

Variety b Decorated.

Figure 20 N

1 specimen

Dimensions (1 specimen): frame length, 44.6; frame width, 37.3; maximum hook width, 14.8E.

Variety c Decorated.

Figure 20 O

1 specimen

Dimensions (1 specimen): frame length, 47.2; frame width, 32.9.

Type 5 Rectangular pewter frame with rounded corners; pewter hook, iron tongue and hinge bar

Variety a Decorated.

Figure 20 P

1 specimen

Dimensions (1 specimen): frame length, 22.6; frame width, 19.8.

Type 6 Rectangular iron frame; iron hook, tongue, and hinge bar

Variety a Undecorated.

Figure 20 Q-T

2 specimens

Dimensions (1 specimen): frame length, 48.0; frame width, 33.2; maximum hook width, 19.0E.

Variety b Undecorated.

Figure 20 R

1 specimen

Dimensions (1 specimen): frame length, 28.4E; frame width, 21.6; maximum hook width, 13.2.

This specimen is smaller than either CI, SC, T6, Va specimens and differs slightly in hook-end shape.

Variety c Undecorated.

Figure 20 S

1 specimen

Dimensions (1 specimen): frame length, 25.9; frame width, 19.1; maximum hook width, 12.3.

This specimen bears a heart-shaped hole in the hook center.

Type 7 Rectangular brass frame, brass hook and tongue, iron hinge bar

Variety a Decorated.

Figure 20 U

1 specimen

Dimensions (1 specimen): frame length, 26.9; frame width, 20.9; maximum hook width, 14.0.

Variety b Decorated.

Figure 20 V

1 specimen

Dimensions (1 specimen): frame length, 37.3; frame width, 26.0; maximum hook width, 19.0.

Type 8 Rectangular brass frame, brass hook, iron hinge bar and tongue

Variety a Undecorated.

Figure 20 W

1 specimen

Dimensions (1 specimen): frame length, 24.8; frame width, 19.1; maximum hook width, 14.3.

Type 9 Rectangular pewter frame with rounded corners, pewter hook, iron tongue and hinge bar

Variety a Decorated.

Figure 20 X

1 specimen

Dimensions (1 specimen): frame length, 24.1; frame width, 18.2; maximum hook width.

Compare with CI, SC, T5, Va.

Type 10 Rectangular brass frame; iron tongue, hook, and hinge bar

Variety a Decorated.

Figure 20 Y

1 specimen

Dimensions (1 specimen): frame length, 23.3E, frame width, 29.6; maximum hook width.

Series C, Category 1

This category consists of CI, SC hooks and tongue elements. Varieties are distinguished on the basis of material and shape.

Variety a Brass hook, iron tongue

Figure 20 Z

6 specimens

Dimensions (6 specimens): maximum hook width, 13.3 (average).

1 specimen bears an impressed mark--RP.

Variety b Brass hook, iron tongue.

Figure 20 AA

1 specimen

Dimensions (1 specimen): maximum hook width, 20.6.

Variety c Iron hook and tongue, heart-shaped hole in hook center.

Figure 20 BB

1 specimen

Dimensions (1 specimen): maximum hook width, 17.3.

Variety d Iron hook and tongue, heart-shaped hole in hook center.

Figure 20 CC

7 specimens

Dimensions (7 specimens): maximum hook width, 18.1 (average).

Variety e Iron hook and tongue.

Figure 20 DD

4 specimens

Dimensions (1 specimen): maximum hook width, 13.3.

Variety f Iron hook.

Figure 20 EE

6 specimens

Dimensions (1 specimen): maximum hook width, 17.7.

Series D Flanged or Winged Hook, Double-Prong Tongue

Type 1 Rectangular brass frame; iron tongue, hook, and hinge bar (hinge crosses longitudinal axis of frame)

Variety a Undecorated.

Figure 21 A

1 specimen

Dimensions (1 specimen): frame length, 38.0; frame width, 30.6; maximum hook width, 18.8.

Type 2 Rectangular brass frame; iron hook, tongue, and hinge barVariety a Decorated.

Figure 21 B

1 specimen

Dimensions (1 specimen): frame length, 38.0; frame width, 30.6; maximum hook width, 16.1.

Variety b Decorated.

Figure 21 C

1 specimen

Dimensions (1 specimen): frame length, 29.6; frame width, 25.7.

Variety c Undecorated.

Figure 21 D

1 specimen

Dimensions (1 specimen): frame length, 28.7; frame width, 24.4.

Type 3 Rectangular iron frame with rounded corners; iron hook, tongue, and hinge barVariety a Undecorated.

Figure 21 E

1 specimen

Dimensions (1 specimen): frame length, 27.3; frame width, 22.6.

Series D, Category 1

SD, Cat. 1 consists of hook and tongue fragments which are used with Series D buckles. Varieties are distinguished on the basis of shape.

Variety a Heart-shaped hole in hook center.

Figure 21 F

3 specimens

Dimensions (1 specimen): maximum hook width, 14.6.

Variety b Refer to illustration for shape.

Figure 21 G

3 specimens

Dimensions (1 specimen): maximum hook width, 17.1.

Variety c Refer to illustration for shape.

Figure 21 H

2 specimens

Dimensions (1 specimen): maximum hook width, 20.8.

Variety d Refer to illustration for shape.

Figure 21 I

1 specimen

Dimensions (1 specimen): maximum hook width, 13.6.

#### Discussion: Class I, Series C and Class I, Series D

All CI, SC and CI, SD specimens were combined on a single distribution map for interpretative purposes. This combined distribution contrasts with that noted for CI, SA and CI, SB specimens. The major area of concentration is along both sides of the north wall of the earliest French stockade (F. 5). This area includes the NW rowhouse unit, the French guardhouse (F. 60), and the area between the north wall of Feature 5, and the NNW rowhouse unit. The Church area also produced a significant number of specimens. Feature associations (Table 14 ) support this distributional evidence in indicating a French period date of between 1715 and 1740 to 50. Areas of low frequency or absence were the NNW, SW and SSW rowhouse units, and British military structures. Thus, hook form, the basic formal difference between CI, SA and CI, SB, and CI, SC and CI, SD specimens, is highly significant when dating is attempted. CI, SA and CI, SB specimens (prong-hook form) have been dated between 1740 and 1780; CI, SC and CI, SD specimens (flange or winged hook form) appear to date between 1715 and 1740 to 50. There is also a correlation between hook form (prong or flanged) and buckle size. Prong-form hooks are very common on large buckle frames (such as, shoe, belt, or stock buckles); flange-form hooks are common on smaller buckle frames (such as, knee, spur, or hat buckles). The distributional differences between the two forms may thus also be related to functional differences.

#### Class I, Category 1

CI, Cat. 1 includes CI buckle elements which could not be assigned to a specific series. Three Cat. 1 types are noted; buckle frames with fragmentary hook and tongue elements; buckle hooks from either CI, SC or CI, SD specimens; and buckle hooks from either CI, SA or CI, SB specimens.

Type 1 Frames with fragmentary hook and tongue elements

Variety a Undecorated; rectangular brass frame; iron hook and tongue elements.

Figure 21 J, K

2 specimens

Dimensions (2 specimens): frame length, 50.1, 39.2; frame width, 43.2, 29.3.

Variety b Decorated brass; rectangular frame with rounded corners; iron hook and tongue elements.

Figure 21 L

1 specimen

Dimensions (1 specimen): frame length, 42.9; frame width, 34.4.

Variety c Undecorated; rectangular brass frame with rounded corners; iron hook and tongue.

Figure 21 M

1 specimen

Dimensions (1 specimen): frame length, 44.1; frame width, 34.1.

This specimen may be a fragmentary example of CI, SC, T1.

Type 2 Buckle hooks (CI, SC or CI, SD)

Variety a Brass.

Figure 21 N

2 specimens

Dimensions (1 specimen): maximum hook width, 13.6.

Variety b Pewter.

Figure 21 O

1 specimen

Dimensions (1 specimen): maximum hook width, 14.0.

Variety c Iron.

Figure 21 P

1 specimen

Dimensions (1 specimen): maximum hook width, 11.6.

Variety d Brass.

Figure 21 Q

3 specimens

Dimensions (1 specimen): maximum hook width, 22.3.

Variety e Iron.

Figure 21 R

4 specimens

Dimensions (1 specimen): maximum hook width, 21.3.

Variety f Iron.

Figure 21 S

1 specimen

Dimensions (1 specimen): maximum hook width, 29.3.

Type 3 Buckle hooks (CI, SA or CI, SB)

Figure 21 T-V

13 specimens (2 brass, 11 iron)

Class II Frame Bar AttachmentSeries A Hook Bar As Integral Part of Buckle Frame

Series A specimens consist of a solid frame with a bar or hinge element between buckle sides. Both the leather, or strap, and the tongue were attached to this center bar.

Type 1 D-shaped brass frame, ironVariety a Undecorated.

Figure 21 W

2 specimens

Dimensions (1 specimen): frame length, 37.9; frame width, 45.2.

Variety b Undecorated.

Figure 21 X

1 specimen

Dimensions (1 specimen): frame length, 30.4; frame width, 24.2.



Variety c Decorated; elongate D-shaped.

Figure 21 Y

7 specimens

Dimensions (1 specimen): frame length, 41.0; frame width, 75.7.

Discussion: Class II, Series A

CII, SA specimens are thought to be military stock or belt buckles which were in use during the Revolutionary War period. Similar specimens from both Fort Ligonier, Pa., and Valley Forge, Pa., are illustrated by Klinger and Wilder (1967: 20). Their context at Fort Michilimackinac is restricted to the SSW rowhouse unit and to the garden area south of this unit. On this basis, a date range of between 1760 and 1781 may be assigned to CII, SA buckles.

Series B Hook Bar Attachment

This unit of classification may be formally inconsistent with other CII series. CII, SB buckles consist of a 3-sided frame and a hook-hinge bar element between the frame ends. The hook-hinge bar element apparently secured both the permanent and the loose ends of a leather or cloth strap.

Type 1 Iron frame and hook-hinge bar

Variety a Undecorated.

Figure 21 Z

6 specimens

Dimensions (1 specimen): frame length, 15.1; frame width, 20.7.

Type 2 Brass frame and hook-hinge bar

Variety a Undecorated.

Figure 21 AA

3 specimens

Dimensions (1 specimen): frame length, 12.0; frame width, 18.3.

Type 3 Brass frame, iron hook-hinge bar

Variety a Decorated.

Figure 21 BB

1 specimen

Dimensions (1 specimen): frame length, 14.4; frame width, 19.6.

The hinge bar on this specimen has been replaced with a brass straight pin.

Class III    Frame Bar With Metal Strap Attachment

The single CIII specimen consists of a solid brass, elongated figure-8-shaped frame with an integral central bar. A brass tongue is attached to 1 side of the buckle frame, and a brass strap is bent around the center frame bar. This strap served, in effect, as an extension of the center bar as a means of permanently attaching buckle to leather.

Figure 21 CC

1 specimen

Dimensions (1 specimen):    Frame length, 31.6, frame width, 38.4.

Class IV    Rivet Attachment

Series A    Riveted Hook Element Attached to Frame

Type 1    Brass

Variety a    Undecorated.

Figure 21 DD

1 specimen

Dimensions (1 specimen):    maximum hook width, 44.0E.

This specimen consists of a hook element similar in form and frame articulation to hook elements characteristic of CI, SA, and CI, SB specimens. The hook element has 4 knobs or rivets which serve to permanently secure a leather strap.

Series B    Rivets Attached to Buckle Frame

Type 1    Brass

Variety a    Undecorated.

Figure 21 EE

1 specimen

Dimensions (1 specimen):    frame length, 31.1; frame width, 50.1.

This specimen represents half of a 2-part, hook-fastened buckle. Each half consists of 3 rivets for leather attachment on 1 end and a hook-like lip on the other end which fastened the 2 halves together.

**Category 1 Buckle Frames**

Cat. 1 consists of buckle frames and frame fragments. Hook and tongue elements are either missing or present but are too fragmentary for purposes of formal classification. Series are distinguished by different frame shapes. Types are distinguished by material, and varieties are distinguished by decoration. The resultant Cat. 1 classification is presented in Table 13. Table 13 also serves as a key to which the reader is referred for comparative data, since individual variety descriptions are not presented. Table 14 presents the frequency and measurements of Cat. 1 buckle specimens.

TABLE 13 Buckle Category 1: Classification and Illustration Key

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Series A--Rectangular Frame	Figure
Type 1--Iron	
Varieties a-i	22   A-I
Type 2--Brass	
Varieties a-rrr	22   J-DD
	23   A-KK
	24   A-K
Type 3--Pewter	
Varieties a-e	24   L-P
Series B--Rectangular Frame with Rounded Corners	
Type 1--Brass	
Varieties a-tt	24   Q-JJ
	25   A-Y
Type 2--Pewter	
Varieties a-j	25   Z-II
Type 3--Iron	
Varieties a-b	25   JJ-KK
Series C--Oval Frame	
Type 1--Brass	
Varieties a-f	26   A-F
Series D--D-Shaped Frame	
Type 1--Brass	
Variety a	26   G
Series E--Elongate-Rectangular	
Type 1--Brass	
Varieties a-c	26   H-J
Series F--Elongate-Oval	
Type 1--Brass	
Variety a	26   K

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TABLE 14 Buckle Category 1, Measurements

Taxonomic Designation		Frame Length	Frame Width	Taxonomic Designation		Frame Length	Frame Width
SA, T1, Va	3	52.0	45.0	SA, T2, Vjj	1		
Vb	2		42.0	Vkk	1		
Vc	2	36.0	28.0	Vll	1	45.0E	37.1
Vd	3	43.7	28.5	Vmm	1		
Ve	1	45.5	32.0	Vnn	1		35.3
Vf	1	47.8	31.0	Voo	15	59.0E	47.9
Vg	1	39.0	28.0	Vpp	1	30.4	25.5
Vh	1	26.9	19.1	Vqq	1		
Vi	1	36.4	27.5	Vrr	1	24.6	19.0
T2, Va	1	50.9	41.1	Vss	1	27.4	24.3
Vb	1	52.0	44.8	Vtt	1	27.0	20.0
Vc	4	53.0	45.7	Vuu	1	25.3	19.5
Vd	1	53.4	45.0	Vvv	3	56.0E	46.5
Ve	1	53.0	44.3E	Vww	4		49.0
Vf	1	50.6E	45.5	Vxx	1		48.5
Vg	2	25.8E		Vyy	1		
Vh	1	41.1	30.2	Vzz	1		46.1
Vi	1	43.4	33.0	Vaaa	1	52.4E	43.0
Vj	1	56.4	32.7	Vbbb	1		
Vk	1		29.5	Vccc	2		
Vl	14	44.9	38.6	Vddd	1		
Vm	1	36.0E	32.0	Veee	1		
Vn	1		30.2	Vfff	2		40.9
Vo	1		29.1	Vggg	1		
Vp	1			Vhhh	1		27.0
Vq	1	40.9		Viii	1		
Vr	1			Vjjj	1		
Vs	2			Vkkk	1	64.0E	
Vt	1			Vlll	1		31.0E
Vu	1		47.7	Vmmm	1		
Vv	1		44.9	Vnnn	1		
Vw	1			Vooo	1		
Vx	1		45.5	Vppp	1		
Vaa	2		45.5E	Vqqq	1		
Vbb	1			Vrrr	2		
Vcc	1			T3, Va	1		
Vdd	1		29.0	Vb	1		
Vee	1		28.7	Vc	1		
Vff	1			Vd	1		
Vgg	1		51.0	Ve	1	27.9	24.0
Vhh	1			SB, T1, Va	1	47.4	36.0
Vii	1			Vb	1	46.4	40.4

TABLE 14 (Cont.)

Taxonomic Designation		Frame Length	Frame Width	Taxonomic Designation		Frame Length	Frame Width
SB, T1, Vc	1	52.5	42.8	SB, T1, Vkk	1		
Vd	1	57.6	44.2	Vll	1	74.2E	
Ve	1	43.7	31.0	Vmm	11	43.6E	30.0
Vf	3	26.8	19.2	Vnn	1	49.6	
Vg	2	42.5	31.4	Voo	1		45.9E
Vh	1	25.0	19.7	Vpp	1	46.8E	37.6E
Vi	1	31.9	25.0	Vqq	1		
Vj	1	24.7	20.0	Vrr	1		26.5E
Vk	1	42.7	32.9	Vss	1		
Vl	1	42.8	31.4	Vtt	1		
Vm	1		46.0E	T2, Va	2		
Vn	1		47.0E	Vb	1		
Vo	1			Vc	2		
Vp	1		50.2	Vd	1		
Vq	1		40.7E	Ve	1		
Vr	1			Vf	2		
Vs	1		49.0E	Vg	1		21.1E
Vt	1			Vh	1		
Vu	2			Vi	1		
Vv	1			Vj	1	47.4	43.0
Vw	1			T3, Va	1	46.0	37.0
Vx	1			Vb	1	29.0	23.0
Vy	1			SC, T1, Va	2		
Vz	1			Vb	3		
Vaa	1		43.0E	Vc	1	39.0E	32.8E
Vbb	1			Vd	2	34.0E	32.8
Vcc	1			Ve	1	39.6	33.5
Vdd	1		46.1E	Vf	2	61.5	51.2E
Vee	1			SD, T1, Va	2	24.0	33.0
Vff	3			SE, T1, Va	1	27.7	32.0
Vgg	4			Vb	2	27.0	34.0
Vhh	1			Vc	1	30.4	35.0
Vii	1			SF, T1, Va	1	85.4	35.0
Vjj	1						

### Discussion: Category 1 Buckles

The following varieties were manufactured of white brass or white metal: SA, T2, Vq; SA, T2, Vpp; SA, T2, Vqq; SA, T2, Vrr; SB, T1, Vk; SB, T1, Vl; and SB, T1, Vm. Several varieties were made of silver plated brass (SB, T1, Va and SB, T1, Vu). Site distribution of SA and SB buckle frames was compared, and no significant differences were noted between the two. Buckle frames produced of different metals were also studied separately; again, no significant distributional differences were noted between iron, brass, and pewter specimens. A combined SA and SB distribution indicates that Cat. 1 buckle specimens were found frequently in the NNW, SW, and SSW rowhouse units, and in the garden areas adjacent to these units. The area along the north wall of the earliest French stockade (F. 5, and including the NW rowhouse unit) produced fewer specimens. SA and SB specimens were nearly absent from an area between the NW and SW rowhouse units and within the British soldiers' barracks (F. 3). These areas of distribution are duplicated by feature associations (Table 15 ). This evidence supports a date range of between 1715 and 1781 for Cat. 1 specimens, although specimens were more frequent in post 1735 to 1740 contexts.

### Discussion:

Buckle descriptions above have been presented as briefly as possible in the context of a formally structured taxonomy. Only the major classificatory attributes have been described in detail. Secondary descriptive attributes have either been omitted or are defined very briefly. The limited comparative evidence available has not been used for interpretative purposes.

Several important observations have been made with respect to buckle dating and use. The form of buckle hook and tongue elements and buckle size appear to be very important attributes for dating purposes. Large buckle frames correlate with Class I, Series A and Class II, Series B hook and tongue element forms. Smaller buckle frames correlate with Class I, Series C and Class I, Series D hook and tongue element forms. Distributional differences between these two have been explained by a combination of chronological and functional factors. Class I,

Series A and Class I, Series B buckles appear later at the site (ca. 1740-1780); Class I, Series C and Class I, Series D buckles appear earlier at the site (ca. 1715 to 1740 or to 1750). This correlation between frame size and hook form and tentative dating is not supported, however, by the interpretation of Category 1 buckle specimens. Category 1 specimens (including both small and large size buckle frames) appear to date throughout the period of site occupation. This ambiguity cannot be explained on the basis of the small sample of complete specimens formally described.



Figure 19 Buckles

Figure Designation	Taxonomic Designation		Catalog Number, MS <sup>2</sup>
A	CI, SA,	T1, Va	2561
B		T2, Va	840
C		T3, Va	2335
D		T4, Va	1954
E	CI, SA, Cat. 1,	Va	3331
F		Vb	379
G		Vc	217
H		Vd	2869
I		Ve	1136
J		Vf	1
K		Vg	2233
L	CI, SB,	T1, Va	1
M		T2, Va	2977
N		T3, Va	2512
O		T4, Va	2468
P		T5, Va	496
Q	CI, SB, Cat. 1,	Va	639
R		Va	1929
S		Vb	1
T		Vc	1981
U		Vd	1465
V		Ve	2099
W		Vf	1083
X		Vg	1663
Y		Vh	661
Z		Vi	1
AA		Vj	2052

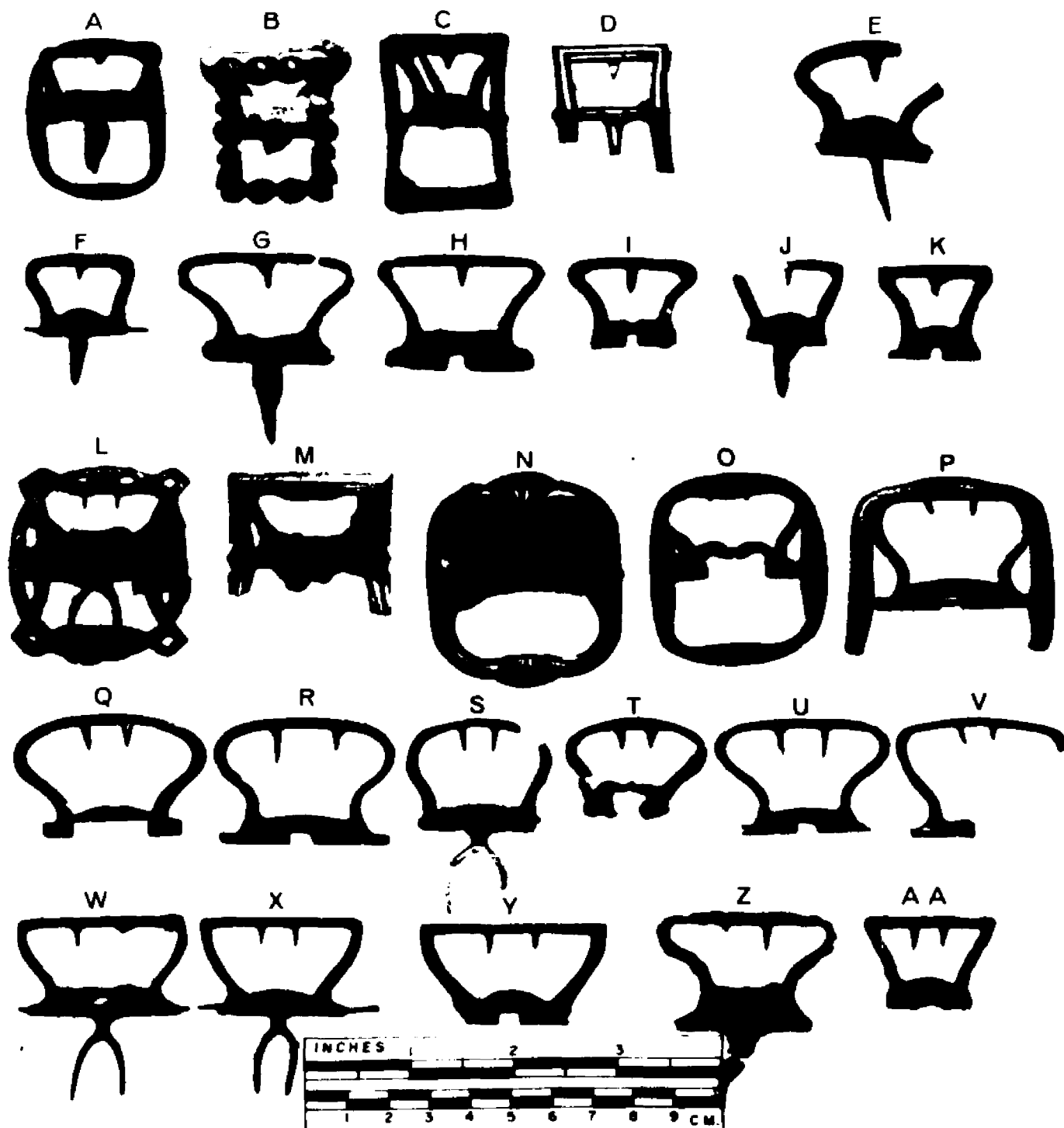


Figure 20 Buckles

Figure Designation	Taxonomic Designation		Catalog Number, MS <sup>2</sup>
A	CI, SB, Cat. 1,	Vk	2064
B		Vl	3448
C	Cat. 2		618
D	Cat. 2		2130
E	Cat. 2		3298
F	Cat. 2		1
G	CI, SC,	T1, Va	1
H		Vb	1460
I		Vc	871
J		T2, Va	1597
K		Vb	1352
L		T3, Va	972
M		T4, Va	107
N		Vb	1550
O		Vc	795
P		T5, Va	2369
Q		T6, Va	1416
R		Vb	1
S		Vc	1235
T		T6, Va	812
U		T7, Va	657
V		Vb	1648
W		T8, Va	1243
X		T9, Va	1482
Y		T10, Va	2337
Z	CI, SC, Cat. 1,	Va	1598
AA		Vb	1
BB		Vc	2259
CC		Vd	1019
DD		Ve	1910
EE		Vf	695

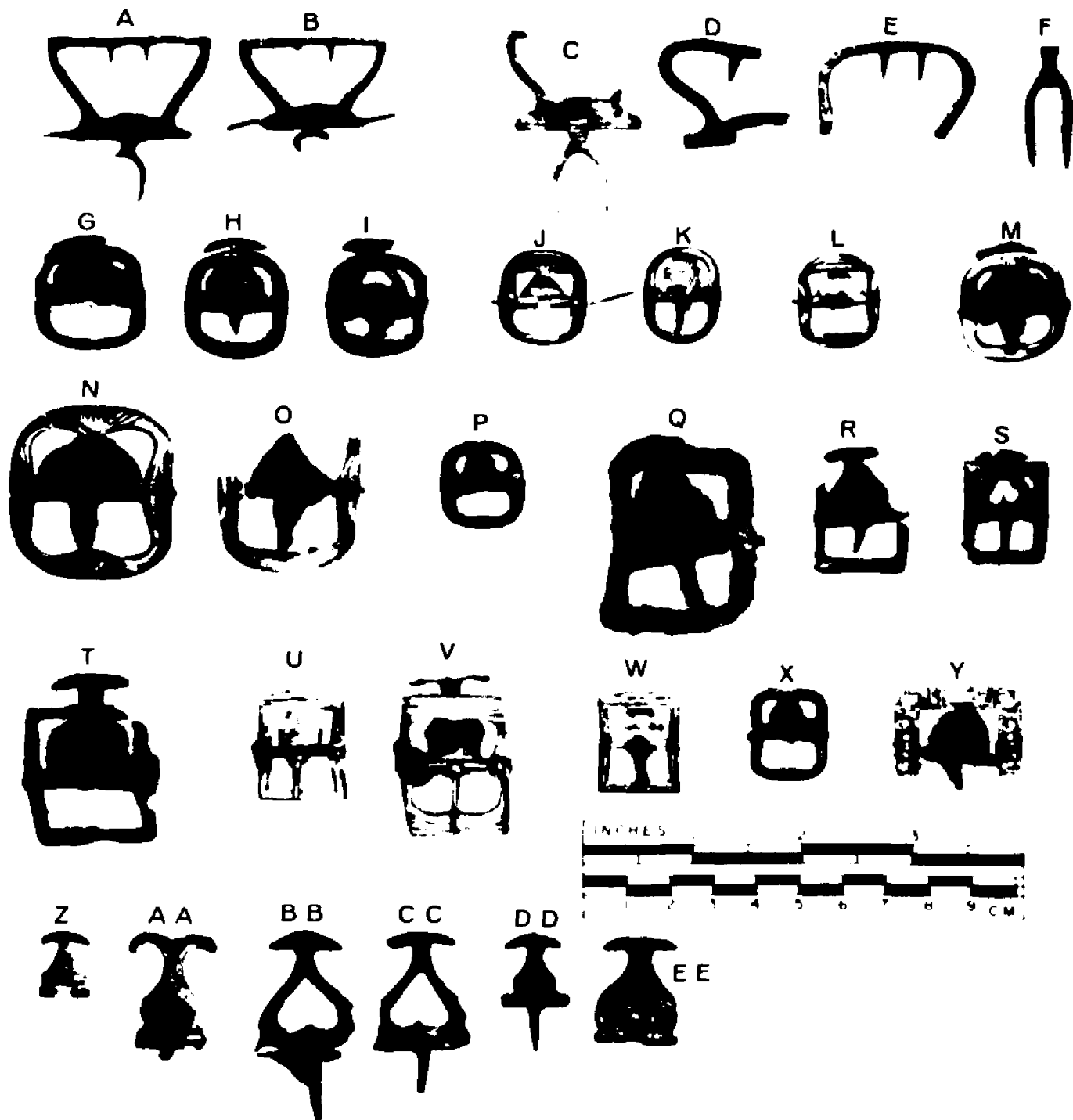


Figure 21 Buckles

Figure Designation	Taxonomic Designation		Catalog Number, MS <sup>2</sup>
A	CI, SD,	T1, Va	819
B		T2, Va	1003
C		Vb	2073
D		Vc	2994
E		T3, Va	972
F	CI, SD, Cat. 1,	Va	1
G		Vb	850
H		Vc	147
I		Vd	807
J		Cat. 1, T1, Va	1
K		Va	286
L		Vb	1
M		Vc	1400
N	CI, Cat. 1, T2,	Va	3116
O		Vb	296
P		Vc	1
Q		Vd	1787
R		Ve	2215
S		Vf	3458
T		T3	2520
U		T3	589
V		T3	1
W	CII, SA,	T1, Va	2670
X		Vb	170
Y		Vc	1433
Z	SB,	T1, Va	2371
AA		T2, Va	284
BB		T3, Va	1
CC	CIII		2438
DD	CIV, SA,	T1, Va	46
EE	SB,	T1, Va	2441

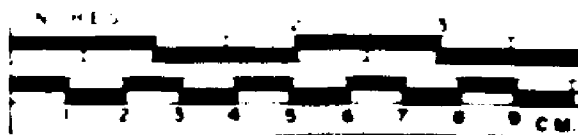
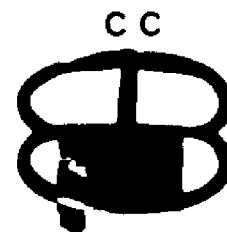
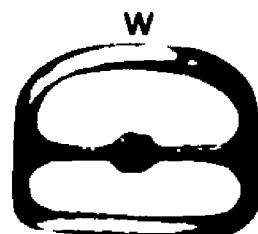
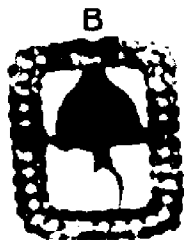
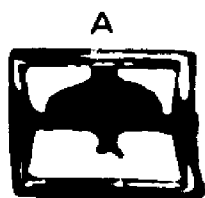


Figure 22 Buckles

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	SA, T1, Va	2483
B	Vb	2864
C	Vc	1
D	Vd	2974
E	Ve	1
F	Vf	694
G	Vg	695
H	Vh	1077
I	Vi	1
J	T2, Va	1
K	Vb	1923
L	Vc	1
M	Vd	2038
N	Ve	2838
O	Vf	2904
P	Vg	2553 1399
Q	Vh	1019
R	Vi	1152
S	Vj	2050
T	Vk	3246
U	Vl	532
V	Vl	2669
W	Vm	137
X	Vn	1026
Y	Vo	143
Z	Vp	2914
AA	Vq	1451
BB	Vr	1025
CC	Vs	1882
DD	Vt	2790

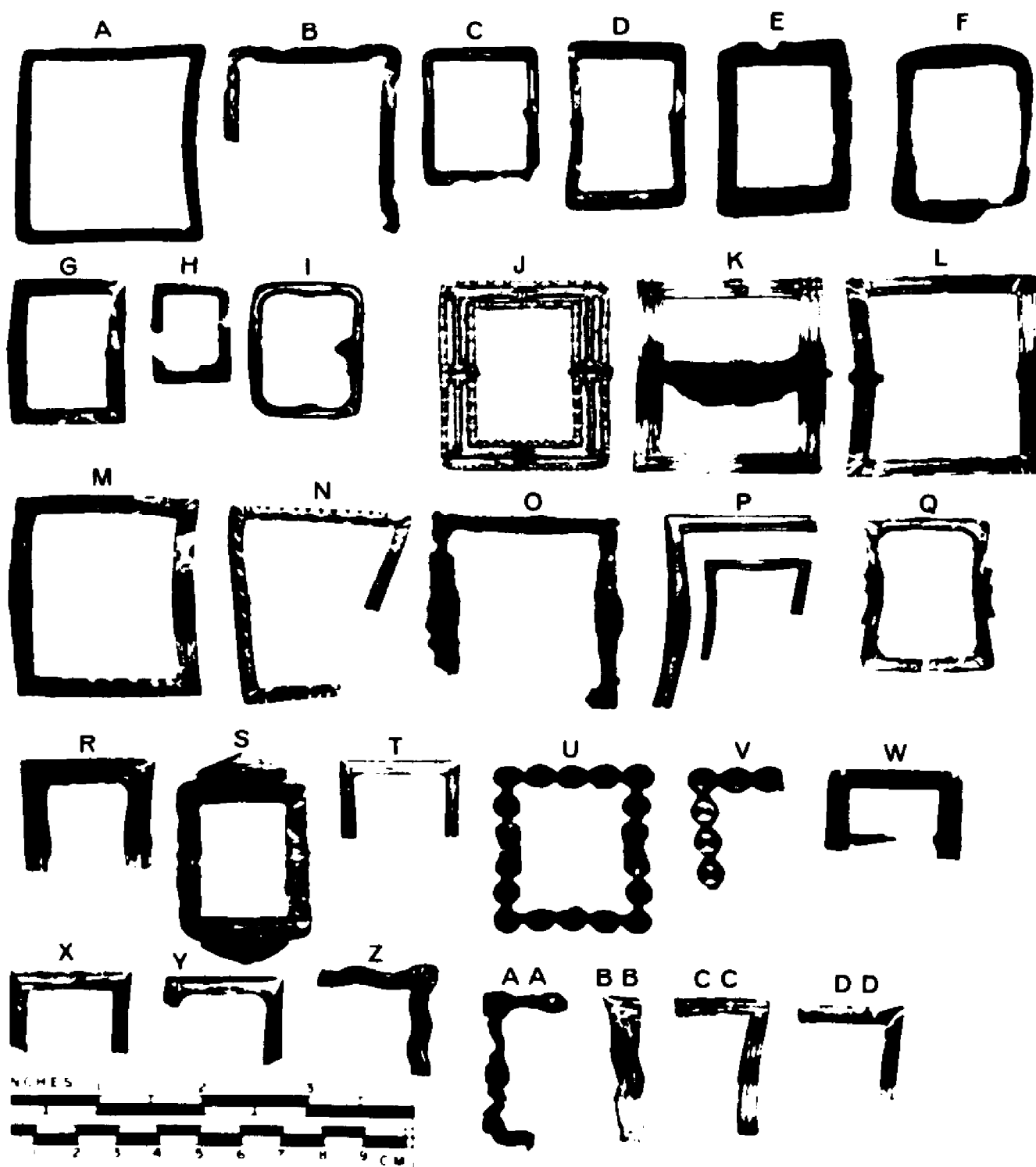




Figure 23 Buckles

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	SA, T2, Vu	2064
B	Vv	2472
C	Vw	2324
D	Vx	2731
E	Vaa	2078
F	Vbb	3302
G	Vcc	2668
H	Vdd	2337
I	Vee	1501
J	Vff	3123
K	Vgg	2268
L	Vhh	2022
M	Vii	369
N	Vjj	2411
O	Vkk	343
P	Vll	970
Q	Vmm	1348
R	Vnn	554
S	Voo	1545
T	Vpp	2830
U	Vqq	1684
V	Vrr	1208
W	Vss	2606
X	Vtt	2474
Y	Vuu	1961
Z	Vvv	1440
AA	Vww	2855
BB	Vxx	1947
CC	Vyy	2029
DD	Vzz	1390
EE	Vaaa	2857
FF	Vbbb	1113
GG	Vccc	2642
HH	Vddd	2536
II	Veee	1416
JJ	Vfff	2069
KK	Vggg	692

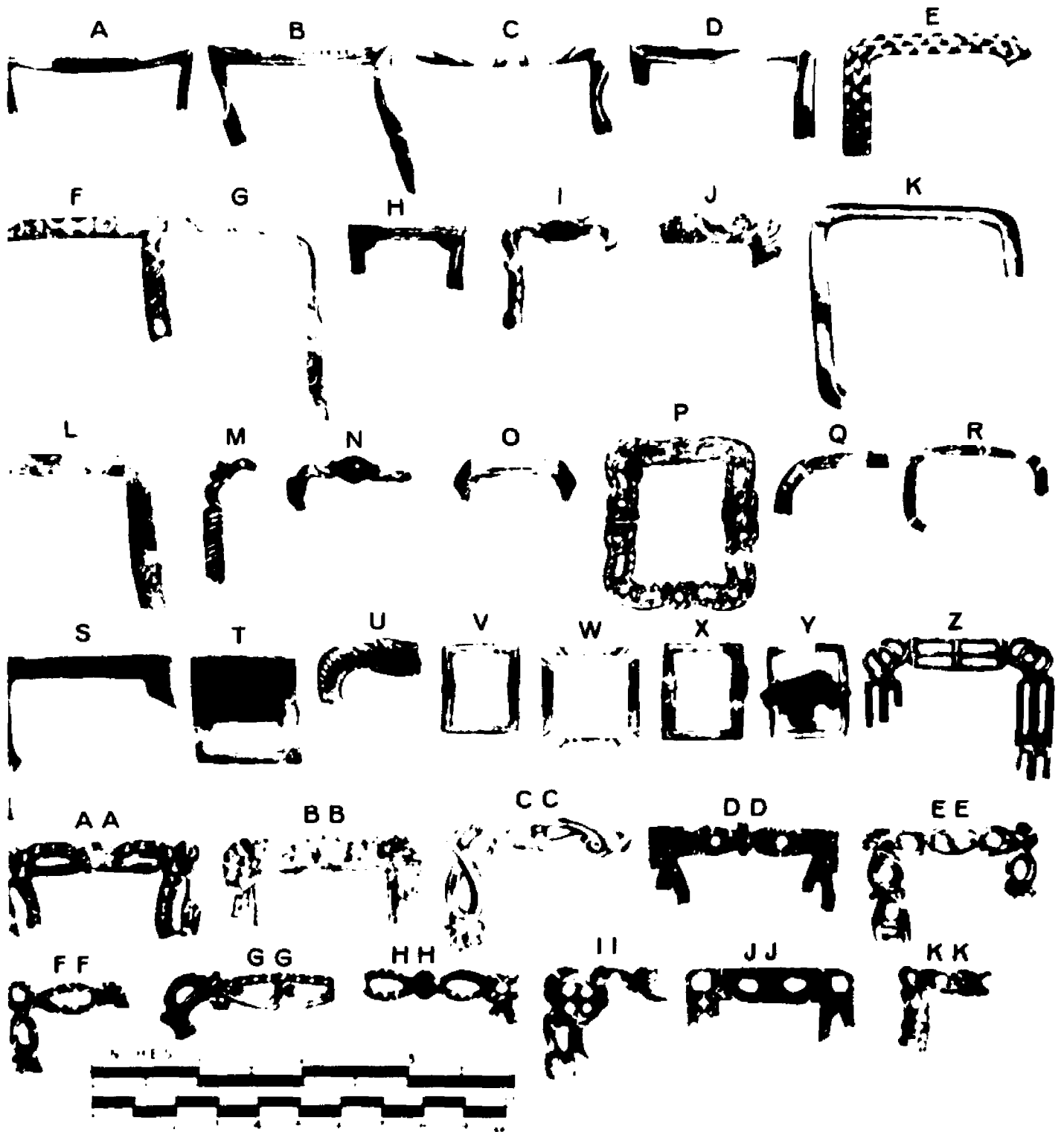


Figure 24 Buckles

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	SA, T2, Vhhh	706
B	Viii	34
C	Vjjj	3123
D	Vkkk	1223
E	Vlll	171
F	Vmmm	555
G	Vnnn	592
H	Vooo	2247
I	Vppp	1658
J	Vqqq	623
K	Vrrr	1640
L	T3, Va	1
M	Vb	1776
N	Vc	2844
O	Vd	1
P	Ve	1606
Q	SB, T1, Va	1154
R	Vb	1
S	Vc	2536
T	Vd	3107
U	Ve	1531
V	Vf	1969
W	Vg	1680
X	Vh	2084
Y	Vi	3043
Z	Vj	1546
AA	Vk	2078
BB	Vl	1
CC	Vm	2916
DD	Vn	1466
EE	Vo	3466
FF	Vp	546
GG	Vq	1
HH	Vr	243
II	Vs	1442
JJ	Vt	1915

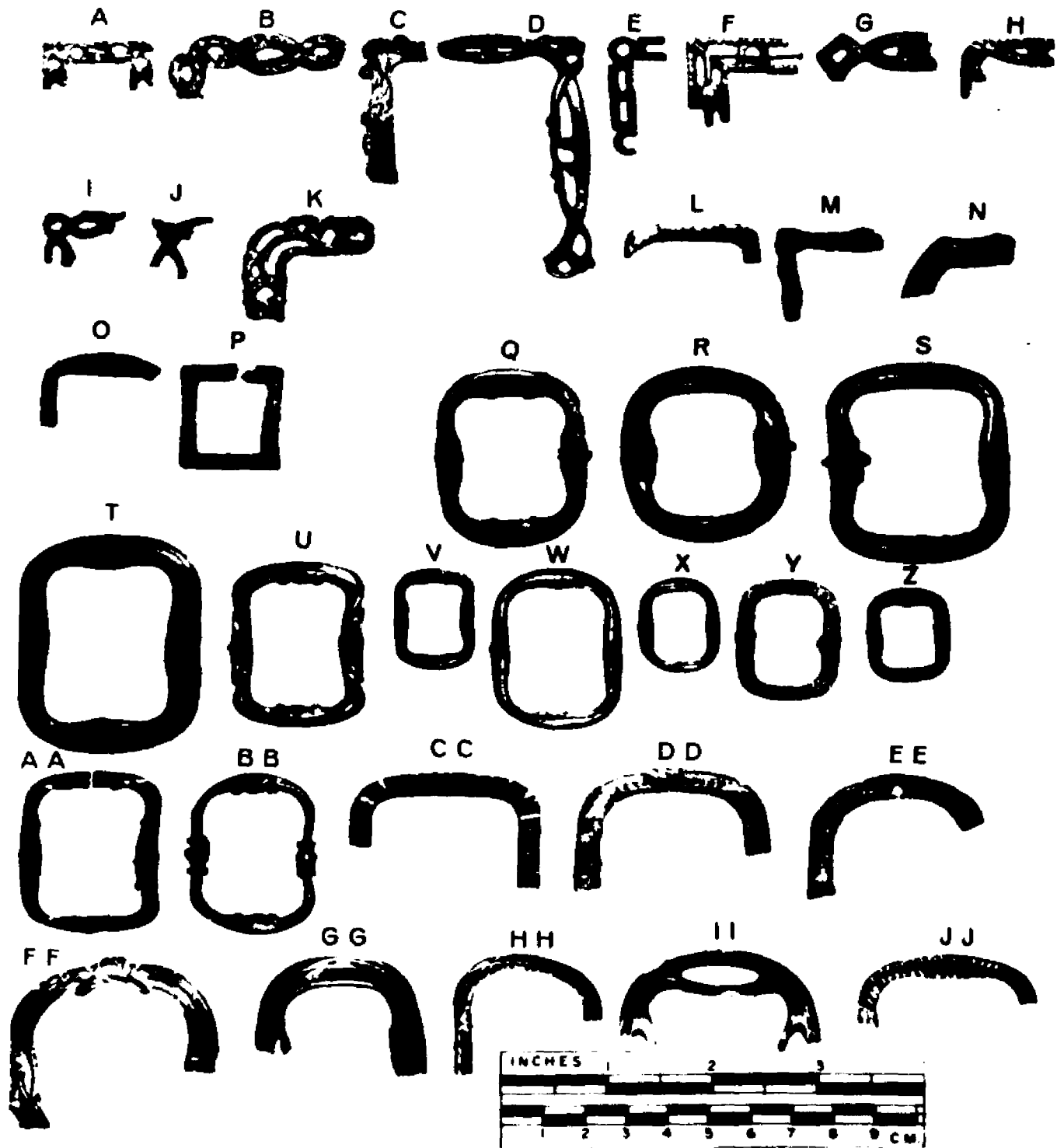


Figure 25 Buckles

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	SB, T1, Vu	2712
B	Vv	1036
C	Vw	2427
D	Vx	2945
E	Vy	2337
F	Vz	3269
G	Vaa	875
H	Vbb	3482
I	Vcc	2972
J	Vdd	2430
K	Vee	1
L	Vff	2348
M	Vgg	695
	Vhh	1507
	(not photographed)	
N	Vii	1771
O	Vjj	53
P	Vkk	2608
Q	Vll	2018
R	Vmm	1018
S	Vnn	2312
T	Voo	1908
U	Vpp	1
V	Vqq	2395
W	Vrr	2492
X	Vss	1
Y	Vtt	2970
Z	T2, Va	3045
AA	Vb	2313
BB	Vc	2828
CC	Vd	2865
DD	Ve	1706
EE	Vf	2671
FF	Vg	2305
GG	Vh	114
HH	Vi	2556
II	Vj	3431
JJ	T3, Va	1606
KK	Vb	117

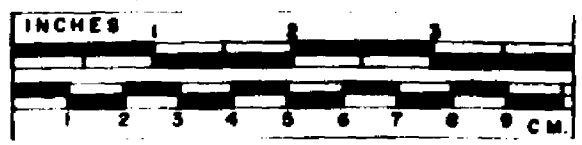
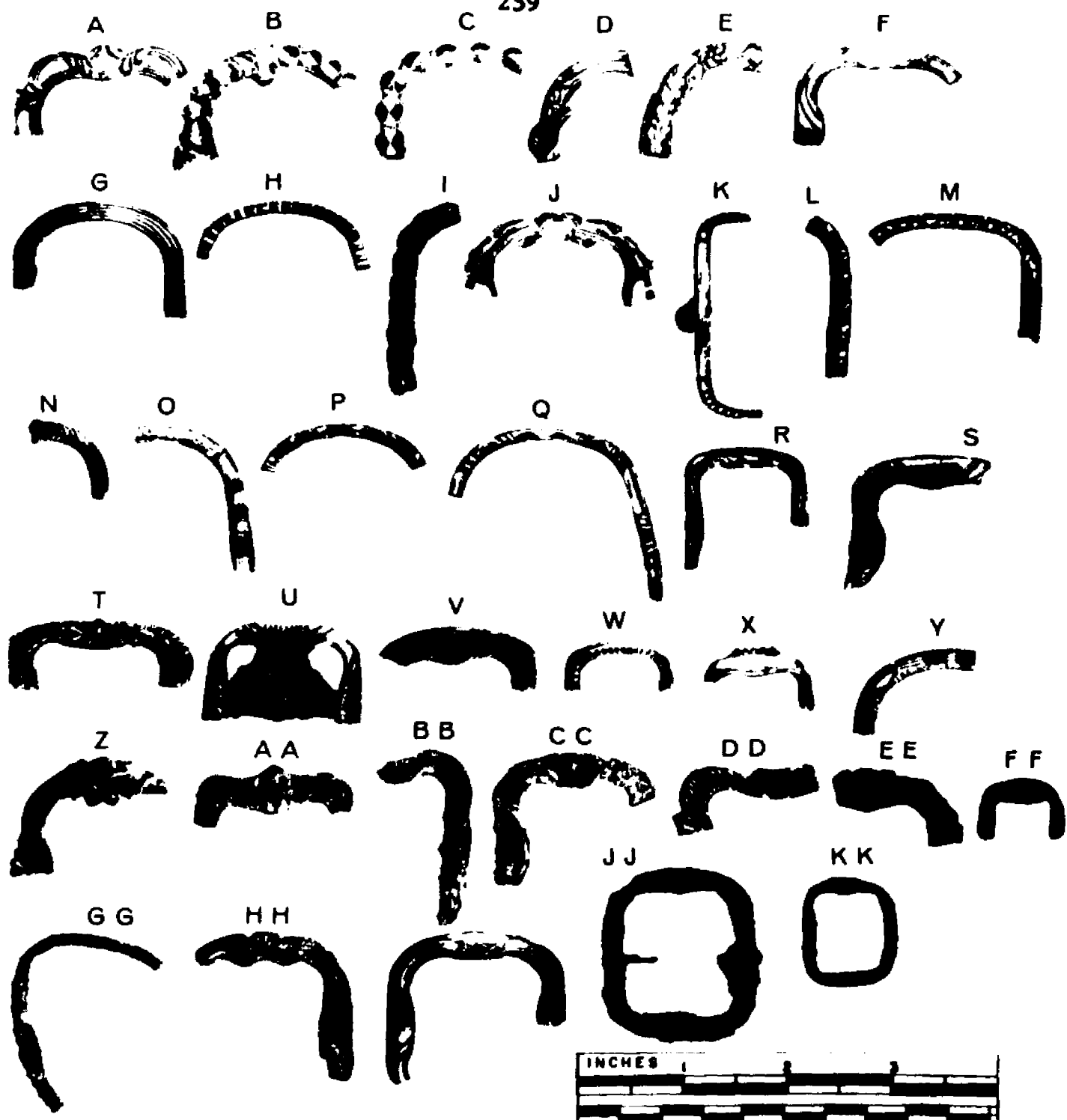


Figure 26      Buckles

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	SC, T1, Va	2034
B	Vb	1
C	Vc	1772
D	Vd	1
E	Ve	2144
F	Vf	1957
G	SD, T1, Va	1
H	SE, T1, Va	2513
I	Vb	1
J	Vc	2646
K	SF, T1, Va	2480

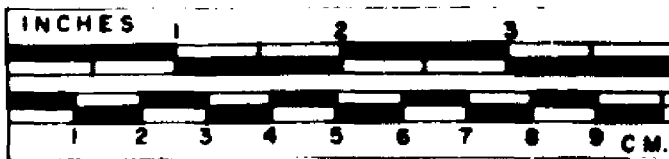
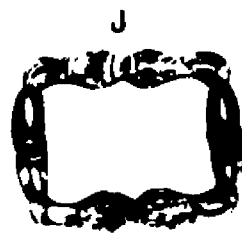
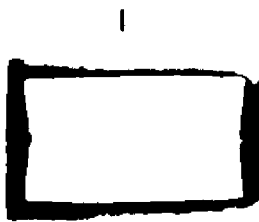
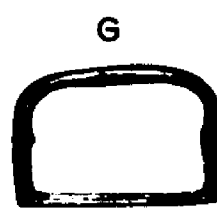
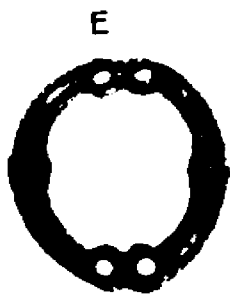
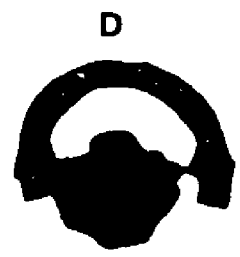
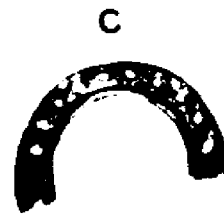
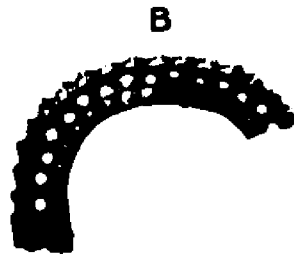
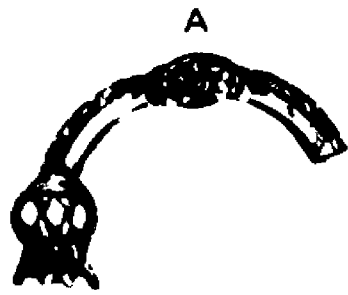




TABLE 15 Buckle Feature Associations

Taxonomic Designation			Frequency	Feature Number
CI,	SA,	T2, Va	1	118
	SD, Cat. 1,	Va	1	262
CI,	SB, Cat. 1,	Vd	1	87
		Vg	1	30
CI,	SB, Cat. 2		1	296
CI,	SB, Cat. 2		1	267
CI,	SB, Cat. 2		1	21
CI,	SB, Cat. 2		1	305
CI,	SC,	T4, Vb	1	131
		Vc	1	118
CI,	SC,	T6, Va	1	85
		Vc	1	72
CI,	SC,	T8, Va	1	132
	Cat. 1,	Vd	1	215
CI,	SD,	T2, Va	1	133
		Vb	1	215
CI,	Cat. 1, T2,	Ve	1	81
		Vf	1	348
CI,	Cat. 1, T3		1	267
CII,	SA,	T1, Va	1	262
		Vc	1	267
CIII			1	118
	SA,	T2, Vc	1	240
		Vd	1	248
		Vh	1	220
		Vj	1	296
		Vl	1	85
		Vmm	1	79
		Voo	1	
		Voo	1	236
		Vuu	1	209
		Vvv	1	83
		Vddd	1	267
		Veee	1	85
		Vfff	1	296
	SA,	T3, Vc	1	296
	SB,	T1, Vd	1	296
		Ve	1	134
		Vi	1	310
		Vj	1	88
		Vr	1	2
		Vdd	1	265
		Vll	1	296
		Vrr	1	267
	SF,	T1, Va	1	265

## CUFF LINKS

The 1959 through 1966 excavations at Fort Michilimackinac produced 143 cuff links and cuff link elements. The distinction between cuff links and buttons is based on size, consistency in eye shape, and style of decorative design. It is possible, when considering these distinctions, that several specimens identified as cuff links are, in fact, buttons. Several button types may also be cuff links.

The classification and descriptive terminology applied to cuff links is similar to that used for buttons. Classes are distinguished by differences in the number of cuff link elements present. Series distinctions are based on the means of production and combination of elements. Types are based on material and/or shape. Varieties are based on minor shape differences, color of glass insets, and decoration. The descriptive elements of a cuff link are the crown (or obverse face), back (or reverse face), eye, set, and link, which joins two cuff links.

The description of individual cuff link types is highly abbreviated since detailed illustrations accompany the text. Cuff link measurements are presented in the text descriptions. Cuff link feature associations and comparative evidence are presented in the conclusions. Feature associations are also summarized in Table 20 .

### Class I    Single Element Back and Eye; Single Element Crown

Series A    Back and Eye Cast as One Element and Brazed to Crown;  
                 Drilled Eye

Type 1    Round, slightly convex crown and back; brass

Variety a    Raised geometric design on crown.

Figure 27   A

1 specimen

Dimensions (1 specimen):    diameter, 11.9.

The crown on this specimen has hollow spaces which are a part of the decoration.

Variety b    Cluster of raised dots on crown center.

Figure 27   B

1 specimen

Dimensions (1 specimen):    diameter, 14.3.

Class II    Crown, Back, and Loop Are All Separate Elements

Series A    Back Cast Around Eye; Back Brazed to Crown

Type 1    Round, slightly convex copper crown; slightly convex white-brass back

Type 1, Varieties a through f are presented in a tabular format (Table 16 ) since they differ only in crown decoration. The backs on all varieties are white brass and exhibit circumferential striations which are evidence of lathe finishing. All specimens have copper or brass wire loops around which the back is cast. The crowns on all specimens are thin copper with raised or impressed designs.

TABLE 16 Cufflink Descriptions: Class II, Series A, Type 1, Varieties a through f

Taxonomic Designation	Frequency	Number Measured	Figure	Diameter	Crown Design
CII, SA, T1, Va	1	1	27 C	14.8	Geometric design
Vb	2	1	27 D	16.3	Floral design
Vc	1	1	27 E	16.4	Geometric design
Vd	1	1	27 F	15.3	Geometric design
Ve	1	1	27 G	16.2	Geometric design
Vf	1	1	27 H	15.3	Geometric design

Type 2 Round, flat brass crown; slightly convex white-brass back; brass loop

Variety a Plain.

Figure 27 I

1 specimen

Dimensions (1 specimen): diameter, 16.0.

Type 3 Square with rounded corners; slightly convex crown and back; brass

Variety a Floral decoration with four holes in back and crown; surface gilt.

Figure 27 J

1 specimen

Dimensions (1 specimen): diameter, 12.3.

Class III Eye Plus Single Element Crown-Back

Series A Crown Back Cast Around Eye

Type 1 Round, brass, crown back and eye; flat crown; convex back

Variety a Plain.

Figure 27 K

2 specimens

Dimensions (1 specimen): diameter, 16.7.

Type 2 Round, white brass crown back; brass eye; slightly convex crown; slightly concave back

Variety a Impressed circle decoration on crown center.

Figure 27 L

1 specimen

Dimensions (1 specimen): diameter, 17.1.

Series B Crown Back With Eye Brazed to Back

Type 1 Round, brass, crown back and eye; convex crown; concave back

Variety a Raised floral and geometric crown design; gilt.

Figure 27 M

1 specimen

Dimensions (1 specimen): diameter, 12.4.

Variety b    Raised floral crown design; gilt.

Figure 27   N

1 specimen

Dimensions (1 specimen):    13.6.

Variety c    Raised geometric crown design; gilt.

Figure 27   O

1 specimen

Dimensions (1 specimen):    diameter, 12.2.

Type 2    Oval, brass, crown back and eye; probably flat crown  
and back

Variety a    Raised geometric and floral crown design; gilt.

Figure 27   P

1 specimen

Dimensions (1 specimen):    maximum length, 17.2.

Type 3    Square with angular corners; silver (or white brass)  
crown back and eye; flat crown and back

Variety a    Plain; beveled crown edges.

Figure 27   Q

1 specimen

Dimensions (1 specimen):    diameter, 11.8.

Type 4    Octagonal, silver (or white brass) crown back; silver  
eye; flat crown and back

Variety a    Engraved letter T design on crown.

Figure 27   R

1 specimen

Dimensions (1 specimen):    maximum diameter, 18.2.

Series C    Crown Back With Eye Inset

Type 1    Round, ivory, crown back; brass eye; convex crown;  
flat back

Variety a    Plain.

Figure 27   S

2 specimens

Dimensions (2 specimens):    diameter, 12.3, 12.5.

This specimen has a cast-brass eye which appears to have  
been screwed into the cuff link back.

Class IV Back and Eye Cast as One Element to Receive Glass, Crown SetSeries A Cast Back With Drilled Eye, Inset Glass Crown

Type 1 Round, brass, back and eye, convex back; seven projections on back rim to secure cut glass set

Variety a Multifaceted clear glass set.

Figure 27 U

1 specimen

Dimensions (1 specimen): diameter, 12.3.

Type 2 Round, pewter, back and eye; convex back; many small projections around back rim; cut glass set

Variety a Clear, patterned, glass set.

Figure 27 T

1 specimen

Dimensions (1 specimen): diameter, 13.3.

Variety b Clear, cut, star-pattern glass set.

Figure 27 V

1 specimen

Dimensions (1 specimen): diameter, 11.9.

Variety c Green, faceted, cut glass set.

Figure 27 W

1 specimen

Dimensions (1 specimen): diameter, 12.4.

Variety d Green, star-pattern, cut glass set.

Figure 27 X

1 specimen

Dimensions (1 specimen): diameter, 12.2.

Variety e Blue, faceted, cut glass set.

Figure 28 A

1 specimen

Dimensions (1 specimen): diameter, 13.3.

Class IV, Series A, Type 2, Category 1

This category consists of 9 specimens which represent CIV, SA, T2 cuff link backs without sets and 14 individual glass sets.

Type 3 Round, brass back and eye; convex-concave back; large lip or rim between back and glass set

Variety a Clear, faceted, cut glass set.

Figure 28 B

3 specimens

Dimensions (3 specimens): diameter, 10.2, 11.5, 12.2.

Variety b Green, faceted, cut glass set.

Figure 28 C

1 specimen

Dimensions (1 specimen): diameter, 10.9.

Type 4 Round, brass back and eye; convex-flat back; small lip or rim between back and set

Variety a Engraved intaglio floral design on clear, glass-set bottom.

Figure 28 D

5 specimens

Dimensions (5 specimens): diameter, 13.0, 11.7, 11.7, 11.8, 11.8.

Seven additional CIV, SA, T4, Va cuff link sets are represented in the sample.

Variety b Blue, faceted, cut glass set.

Figure 28 E

1 specimen

Dimensions (1 specimen): diameter, 11.2.

Variety c Clear, faceted, cut glass set.

Figure 28 G

1 specimen

Dimensions (1 specimen): diameter, 11.2.

#### Class IV, Series A, Type 4, Category 1

This category consists of 3 specimens which represent CIV, SA, T4 cuff link backs.

Type 5 Round, brass back and eye; deeply cupped back with straight sides



Variety a Clear, cut glass set.

Figure 28 F

1 specimen

Dimensions (1 specimen): diameter, 10.8.

Variety b Clear, cut glass set.

Figure 28 H

1 specimen

Dimensions (1 specimen): diameter, 10.7.

One part of this cuff link has been lost and was replaced with a small, hawk bell.

Type 6 Round, brass back and eye; shallow, slightly convex back

Variety a Clear-glass set, with brown glass "brushed" design on set bottom.

Figure 28 I

1 specimen

Dimensions (1 specimen): diameter, 12.9.

Two additional sets from CIV, SA, T6, Va cuff links were found.

Variety b Clear-glass set, with milky-white glass "brushed" design on set surface.

Figure 28 J

1 specimen

Dimensions (1 specimen): diameter, 12.2.

Variety c Clear, faceted, cut glass set, with engraved intaglio design on glass set bottom.

Figure 28 K

1 specimen

Dimensions (1 specimen): diameter, 11.2.

Type 7 Oval, pewter back and eye; slightly convex back

Variety a Clear-glass set, engraved with branch and leaf design on set surface; yellow glass, stripe inset on surface.

Figure 28 L

1 specimen

Dimensions (1 specimen): maximum length, 13.8E.

Variety b Clear, faceted, cut glass set.

Figure 28 M

1 specimen

Dimensions (1 specimen): maximum length, 15.3.

Three CIV, SA, T7 sets and 1 back were also recovered.

Type 8 Oval, brass back and eye; slightly convex back

Variety a Opaque, red glass inset.

Figure 28 N

1 specimen

Dimensions (1 specimen): maximum length, 14.9.

Variety b Opaque, green glass inset.

Figure 28 O

1 specimen

Dimensions (1 specimen): maximum length, 14.9.

#### Class V Crown, Back, Eye, and Set Are Separate Elements

Series A Eye Clamped to Back, Back Brazed to Crown; Crown Contains Set

Only 1 CV, SA specimen has been recovered. The specimen is round with a clear glass inset, a ring-like crown element and a cupped back element. Metal identity is unknown.

Figure 28 P

1 specimen

Dimensions (1 specimen): diameter, 14.5.

#### Class VI Crown, Back, and Eye Are Single Element

Series A Cast Crown, Back, and Eye; Drilled Wedge-Shaped Eye

Type 1 Round, brass

All CVI, SA, T1 varieties are described in a tabular format (Table 17) since they differ only in crown design and minor shape attributes.

TABLE 17 Cuff Link Descriptions: Class VI, Series A, Type 1, Varieties a through r

Taxonomic Designation	Frequency	Number Measured	Figure	Diameter	Comments
CVI, SA, T1, Va	1	1	28 Q	14.8	Raised geometric design; flat crown and back
Vb	2	2	28 R	13.4, 14.8	Raised geometric design; convex crown, concave back
Vc	1	1	28 S	15.1	Raised geometric design; flat crown and back
Vd	2	2	28 T	16.2, 16.2	Impressed floral crown design; flat crown and back
Ve	1	1	28 U	15.0	Crown design of raised dots; convex crown, concave back
Vf	1	1	28 V	12.3	Raised crown design of King George and letters GEO DEI.G; flat crown and back
Vg	1	1	28 W	16.2	Raised crown design of John Wilkes and letters WILKES.AND.LIBERTY.NO.45; flat crown and back
Vh	1	1	28 X	11.5	Plain, flat crown; concave back
Vi	1	1	29 A	11.9	Raised crown design of Queen Anne, and letters ANNA D:G, flat crown and back
Vj	1	1	29 B	14.0	Raised floral crown design, flat crown and back

TABLE 17 (Cont.)

Taxonomic Designation	Frequency	Number Measured	Figure	Diameter	Comments
CVI, SA, Tl, Vk	2	2	29 C	14.3, 14.5	Raised floral pot crown design, flat crown and back
Vl	1	1	29 D	15.3	Raised geometric and floral crown design; flat crown and back
Vm	1	1	29 E	13.5	Raised crown design of 6, 5-pointed stars; flat crown and back
Vn	1	1	29 F	13.9	Raised floral crown design; convex crown and concave back
Vo	1	1	29 G	16.2	Raised floral and geometric crown design; flat crown and back
Vp	1	1	29 H	16.2	Raised pinwheel crown design; flat crown and back
Vq	1	1	29 I	15.5	Raised geometric crown design; flat crown and back
Vr	1	1	29 J	14.6	Plain crown with impressed border design; flat crown and back

Type 2    Octagonal, brass

All CVI, SA, T2 varieties are described in a tabular format (Table 18 ) since they differ only in design and minor shape attributes.

TABLE 18 Cuff Link Descriptions: Class VI, Series A, Type 2, Varieties a through f

Taxonomic Designation	Frequency	Number Measured	Figure	Diameter	Comments
CVI, SA, Tl, Va	1	1	29 K	13.2	Impressed geometric crown design; flat crown with lip, flat back
Vb	1	1	29 L	14.9	Raised geometric crown design; flat crown with lip, flat back
Vc	1	1	29 M	13.2	Raised floral design; flat crown with lip, flat back
Vd	1	1	29 N	15.1	Impressed geometric crown design; flat crown with lip, flat back
Ve	1	1	29 O	13.5	Raised floral crown design; flat crown with lip, flat back
Vf	2	2	29 P	13.9, 12.4	Raised geometric crown design; flat crown with lip, flat back

Type 3 Round, pewter

Variety a Raised, floral crown decoration; flat crown and back.

Figure 29 Q  
2 specimens

Dimensions (2 specimens): diameter, 14.1, 14.2.

Series B Cast Crown, Back, and Eye

The majority of CVI, SB specimens have mold seams on the back; eyes are not drilled.

Type 1 Round, pewter; eye attached directly to back

Variety a Raised, floral crown design; convex crown, flat back.

Figure 29 R  
1 specimen

Dimensions (1 specimen): diameter, 11.2.

Variety b Raised, geometric crown design; convex crown, flat back.

Figure 29 S  
1 specimen

Dimensions (1 specimen): diameter, 16.2E.

Variety c Raised, pinwheel, crown design; convex crown, flat back.

Figure 29 T  
1 specimen

Dimensions (1 specimen): diameter, 13.8.

Variety d Raised, Spanish coin design with letters WIVTRA QUE VNUM. WR 1756 as crown decoration; flat crown and back.

Figure 29 V  
1 specimen

Dimensions (1 specimen): diameter, 15.3.

Type 2 Round, pewter; eye attached to neck or shaft which is attached to back

All CVI, SB, T2 specimens are described in a tabular format (Table 19) since they differ only in crown design and minor shape attributes.

TABLE 19 Cuff Link Descriptions: Class VI, Series B, Type 2, Varieties a through g

Taxonomic Designation	Frequency	Number Measured	Figure	Diameter	Comments
CVI, SB, T2, Va	9	9	29 W	16.6 average	Same crown design as CVI, SB, T1, Vd; flat crown and back
Vb	1	1	29 X	15.5	Raised floral crown design; flat crown and back
Vc	1	1	29 Y	15.3	Raised geometric crown design; flat crown and back
Vd	1	1	29 Z	14.9	Raised floral crown design; flat crown and back
Ve	1	1	29 AA	13.7	Raised geometric crown design; convex crown, flat back
Vf	1	1	29 BB	14.8	Raised floral crown design; convex crown, flat back
Vg	1	1	29 CC	14.8	Crown design consists of raised dots at crown center; slightly convex crown, flat back



### Distributional and Associational Evidence:

Locations of the three major cuff link classes (Class II, Class IV, and Class VI) have been individually plotted on the same distribution map. The combined pattern of distribution indicates that cuff links were very frequent in the SW and SSW rowhouse units and in the garden area north and south of the SSW rowhouse unit. Cuff links were less frequent, but present, in the NW and NNW rowhouse units, in the British soldier's barracks (F. 3) and in the garden area north of the NNW rowhouse unit. Cuff links were nearly absent in the central area of the early French stockade (F. 5) and in the Church and Priest's house area. Important differences were also noted between the distribution of each of the major cuff link classes. Class II specimens are found more frequently in the NW rowhouse unit. Class IV specimens occur most frequently in the western portion of the SW and SSW rowhouse units and in the garden area between these units; Class IV specimens are present but less frequent in the area of the British soldier's barracks (F. 3) and in the French guardhouse (F. 60). Class VI, Series A cuff links were found most frequently in the SSW rowhouse unit. Cuff link feature contexts (Table 20) support these tentative cuff link distributional associations.

### Comparative Evidence:

Class IV cuff links (with glass sets) have been reported by Calver and Bolton (1959: 226); Smith (1965: 69) from Santa Rosa, Pensacola, Florida; Noel Hume (1961: 382); and by South (1964:

124-125) from Brunswick Town, North Carolina. Noël Hume suggests a date of between 1760 and 1780 for Class IV cuff links in general. The Calver and Bolton specimens most likely date from the Revolutionary War period. The specimen reported by Smith (Class IV, Series A, Type 5, Variety a\_ should date between 1722 and 1752. Class VI, Series A specimens have been reported by Tunnell and Ambler (1967: 63) from Ahumada, Texas; Noël Hume (1961: 380-381); and by Calver and Bolton (1950: 228). Noël Hume suggests a mid-eighteenth century date for a Class VI, Series A, Type 2, Variety a cuff link. Several Class VI, Series B, Type 1, Variety a cuff links have been reported by Calver and Bolton (1950: 228).

#### Interpretations:

This comparative evidence contributes little to the precise dating of specific cuff link types. Noël Hume, on the basis of a more extensive knowledge of cuff link use, has roughly defined a cuff link evolutionary sequence based on shape (1961: 383; 1970: 89). This sequence changes from the early, round shape to an octagonal shape (prior to 1760), back to a round shape, and to an oval shape (after 1750). This sequence can neither be supported nor rejected on the basis of the Fort Michilimackinac evidence.

The following conclusions are tentatively suggested on the basis of the distributional evidence:

1. Cuff links were used throughout the period of site occupation and were more frequent after ca. 1740.

2. Class II cuff links may have been used during an early period of occupation, ca. 1720 to 1740.
3. Class IV cuff links were in use from at least 1740 until 1770 or 1780.
4. Class VI, Series A cuff links were in use after 1750.
5. Class VI, Series B specimens were in use after 1760.

Figure 27 Cuff Links (1:1.4)

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	CI, SA, T1, Va	1
B	Vb	2370
C	CII, SA, T1, Va	1399
D	Vb	1071
E	Vc	31
F	Vd	1444
G	Ve	538
H	Vf	1935
I	T2, Va	3301
J	T3, Va	1678
K	CIII, SA, T1, Va	1318
L	T2, Va	3340
M	SB, T1, Va	1095
N	Vb	265
O	Vc	2646
P	T2, Va	1885
Q	T3, Va	1390
R	T4, Va	151
S	SC, T1, Va	80
T	CIV, SA, T2, Va	1427
U	T1, Va	1196
V	Vb	2268
W	Vc	237
X	Vd	782

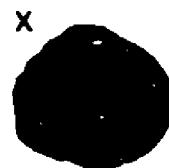
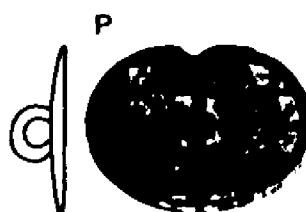
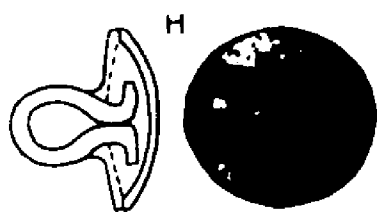
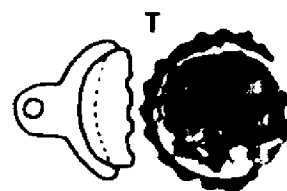
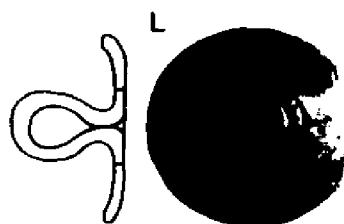
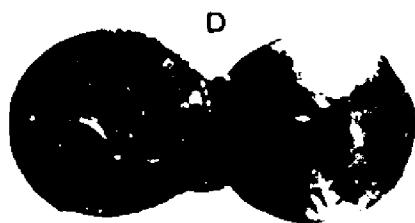
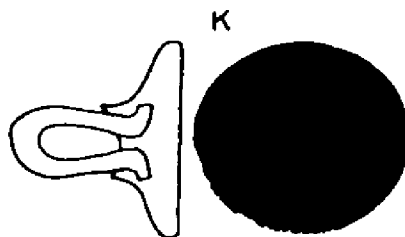
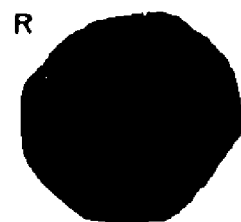
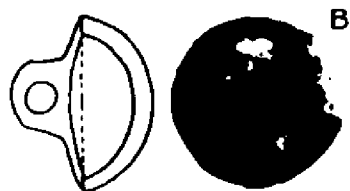
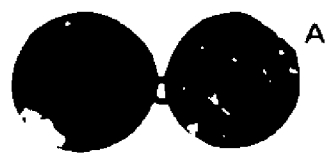


Figure 28 Cuff Links (1:1.4)

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	CIV, SA, T2, Ve	1217
B	T3, Va	2351
C	Vb	1869
D	T4, Va	1291
E	Vb	242
F	T5, Va	2628
G	T4, Vc	1
H	Vb	120
I	T6, Va	1704
J	Vb	2077
K	Vc	1996
L	T7, Va	271
M	Vb	1402
N	T8, Va	2073
O	Va	2073
P	CV, SA	1823
Q	CVI, SA, T1, Va	2607
R	Vb	2152
S	Vc	429
T	Vd	106
U	Ve	2536
V	Vf	3344
W	Vg	1344
X	Vh	1942

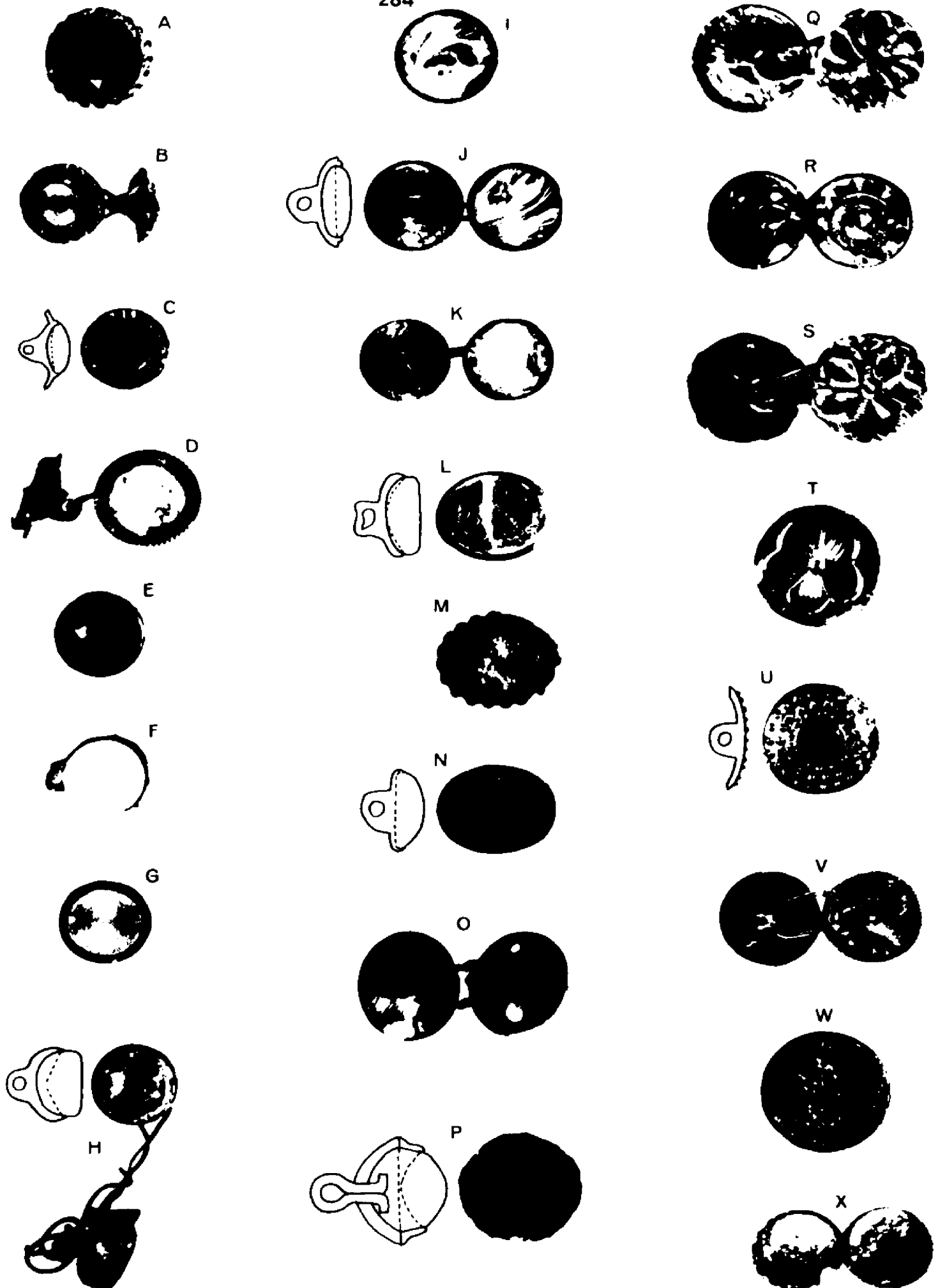


Figure 29 Cuff Links (1:1.4)

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	CVI, SA, T1, Vi	1196
B	Vj	2622
C	Vk	2568
D	Vl	1939
E	Vm	2243
F	Vn	1739
G	Vo	554
H	Vp	2475
I	Vq	1787
J	Vr	1120
K	T2, Va	1412
L	Vb	3317
M	Vc	2903
N	Vd	1242
O	Ve	1731
P	Vf	733
Q	T3, Va	2591
R	SB, T1, Va	182
S	Vb	2556
T	Vc	1482
U	Vd	2363
V	Ve	2245
W	T2, Va	1
X	Vb	304
Y	Vc	827
Z	Vd	2571
AA	Ve	1482
BB	Vg	290
CC	Vh	593



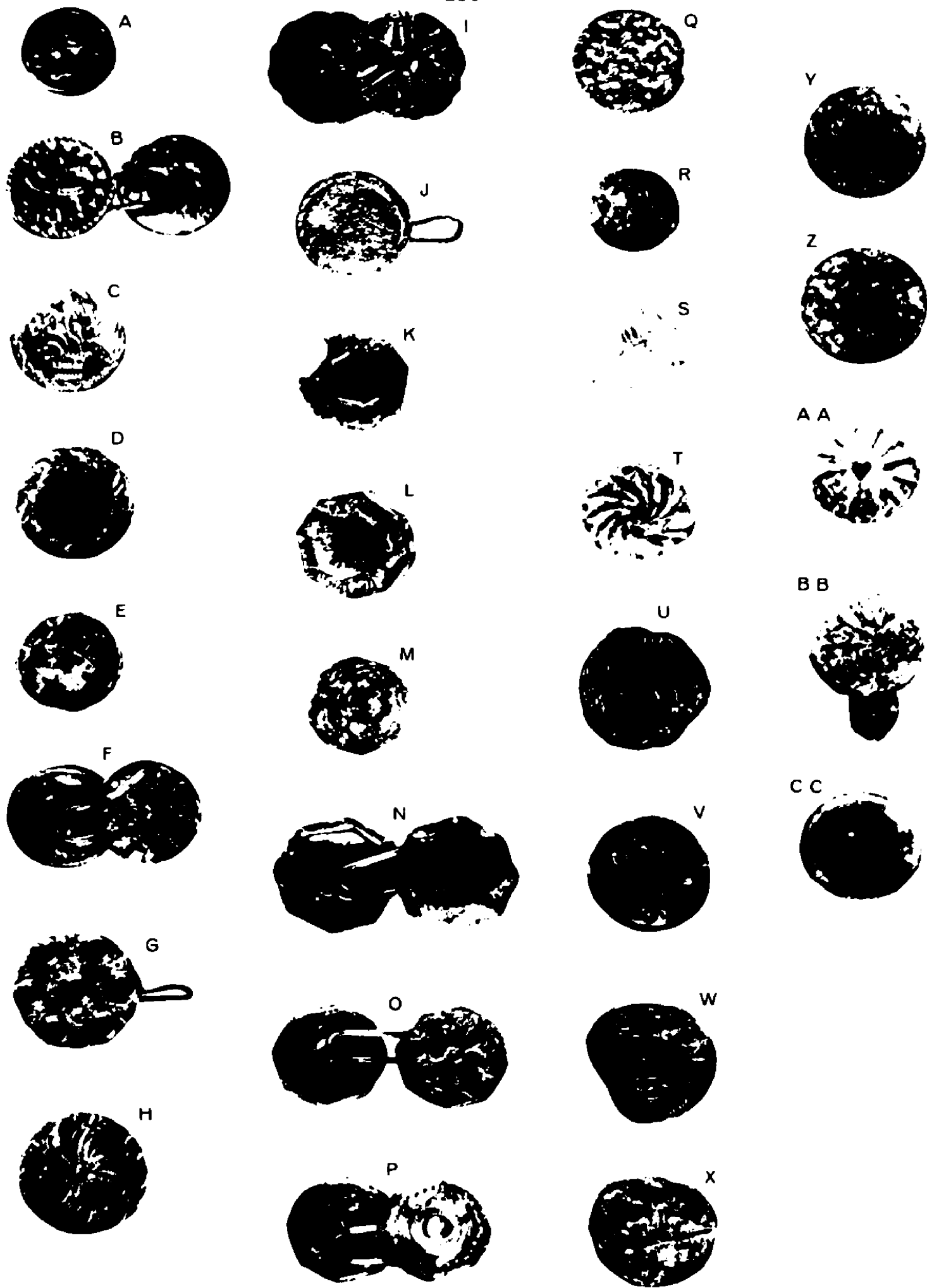


TABLE 20 Cuff Link Feature Associations

Taxonomic Designation	Frequency	Feature Number
CII, SA, T1, Va	1	85
Vd	1	123
CII, SA, T2, Va	1	296
CIII, SB, T1, Vb	1	21
CIII, SC, T1, Va	1	262
CIV, SA, T1, Va	1	296
CIV, SA, T2, Ve	1	296
Ve	1	83
CIV, SA, T4, Vb	1	2
CIV, SA, T6, Va	1	104
CIV, SA, T7, Vb	2	262
CIV, SA, T8, Va	1	215
CVI, SA, T1, Ve	1	267
CVI, SA, T1, Vn	1	107
CVI, SA, T1, Vp	1	265
CVI, SA, T2, Vc	1	267
CVI, SB, T1, Vd	1	252
Vd	1	80
CVI, SB, T2, Va	1	297

## BEADS

Three different functional categories of beads are described in this report: necklace beads, seed beads, and rosary beads. Each of these categories is classified and described separately since none of the three exhibit the same ranked series of diagnostic attributes. The rationale for this categorization is functional, although attribution in each case is based on combinations of physical properties, such as size and material.

Rosary beads are made of bone or ivory and are associated with religious activities. Necklace beads were produced to be worn on strings as necklaces. Seed beads were commonly sewed to clothing as decorative elements. The functional distinction between necklace and seed beads is difficult to prove although there is historical evidence to suggest that a distinction was made (see, for example, the discussion of Natchez ornaments by Du Pratz, in Swanton 1911: 55-56). Although the physical distinction between necklace and seed beads is one of size, there is no set dimension which divides the two in all cases. The criterion used here is one of relative size; bead specimens of an intermediate, and thus problematical, size are evaluated in terms of the average dimensions of the bead type to which they correspond. If an intermediate sized bead is found to be of the same type as beads which have a small average size, then the particular specimen is classified as a seed bead.

If the same bead were found to be representative of a bead type which had a large average size, it would be classified as a necklace bead. In terms of size, the bead types which are most often in question fall within the following length and width ranges: length, 3.0 to 6.0 mm; width, 4.0 to 6.0 mm. Although this test does not work in all cases due to small sample size, it is felt that the results more closely reflect the size distinctions intended by the manufacturer.

There are several excellent sources which describe the different methods of manufacturing glass beads. These include: Bell, Jelks, and Newcomb 1967: 134-138; Sleen 1967: 22-27; and Woodward 1965: 5-9. These methods are briefly described at this point since the distinctions between them are used as classificatory attributes. Two methods of manufacture may be distinguished in the Fort Michilimackinac bead sample: (1) the hollow-cane (drawn) method; and (2) the mandrel-wound (wire-wound) method.

#### (Hollow-Cane Method)

The first step in manufacturing hollow-cane beads is to heat a mass of glass ingredients to a molten state. At this point, the mixture may be colored by the addition of pigments. A small molten blob or mass is then withdrawn from the furnace on a metal rod or glass-blowing rod. An air-bubble is introduced into this mass either by stretching and folding or by blowing air into the mass through a hollow blowing rod. Then a second rod is attached to the mass, and the two are pulled apart (drawn) to form a long glass tube. After the tube hardens, it is broken or cut into segments

from which small, bead-sized segments are later derived. The glass segments are then tumbled with a mixture of sand and ash which acts as a filler that prevents the hollow tube from collapsing upon heating. The segments are then retumbled in a mixture of sand and ash while the container is heated. The abrasive action of sand and ash combined with heat reduces the sharp-ended segments to a final rounded and polished bead form. Prior to drawing, additional layers of glass or colored glass rods may be added to the molten mass. These layers are added either by immersing the molten mass into different mixtures of semi-molten glass or by rolling the mass which has been smoothed over a second mass of semi-molten glass (Sleen 1967: 25). Colored glass rods are added to produce a striped effect upon drawing. If the drawing rods are twisted during the process, the colored glass insets will have a wound effect.

(Mandrel-Wound Method)

Mandrel-wound beads are begun the same as hollow-cane beads, except that a pocket of air is not introduced into the molten glass mass. The solid mass is then drawn and allowed to harden. The length of solid glass rod is then broken into segments of a convenient size for later reheating and forming. The next step is performed with a glass-blowing lamp. A short rod segment is heated and wound or folded around an iron or copper rod into the shape of a bead. Upon cooling, individual beads are removed from the rod and then are tumbled in the way described above. Small circular striations generally occur on mandrel-wound beads; although on

specimens which have been highly tumbled and heat-modified, it is often necessary to view the specimens in intense light in order to define evidence of this method. The application of decorative elements, such as colored glass rods, is probably accomplished while the bead is on the metal rod and is still in a semi-molten state.

#### Classification and Description: Necklace Beads

The following attributes are recognized in the classification and description of necklace beads; method of manufacture, structure or form, decoration, shape, color, size, and surface characteristics such as striations, and so on. Different methods of manufacture refer to either hollow-cane or mandrel-wound. Structure or form refers to the presence and composition of different layers of glass and/or decorative elements. Four different types of bead structure are recognized: (1) simple, composed of one layer of glass; (2) compound, composed of two or more layers of glass; (3) complex, refers to specimens which exhibit appliqué or insets; and (4) composite, refers to specimens which are both compound and complex. This terminology is similar to that proposed by Bell, Jelks, and Newcomb (1967: 138), except for the addition of a new structure termed "composite." Decoration refers to different elements, such as ceramic or glass appliqué and rods, which are added to the surface of a bead. Decorative elements are described by shape, color, number, and size. Shape refers to the shape revealed in a longitudinal cross-section of a bead. The different shapes referred to here are: barrel, convex, convexo-elongate,

tubular, round, globular, doughnut, and conical. In certain cases it has been necessary to combine several shape categories for an accurate description. The shape attributed to a specific bead type is based on the average shape of all specimens within that type. This permits the classification of beads within a particular type when their shapes do not precisely correspond to the descriptive shape categories, but, when all other diagnostic attributes are identical. In addition, this procedure allows for shape variability resulting from the lack of precise shape control during manufacture. Color distinctions are based on values printed in the Munsell Color Chart (Munsell Book of Color 1929-1942). Examination of specimens was made in artificial light of consistent intensity. Several very dark, opaque specimens were examined under intense light. Size refers to the dimensions of length (distance between ends), width (distance across center), and bore diameter. Bore diameter has been gauged with drill bits calibrated in 1/64ths of an inch and later converted to millimeters. Surface characteristics are attributes such as: presence and shape of striations, presence and density of air-bubbles, evidence of tumbling, and degree of tumbling, evidence of twisting, and patination.

Four levels of taxonomic differentiation have been defined on the basis of the above attributes: the class, series, type, and variety. Classes are based on differences in method of manufacture. Series are based on differences in structure. Types are distinguished on the basis of combinations of shape and surface characteristics. Variety distinctions are based on differences

in glass color, the number, color and form of glass appliqué, and on the degree of translucency. This proposed ranking of attributes is violated in one case. In Class I, Series C, Types 2 and 4, the degree of translucency was used to define types.

Difficulty was encountered in attempting to compare the Fort Michilimackinac bead sample with specimens from certain other sites. In many cases, it was impossible to identify important attributes such as structure and color so that they could be objectively compared with our sample. Thus, a number of important bead collections from other sites have been disregarded in this report. It was determined better to omit these entirely rather than to construct a type synonymy on such a questionable basis. Beads described in the following reports were used for comparative purposes: Webb and Gregory (1965); Bell, Jelks, and Newcomb (1967); Stone (n.d.); Pratt (1961); Tunnell and Ambler (1967); Benson (1967); Ritchie (1954); Herrick (1958); Greenman (1951); Wittry (1963); and Quimby (1966). In several of these reports, only the fancy or elaborate bead types could be correlated with those from Fort Michilimackinac since simple beads were often described with so little information that it was impossible to compare the two.

All bead types are briefly described and interpreted below. Individual bead type descriptions consist of a summary of characteristic physical properties, a listing of feature associations, and reference to comparative evidence if applicable. Feature associations are listed by feature number and frequency; detailed information on each feature is presented in Appendix A, Part II. Table 27



provides a bead type-comparative index; the specific Fort Michilimackinac bead types are identified, and their type designations, frequency, and suggested dates at other sites are listed. Reference to this table also provides all bibliographic sources for comparative sites. Interpretations, based on comparative evidence, feature associations, and general site distribution, consist of a suggested date and nationality of use. "Nationality of use" refers to the society responsible for the importation and distribution of specific bead types. The date assigned to each bead type reflects the known period of time during which the type was in use at Fort Michilimackinac and at other comparable sites. Dates which precede the establishment of Fort Michilimackinac (ca. 1715) are based on comparative evidence. Bead type interpretations are summarized in Table 26.

Class I    Hollow-Cane MethodSeries A    Simple ConstructionType 1    Convex shapeVariety a    Clear, translucent.

Figure 32 A

7 specimens

Dimensions (5 specimens): length, 14.6-19.0, average, 16.2; width, 6.4-10.4, average, 8.2; bore, 1.7-2.2.

Shape: convex to slightly convexo-elongate.

Surface: slight patina.

Distribution: random; no evidence for dating.

Comparative: see Table 27.

Interpretation: French, 1700-1750.

Variety b    Turquoise (Munsell: greenish-Blue, 2.5 B, 5/6), translucent.

Figure 32 B

6 specimens

Dimensions (6 specimens): length, 10.3-15.9, average, 12.9; width, 8.0-9.0, average, 8.4; bore, 1.2-1.9.

Surface: highly polished, glossy.

Distribution: F.89(1), F.358(1).

Variety c    Black, opaque.

Figure 32 C

2 specimens

Dimensions (1 specimen): length, 10.0; width, 7.5; bore, 1.5.

Surface: dull but relatively smooth.

Interpretation: 1700-1740 based on interpretation of Bell, Jelks, and Newcomb (1967).

Type 2    Convexo-elongate shapeVariety a    Dull, milk-white, opaque.

Figure 32 D

421 whole specimens

119 fragmentary specimens

688 specimens in molten and semi-molten state

Dimensions (100 specimens): length, 10.4-19.3, average, 13.9, standard deviation, 1.8; width, 6.5-12.0, average, 7.8, standard deviation, .80; bore, 1.4-2.4.

Shape: range from convexo-elongate through convex to almost barrel; some have slight longitudinal constriction through center.

Surface: semi-glossy to smooth.

Discussion: majority of bead ends are either lopsided or have small glass protrusion which has been snapped.

Distribution: Two separate distribution maps were plotted for this bead type: one shows all individual specimens and fragments (Figure 30 ); and a second shows all molten specimens (Figure 31 ). The first map reveals a highly restricted and concentrated distribution of Variety a beads within three major areas: (1) in the area of the northwest corner of F.5, the early French stockade, and the French rowhouse unit along the inside north wall of F.5 (ca. 30 percent of the sample); (2) in an area immediately south of the NW rowhouse unit (ca. 12 per cent of the sample); and (3) in the center of the SW French rowhouse unit (ca. 20 per cent of the sample). Variety a beads rarely occur north of the 110 line and south of the 240 line, both of which correspond very closely with the suggested north and south walls of the original French stockade, F.5. Other artifacts within features in these 3 areas indicate that the associated assemblages were primarily of French origin. The primary Variety a feature association within the SW rowhouse unit was F.208, a fireplace in 230L80. The second distribution map indicates that the majority of molten Variety a beads were associated with this same feature. This suggests that the third house of this rowhouse unit may have burned and destroyed a store of Variety a beads in the process. The areas between and to the west of these 3 areas of concentration yielded a significant number of Variety a beads, although specific clusters were not identified.

Comparative: French origin; widely distributed in North America.

Interpretation: French, 1710-1750. The limited distribution of Variety a beads at the site indicates that they were not used late in the period of French occupation; thus, there is a suggested terminal date of 1750. The distribution of Variety a beads further indicates that the NW and SW rowhouse units were occupied at the same time.

Variety b Blue (Munsell: bluish Purple-Blue, 2.5 PB, 5/6), semi-translucent.

Figure 32 E

1 specimen

Dimensions (1 specimen): length, 16.8; width, 7.9; bore, 1.6.

Surface: dull with minute longitudinal striations; faint rings encircle the ends.

Comparative: see Table 27.

Variety c Black, opaque.

Figure 32 F

1 specimen

Dimensions (1 specimen): length, 13.2; width, 9.0;  
bore, 2.3.

Surface: glossy, glazed, slightly crazed; untumbled.

Type 3 Round shape

Variety a Dull, milk-white, opaque.

Figure 32 G

55 whole specimens

10 fragmentary specimens

Dimensions (20 specimens): length, 5.3-8.4, average, 7.0;  
width, 6.9-9.6, average, 8.0; bore, 1.6-2.0.

Shape: varies from round to semi-barrel.

Surface: semi-glossy and smooth; tumbled.

Discussion: essentially same as CI, SA, T2, Va except  
for tumbling; size and degree of tumbling are distinguish-  
ing attributes; both bead varieties probably produced at  
same time.

Distribution: correlates highly with that of CI, SA, T2,  
Va;

Comparative: see Table 27.

Interpretation: French, 1710-1750, based on site disttri-  
bution and correlation with CI, SA, T2, Va.

Variety b Turquoise (Munsell: greenish Blue, 2.5 B,  
5/6), translucent.

Figure 32 H

1 specimen

Dimensions (1 specimen): length, 8.9; width, 6.8;  
bore, 1.7.

Shape: semi-barrel with rounded ends.

Surface: glossy; partially dulled by use.

Variety c Blue-green (Munsell: bluish Blue-Green, 7.5  
BG, 4/6), translucent.

Figure 32 I

1 specimen

Dimensions (1 specimen): length, 7.0; width, 6.0;  
bore, 1.7.

Shape: semi-barrel with rounded corners  
 Surface: semi-glossy with numerous, minute, air-bubble pits.

Variety d Dark-brown, opaque.

Figure 32 J

28 specimens

Dimensions (14 specimens): length, 6.0-7.8, average, 6.7; width, 8.2-9.9, average, 8.6; bore, 1.6-1.7.

Shape: varies from round to semi-globular.

Surface: dull; show considerable use wear; several specimens have circular striations around the ends.

Discussion: 2 segments of 3 beads each are attached by small brass links; majority show wear concavity on ends produced by the links on which they were strung.

Distribution: specific feature-artifact associations unclear; association appears to be French; 11 specimens in association with either F.60 (French guardhouse) or F.61 (British blacksmith's shop overlying F.60).

Comparative: Variety d probably dates from first half of 18th century; see Table 27.

Interpretation: French, 1710-1750, religious function.

Variety e Blue (Munsell: bluish Purple-Blue, 2.5 PB, 3.5/8), translucent.

Figure 32 K

1 specimen

Dimensions (1 specimen): length, 8.2; width, 9.1; bore 1.3.

Surface: highly polished.

Variety f Clear, translucent.

Figure 32 L

1 specimen

Dimensions (1 specimen): length, 8.2; width, 8.4; bore, 1.2.

Surface: highly patinated which produces a silver-glossy (pearl-like) appearance; when patina is chipped away, clear, translucent nature of the glass is noted; glass body appears to be highly crazed.

#### Type 4 Barrel shape

Variety a Dull milk-white, opaque.

Figure 32 M

10 specimens

Dimensions (7 specimens): length, 8.10-11.0, average, 9.1; width, 7.4-9.6, average, 8.4; bore, 1.5-1.9.

Surface: highly tumbled.

Discussion: differs from CI, SA, T2, Va and CI, SA, T3, Va specimens only in shape and size; this variety represents a highly tumbled style of CI, SA, T2, Va (as does CI, SA, T3, Va).

Distribution: all 3 varieties have similar distribution at site.

Comparative: Table 27 shows date range coincident with that of CI, SA, T2, Va.

Interpretation: French, 1710-1750.

Variety b Dark brown, opaque.

Figure 32 N

6 specimens

Dimensions (6 specimens): length, 6.6-11.5, average, 9.2; width, 8.0-12.2, average, 10.1; bore, 2.0-3.1.

Surface: semi-glossy with considerable use wear.

Discussion: several smaller specimens resemble CI, SA, T2, Vd which have been identified as rosary beads.

Comparative: see Table 27

Interpretation: French, 1710-1750.

Variety c Blue (Munsell: bluish Purple-Blue, 2.5 PB, 4/6), translucent.

Figure 32 O

1 specimen

Dimensions (1 specimen): length, 9.1; width, 9.1; bore, 1.9.

Surface: semi-glossy with light, silvery patina.

Type 5 Tubular, fibrous structure, untumbled

Type 5 specimens exhibit a fibrous appearance. This characteristic is produced by the presence of numerous small longitudinal air-bubbles which extend the length of the bead. There is a correlation between this structure and the absence of tumbling as opposed to presence of tumbling and the absence of a fibrous structure as in Type 6 which follows. It is suggested that tumbling with heat would act to remove the noted longitudinal air-bubbles, thus producing a Type 6 bead.

Variety a Clear, translucent.

Figure 32 P

2 specimens

Dimensions (2 specimens): length, 13.0, 15.0; width, 5.0, 3.7; bore, 1.8, 1.2.

Surface: glossy; numerous striations and longitudinal air-bubbles; ends sharp and untumbled.

Distribution: F.249 (1).

Variety b Light blue (Munsell: Blue Purple-Blue, 10.0 B, 6/6), translucent.

Figure 32 Q

1 specimen

Dimensions (1 specimen): length, 20.0; width, 4.1; bore, 2.7.

Surface: glossy; ends sharp and untumbled.

Variety c Lavender (Munsell: reddish Purple, 7.5 P, 7/4), translucent.

Figure 32 R

1 specimen

Dimensions (1 specimen): length, 18.6; width, 3.6; bore, 2.4.

Surface: glossy; numerous air-bubble striations produce semi-translucent appearance; ends sharp and untumbled.

Variety d Green (Munsell: yellowish Green, 2.56, 5/8), translucent.

Figure 32 S

1 specimen

Dimensions (1 specimen): length, 26.0; width, 4.5; bore, 2.1.

Surface: very glossy and polished; longitudinal striations less frequent than preceeding T5 varieties; ends sharp and untumbled.

Variety e Dark brown, semi-opaque.

Figure 32 T

2 specimens

Dimensions (2 specimens): length, 17.1, 8.0; width, 4.8, 3.9; bore, 2.8, 1.3.

Surface: semi-glossy; appear black under normal light; semi-translucent only under intense light.

Variety f Blue-gray (Munsell: purplish Purple-Blue, 7.5 PB, 4/8), translucent.

Figure 32 U

4 specimens

Dimensions (4 specimens): length, 12.5-14.14, average, 13.2; width, 3.9-4.9, average 4.5; bore, 1.7-1.8.

Surface: semi-glossy with slight patina; longitudinal striations common on surface and throughout body, ends sharp and untumbled.

Distribution: F.226(1) and F.220(1).

Variety g Blue (Munsell: purplish Purple-Blue, 7.5 PB, 3/10), semi-translucent.

Figure 32 V

2 specimens

Dimensions (2 specimens): length, 19.2, 21.2; width, 6.0, 6.1; bore, 1.9, 2.1.

Surface: dull; numerous longitudinal air-bubble striations.

Variety h Royal blue (Munsell: purplish Purple-Blue, 7.5 PB, 2/10), semi-translucent.

Figure 32 W

4 specimens

Dimensions (4 specimens): length, 13.1--22.6, average, 18.8; width, 5.0-6.0, average, 5.6; bore, 1.1-2.0.

Surface: glossy; longitudinal striations throughout bead and on surface; ends sharp and untumbled.

Type 6 Tubular, tumbled

Type 6 beads have rounded ends as a result of tumbling. Longitudinal, air-bubble striations are rare.

Variety a Blue-gray (Munsell: purplish-Purple-Blue, 7.5 PB, 4/8), translucent.

Figure 32 X

8 specimens

Dimensions (8 specimens): length, 10.6-14.6, average, 13.5; width, 4.0-5.2, average, 4.6; bore, 1.2-1.9.

Surface: semi-glossy with slight patina; all ends slightly rounded.

Distribution: F.81(1).

Comparative: see Table 27.

Interpretation: French, 1600-1700, based on interpretation of Benson (1967).

Variety b Blue (Munsell: Purple-Blue, 5.0 PB, 3/12), translucent.



## Figure 32 Y

6 specimens

Dimensions (6 specimens): length, 10.2-20.6, average, 16.8; width, 4.9-6.0, average, 5.3; bore, 1.3-1.7.

Shape: slight longitudinal curvature on 3 specimens.

Surface: semi-glossy to dull.

Distribution: F.209(1) in association with artifacts which suggest French provenience.

Interpretation: French, 1710-1750; based on context and associations with CI, SA, T2, Va specimens.

Variety c Royal blue (Munsell: purplish Purple-Blue, 7.5 PB, 4/10), translucent.

## Figure 32 Z

5 specimens

Dimensions (5 specimens): length, 11.9-20.8, average 17.9; width, 4.7-6.6, average, 5.6; bore, 1.2-1.7.

Surface: highly-polished, glossy; a few longitudinal striations present in all specimens; ends show evidence of tumbling.

Variety d Clear, translucent.

## Figure 32 AA

1 specimen

Dimensions (1 specimen): length, 15.5; width, 3.2; bore, 1.0.

Surface: dull with slight patina; ends show evidence of tumbling.

Variety e Light blue (Munsell: Blue purple-Blue, 10.0 B, 7/2), opaque.

## Figure 32 BB

1 specimen

Dimensions (1 specimen): length, 9.4; width, 4.2; bore 1.5.

Surface: dull; rare longitudinal striations; tumbled.

Discussion: Class I, Series A, Types 5 and 6 (simple, tubular).

All specimens were plotted on one distribution map as an additional interpretative aid. The majority of specimens occur south of the 210 line in two areas of concentration: (1) within the central unit of the SW French rowhouse unit, and (2) in a garden area south of

The SSW rowhouse unit. Tentative evidence for French affiliation (as suggested for Type 6, Varieties a and b above) is derived from these distributions.

Type 7 Tubular, opaque, untumbled

Variety a Red (Munsell: Yellowish Red, 7.5 R, 4/6),  
opaque.

Figure 32 CC

10 specimens

Dimensions (10 specimens): length, 12.7-61.9, average, 28.7; width, 2.8-3.5, average, 3.2; bore, 1.0-1.7.

Surface: dull, slight patina; longitudinal striations common; ends irregular and appear to have been snapped without subsequent tumbling.

Distribution: F.88(1).

Type 8 Tubular, opaque, molded, twisted

Variety a Red (Munsell: Yellowish Red, 7.5 R, 4/6),  
opaque.

Figure 32 DD

1 specimen

Dimensions (1 specimen): length, 31.8; width, 4.2; bore, 2.6.

Shape: square; twisted 1/4-turn.

Surface: dull; numerous longitudinal striations; ends irregular.

Distribution: F.85(1).

Comparative: see Table 27

Interpretation: French, 1630-1760.

Type 9 Tubular, fibrous structure, opaque

Variety a Green (Munsell: Green-Yellow Green, 10 GY 6/4),  
opaque.

Figure 32 EE

3 specimens

Dimensions (3 specimens): length, 30.9-50.5, average, 39.1; width, 4.0-4.8, average, 4.4; bore, 2.2.

Surface: dull, eroded.

Distribution: F.88(2).

Interpretation: French, 1730-1760.

Variety b Light blue (Munsell: greenish Blue-Green, 2.5 BG, 6/2), opaque.

Figure 32 FF

1 specimen

Dimensions (1 specimen): length, 33.9; width, 5.5; bore, 3.0.

Surface: dull, eroded.

Variety c Yellowish white, opaque.

Figure 32 GG

1 specimen

Dimensions (1 specimen): length, 18.4; width, 5.0; bore, 1.9.

Surface: dull with irregular ends.

Variety d White, opaque.

Figure 32 HH

2 specimens

Dimensions (2 specimens): length, 12.3, 11.4; width, 3.5, 3.4; bore, 1.3, 1.3.

Surface: dull; 1 has small patch of white, opaque glaze, irregular ends.

Type 10 Globular shape

Variety a Dark brown, opaque.

Figure 32 II

17 specimens

Dimensions (17 specimens): length, 7.7-11.9, average, 9.8; standard deviation, .94; width, 11.4-13.9, average, 12.6, standard deviation, .73; bore, 2.6-3.0.

Surface: varies from glossy to dull with patina; appears black except on fractured specimens where dark brown is noticeable.

Discussion: Fairly uniform in size

Distribution: F.209(2); F.227(1).

Comparative: similar beads reported from Lasanen Site; see Table 27.

Interpretation: French, 1670-1750.

Type 11 Globular to barrel shape

This is a problematical type designation because specimen shape varies from nearly doughnut to barrel to globular. All specimens are very small in relation to other necklace beads, although they are longer than the majority of seed beads.

Variety a Blue (Munsell: bluish Purple-Blue, 2.5 PB, 4/6), translucent.

Figure 32 JJ

15 specimens

Dimensions (8 specimens): length, 3.0-5.2, average, 3.9; width, 4.4-5.6, average, 5.0; bore, 1.5-1.6.

Surface: majority dull; several have heavy patina.

Interpretations: French or British, 1750-1780.

Variety b Light blue (Munsell: Blue Purple-Blue, 10.0 B, 5/2), opaque.

Figure 32 KK

1 specimen

Dimensions (1 specimen): length, 3.5; width, 4.3, bore, 1.6.

Shape: barrel

Surface: glossy; ends uneven and highly tumbled.

Type 12 Multi-faceted, cut or ground surfaces; round to oblong

Variety a Black, opaque.

Figure 32 LL

7 specimens

Dimensions (5 specimens): length, 8.9-20.2; width, 9.6-14.6; bore, 1.3-1.9.

Shape: round to oblong; ends cut perpendicular to bead axis.

Decoration: facets vary in shape and have either 4 or 5 sides; vary in number from 32 on small specimens to 40 on large specimens.

Variety b Clear, translucent.

Figure 32 MM

1 specimen

Dimensions (1 specimen): length, 10.2; width, 14.0; bore, 1.6.

Surface: very glossy.

Decoration: 40 facets of varied shape and size; have either 4 or 5 sides.

Variety c Green (Munsell: Green-Yellow Green, 10.0 GY, 6/6), translucent.

Figure 32 NN

1 specimen

Dimensions (1 specimen): length, 8.3; width, 9.0; bore, 1.3.

Shape: ends cut perpendicular to bead axis.

Decoration: 35 irregularly-shaped facets which have 4 or 5 sides.

Variety d Clear, translucent.

Figure 32 OO

4 specimens

Dimensions (4 specimens): length, 7.3-9.2, average, 8.1; width, 8.8-9.4, average, 9.1; bore, 1.7-2.3.

Surface: dull with slight patina; numerous air-bubble pits.

Decoration: facets irregularly spaced and shaped; vary from 5 to 6 sides; occur only on median surface.

## Series B Compound Construction

### Type 1 Tubular, three layers

Variety a Red (Munsell: Yellowish Red, 7.5 R, 4/6), opaque.

Figure 32 PP

22 specimens

Dimensions (12 specimens): length, 13.0-19.0, average, 13.4; width, 3.8-5.3, average, 4.2; bore, 1.1-1.6.

Structure: center layer of light green, translucent glass; middle layer of red, opaque glass; outer or surface layer of very thin glass veneer.

Surface: glossy and polished; numerous longitudinal striations; ends irregular and tumbled.

Discussion: referred to in literature as "Cornaline d'Aleppo" style.

Distribution: F.248(1).

Type 2 Tubular, two layersVariety a White, opaque, tumbled.

Figure 32 QQ

6 specimens

Dimensions (6 specimens): length, 10.4-20.5, average, 13.8; width, 3.4-5.5, average, 5.8; bore, 1.0-1.7.

Structure: inner layer of white, opaque glass with numerous air-bubble pits; outer layer of clear glass veneer.

Surface: tumbled.

Distribution: F.296(1).

Variety b White, opaque, untumbled.

Figure 32 RR

7 specimens

Dimensions (7 specimens): length, 11.4-13.1, average, 12.3; width, 3.3-4.1, average, 3.5; bore, .9-1.3.

Surface: irregular ends.

Discussion: same as CI, SB, T2, Va except that it has not been tumbled.

Type 3 Doughnut shape, two layersVariety a White, opaque.

Figure 32 SS

3 specimens

Dimensions (3 specimens): length, 4.0, 3.4, 3.7; width, 6.0, 6.2, 6.0; bore, 1.5, 1.7, 1.5.

Structure: inner layer of white, opaque glass; outer layer of clear glass veneer.

Comparative: see Table 27.

Interpretation: 1670-1800 (?).

Series C Complex StructureType 1 Convexo, opaqueVariety a White, opaque; three sets of colored, striped insets, each composed of one blue and two red stripes.

## Figure 32 TT

20 specimens

Dimensions (11 specimens): length, 8.9-19.8, average, 14.7; width, 5.8-9.1, average, 7.4; bore, 1.3-2.0.

Shape: varies from convex to convexo-elongate.

Surface: dull on the majority.

Decoration: 3 sets of colored glass insets; each is composed of 1 center blue stripe, bordered on each side by 1 red stripe; insets are straight and run the length of bead.

Distribution: F.238(1), F.201(1), F.227(1).

Comparative: see Table 27.

Interpretation: French, 1700-1750.

Variety b White, opaque; three red, striped insets.

## Figure 32 UU

23 specimens

Dimensions (12 specimens): length, 11.0-14.0, average, 12.7; width, 8.0-9.2, average, 8.4; bore, 1.2-1.8.

Surface: dull; several specimens have irregular ends.

Decoration: 3 equally-spaced, red stripe insets; each runs the length of bead.

Discussion: irregular ends also found on CI, SA, T2, Va; considerable variation between specimens in width and spacing of stripes.

Comparative: see Table 27.

Interpretation: French, 1680-1760.

Variety c White, opaque; six reddish-brown, striped insets.

## Figure 32 VV

3 specimens

Dimensions (3 specimens): length, 13.8, 13.2, 13.9; width, 7.4, 7.8, 8.7; bore, 2.2, 1.7, 1.5.

Surface: dull.

Decoration: 6 equally-spaced, reddish-brown stripes; stripes spiral (1/4 turn) around bead between ends.

Distribution: F.70(1).

Comparative: several recovered from other sites; see Table 27.

Interpretation: French, 1700-1750.

Variety d White, opaque; four colored, striped insets, two green and two red.

Figure 32 WW

6 specimens

Dimensions (4 specimens): length, 12.3-17.3, average, 14.8; width, 7.2; bore, 1.2-1.7.

Surface: dull and eroded.

Decoration: 4 equally-spaced, colored glass insets which run length of bead; 2 green and 2 red alternate.

Distribution: F.209(1), F.227(1), F.3(1).

Interpretation: French, 1700-1750.

Type 2 Barrel, opaque

Variety a White, opaque.

Figure 32 XX

1 specimen

Dimensions (1 specimen): length, 11.9; width, 9.0; bore, 2.0.

Discussion: same bead as CI, SC, T1, Vc except for the distinct barrel shape.

Interpretation: French, 1700-1750.

Variety b White, opaque; six colored glass stripe insets; alternating blue, red, and green.

Figure 32 YY

4 specimens

Dimensions (4 specimens): length, 8.0-9.8, average, 8.9; width, 8.7-9.0; bore, 1.9-2.0.

Decoration: 6 stripes, 2 each red, green and blue, alternating; stripes spiraled around end of bead in 1/8-twist.

Comparative: see Table 27.

Interpretation: French, 1700-1750.



Variety c Yellow (Munsell: reddish Yellow, 2.5 Y, 8/10), opaque; four colored glass stripe insets, alternating green and red.

Figure 32 ZZ

1 specimen

Dimensions (1 specimen): length, 5.5; width, 7.0; bore, 1.9.

Surface: dull.

Decoration: 4 stripes, 2 red and 2 green, alternating; stripes equally-spaced between ends.

Variety d Dark brown, opaque; six yellow stripes.

Figure 32 AAA

1 fragmentary specimen

Dimensions (1 specimen): length, 8.3; width, greater than 9.2.

Surface: dull.

Decoration: 6 yellow insets (number estimated); stripes equally-spaced between ends.

Discussion: Class I, Series C, Type 1 and Type 2

All specimens were combined on one distribution map as an additional interpretative aid. The combined distribution of these specimens duplicates that of CI, SA, T2, Va. This evidence confirms the dating of the individual varieties as between 1700-1750, French.

Type 3 Globular, opaque

Variety a Brown, opaque; four alternating, white stripe glass insets.

Figure 32 BBB

2 specimens

Dimensions (2 specimens): length, 8.0, 8.5; width, 11.0, 10.0; bore, 2.6, 1.7.

Surface: dull and patinated.

Decoration: 4 equally-spaced white insets which extend between ends.

Variety b Brown, opaque; five alternating white stripe glass insets.

Figure 32 CCC

1 specimen

Dimensions (1 specimen): length, 8.8; width, 10.5; bore, 1.9.

Discussion: differs from CI, SC, T3, Va only in the presence of 5 insets.

Variety c Brown, opaque; six alternating white stripe glass insets.

Figure 32 DDD

4 specimens

Dimensions (4 specimens): length, 9.2-13.4; width, 10.0-11.3; bore, 1.9-2.6.

Discussion: differs from CI, SC, T3, Va and CI, SC, T3, Vb only in the presence of 6 insets.

Comparative: see Table 27.

Interpretation: French, 1700-1740.

Variety d Brown, opaque; seven alternating white stripe glass insets.

Figure 32 EEE

1 specimen

Dimensions (1 specimen): length, 8.9; width, 10.5; bore, 2.4.

Discussion: differs from other Type 3 specimens only in the presence of 7 insets.

Distribution: F.83(1).

Variety e Brown, opaque; eight alternating white stripe glass insets.

Figure 32 FFF

15 specimens

Dimensions (8 specimens): length, 7.0-8.6, average, 7.7; width, 8.7-10.8, average, 10.1; bore, 2.2-2.4.

Shape: doughnut to globular; often lopsided.

Surface: dull with slight gold patina; irregular ends; insets often raised slightly above the bead's surface.

Decoration: 8 white glass insets which alternate between ends in a spiral (1/8-turn) design.

Variety f Brown, opaque; nine alternating white stripe glass insets.

Figure 32 GGG

1 specimen

Dimensions (1 specimen): length, 5.5; width, 9.3; bore, 2.6.

Discussion: differs from CI, SC, T3, Ve only in presence of 9 insets.

Comparative: see Table 27.

Interpretation: French, 1700-1740.

Variety g Brown, opaque; three circumferential white glass insets.

Figure 32 HHH

7 specimens

Dimensions (7 specimens): length, 6.2-10.8, average, 8.3; width, 9.5-11.1, average, 10.3; bore, 2.2-2.9.

Shape: doughnut to semi-barrel

Surface: dull.

Decoration: 3 irregularly-spaced white insets which extend around circumference of bead; insets join irregularly and join at different intervals.

Comparative: see Table 27.

Interpretation: French, 1680-1750.

### Discussion: Class I, Series C, Type 3

All specimens were combined on one distribution map as an additional interpretative aid. Specimens seem to occur in three major clusters: (1) in the area of the northwest corner of the first expansion stockade (F.81); (2) in the area of the church and Priest's house; and (3) in an area immediately north of the French guardhouse (F.60). Evidence concerning date or affiliation is inconclusive.

### Type 4 Barrel, translucent

Variety a Turquoise (Munsell: greenish Blue, 2.5 B, 6/6), translucent; eight white stripe insets.

Figure 32 III

1 specimen

Dimensions (1 specimen): length, 7.4; width, 6.9; bore, 1.7.

Surface: dull.

Decoration: 8 equally-spaced longitudinal white glass stripe insets.

Distribution: F.296(1).

Comparative: see Table 27.

Interpretation: French, 1700-1760.

Variety b Blue (Munsell: greenish Blue, 2.5 B, 5/2), translucent.

Figure 32 JJJ

3 specimens

Dimensions (3 specimens): length 9.0, 10.9, 7.8; width 7.2, 8.0; bore, 2.5, 1.7.

Discussion: color is only factor distinguishing CI, SC, T4, Vb from CI, SC, T4, Va.

Variety c Royal blue (Munsell: purplish Purple-Blue, 7.5 PB, 3/10), translucent; eight white stripe insets.

Figure 32 KKK

1 specimen

Dimensions (1 specimen): length, 12.2; width, 8.0; bore 2.4.

Discussion: again, differs in color only from previous 2 varieties.

Comparative: see Table 27

Interpretation: French, 1700-1760.

Variety d Green (Munsell: Blue-Green Blue, 10.0 BG, 7/4), translucent; eight white stripe insets.

Figure 32 LLL

1 specimen

Dimensions (1 specimen): length, 10.0; width, 7.0; bore, 1.6.

Discussion: differs from other T4 varieties only in color.

Interpretation: French, 1700-1760.

Type 5 Round, translucent

Variety a Blue (Munsell: greenish Blue, 2.5 B, 5/2), translucent.

Figure 32 MMM

1 fragmentary specimen

Dimensions (1 specimen): length, 7.9; width, 8.2; bore, 1.5.

Shape: round.

Discussion: differs from CI, SC, T4, Vb in shape only.

Interpretation: French, 1700-1760.

Variety b    Blue green (Munsell: greenish Blue, 2.5 B, 6/6), translucent.

Figure 32 NNN

1 specimen

Dimensions (1 specimen): length, 7.3; width, 7.3; bore, 1.6.

Discussion: distinguished from CI, SC, T5, Vb on the basis of color only.

Distribution: F.238(1).

Interpretation: French, 1700-1760.

Variety c    Turquoise (Munsell: greenish Blue, 2.5 B, 5/4), semi-translucent; three (?) sets of colored stripe insets, each composed of one red with a bordering white stripe.

Figure 32 OOO

1 fragmentary specimen

Dimensions (1 specimen): length, 9.5; width, 8.2; bore, 1.7.

Surface: dull, eroded.

Decoration: 3(?) sets of longitudinal colored insets; each composed of a center red stripe bordered by white stripes.

Distribution: F.254(1).

Type 6    Round, opaque

Variety a    Black, opaque; three sets of patterned white glass insets.

Figure 32 PPP

1 specimen

Dimensions (1 specimen): length, 11.4; width, 10.9; bore, 1.6.

Surface: dull.

Decoration: 3 sets of white glass insets; sets resemble floral pattern with angular (swirled) branches running between ends.

Type 7    Tubular, opaque

Variety a    White, opaque; three sets of glass insets, each composed of one red, yellow, and blue stripe.

## Figure 32 QQQ

4 specimens

Dimensions (4 specimens): length, 16.9-24.9, average, 20.7;  
width, 5.4-6.9, average, 6.1; bore, 1.9-3.0.

Surface: dull with glossy insets.

Decoration: 3 sets of longitudinal, twisted (1/4-turn)  
stripe insets; each inset consists of 1 center yellow  
stripe bordered by 1 blue and 1 red stripe.

Distribution: F.54(1).

Variety b

Blueish white (Munsell: Blue, 5.0 B, 8/2),  
opaque; three sets of glass insets, each com-  
posed of one red, yellow, and blue stripe.

## Figure 32 RRR

1 specimen

Dimensions (1 specimen): length, 9.4; width, 6.9; bore, 1.6.

Discussion: distinguished from CI, SC, T7, Va only by color.

Distribution: F.209(1).

Variety c

White, opaque; three sets of glass stripe insets,  
each composed of one center silver-blue stripe  
bordered by red stripes.

## Figure 32 SSS

1 specimen

Dimensions (1 specimen): length, 17.2; width, 5.6; bore,  
1.3.

Surface: dull, eroded; slight patina.

Decoration: 3 sets of longitudinal twisted (1/2-turn) glass  
stripe insets; insets consist of 1 center silver-blue  
stripe bordered by red stripes.

Variety d

White, opaque; three red glass stripe insets.

## Figure 32 TTT

6 specimens

Dimensions (6 specimens): length, 13.3-15.5, average, 14.7;  
width, 3.8-4.6, average, 6.1; bore, 1.3-1.7.

Surface: eroded appearance because of numerous longitudinal  
striations.

Decoration: 3 equally-spaced longitudinal red stripes.

Distribution: F.70(1), F.138(1).

Interpretation: French, 1700-1750.

Variety e Blue (Munsell: bluish-Purple-Blue, 2.5 PB, 4/6), opaque; six sets of glass stripe insets, each set consists of one red and two white stripes.

Figure 32 UUU

3 specimens

Dimensions (3 specimens): length, 18.0, 16.6, 17.5; width, 6.2, 6.3, 5.8; bore, 2.0, 1.9, 2.1.

Surface: dull, numerous faint longitudinal striations.

Decorations: 6 equally-spaced sets of colored glass stripe insets; sets consist of 1 red stripe bordered by white stripe on each side.

Variety f Blue (Munsell: bluish Purple-Blue, 2.5 PB, 4/4), opaque; five (?) sets of glass stripe insets, each set consists of one red and two white stripes.

Figure 32 VVV

1 specimen

Dimensions (1 specimen): length, 17.5; width, 6.5; bore, 1.9.

Discussion: may be an additional specimen of CI, SC, T7, Ve; basic color and surface appearance appear to be slightly different; longitudinal striations much more noticeable than in CI, SC, T7, Ve; decorative elements differ only in the number of sets present, although this may be a result of erosion or variation in manufacture.

Discussion: Class I, Series C, Type 7

All specimens were combined on one distribution map as an additional interpretative aid. The only significant cluster of Type 7 specimens occurs in the central unit of the SW French rowhouse unit. Associations within this particular unit suggest French affiliation. On this basis, Type 7 specimens are tentatively interpreted as French.

Type 8 Tubular, translucent

Variety a Blue-gray (Munsell: bluish Purple-Blue, 2.5 PB, 6/2), translucent; three (?) sets of striped glass insets, each consists of one red and two white.

Figure 33 A

2 fragmentary specimens

Dimensions (2 specimens): length, 16.4, 7.7; width, 4.6, 4.0; bore, 1.1, 1.5.

Surface: glossy with faint longitudinal striations.  
 Decoration: 3(?) sets of insets; 1 center red strip bordered on both sides by 1 white stripe.  
 Distribution: F.210(1).

Series D Compound-Complex Structures

Type 1 Tubular, three layers of glass

Variety a Red (Munsell: Yellowish Red, 7.5 R, 5/6), opaque; inner layer: light green, translucent, center layer: red, opaque; outer layer: clear glass veneer; three sets longitudinal glass insets, each of one center dark red stripe, with one white stripe on each side.

Figure 33 B

22 specimens

Dimensions (22 specimens): Length, 7.9-18.0, average, 14.9, standard deviation, 2.6; width, 2.8-4.8, average, 3.9, standard deviation, .49; bore, .80-1.9.

Structure: 3 layers of glass (see above).

Surface: dull with frequent longitudinal striations; patina.

Decoration: 3 sets of longitudinal insets; each consists of dark red stripe flanked by white stripes.

Discussion: referred to in literature as "Cornaline d'Aleppo."

Comparative: see Table 27

Interpretation: French, 1650-1750.

Type 2 Tubular, two layers of glass with longitudinal insets

Variety a White, opaque.

Figure 33 C

1 specimen

Dimensions (1 specimen): length, 14.5; width, 6.9; bore, 2.0.

Structure: inner layer: white, opaque; outer layer: clear glass veneer.

Surface: glossy; longitudinal insets removed by erosion.

Discussion: longitudinal surface insets are assumed because of presence of a deep longitudinal surface groove; this type of groove characterizes beads on which insets have been removed through erosion.



Type 3 Tubular, two layers with grooves

Variety a Blue and white, opaque; two layers; inner: white opaque; outer: red opaque; red layer covered with blue and white longitudinal glass insets.

Figure 33 D

2 specimens

Dimensions (2 specimens): length, 15.0, 13.8; width, 7.0; 6.0; bore, 1.9-1.8.

Structure: inner layer: opaque, porous, white glass;  
outer layer: opaque, red glass.

Discussion: red layer has an irregular cross-sectional which resembles a gear with angular, pointed teeth; the grooves between the exterior teeth are filled with longitudinal white and blue glass insets.

Class II Mandrel-Wound MethodSeries A Simple Construction

The shapes of several types in this series have been modified by molding or press-faceting during manufacture. Evidence of faceting or molding is thus more important in distinguishing between types than is shape.

Type 1 Faceted, eight five-sided

All Type 1 bead varieties exhibit eight, five-sided pressed facets. A series of four facets encircle each bead end and join at the center to form an apex, or line of maximum circumference. The two rows of facets are normally offset. Bead shapes vary, depending on degree of facet modification from oval, through round, to elongate. All specimens exhibit circumferential surface striations, indicative of the mandrel-wound technique of manufacture. All specimens are semi-translucent to translucent. The major distinguishing feature between Type 1 varieties is color; therefore, all Type 1 specimens can be described in a tabular format (Table 21 ).

TABLE 21 Class 11, Series A, Type 1, Varieties a through j Beads\* Description and Metrics

Taxonomic Designation	Frequency	No. Measured	P. Association	Color		Length Range	Length Average	Width Range	Width Average	Bore Range	Figure	Comments
				Visual	Munsell							
Type 1 Va	20	7	6(1)	Blue	purplish Purple- Blue, 7.5 PB, 3/10	7.5-11.1	9.1	11.0-12.0	11.4	3.0	33 E	Dull surface patina; semi-translucent.
Vb	5	5	85(1)	Blue-grey	purplish Purple- Blue, 7.5 PB, 3/2	7.2-18.9	12.9	11.1-16.4	13.4	3.1-3.4	33 F	Dull surface; semi-translucent.
Vc	3	3		Turquoise	greenish Blue, 2.5 B, 5/6	18.9, 10.7, 20.0		12.6, 9.8, 12.7		2.5	33 G	Glossy surface patina; translucent; elongated shape.
Vd	1	1		Green	Green, 5.0 G, 6/4	5.9		9.2			33 H	Glossy surface; translucent.
Ve	2	2		Amber	Yellow-Red Yellow 10.0 YR, 5/10	8.2, 14.5		11.4, 17.8		3.4	33 I	Dull, chalk-white surface from decomposition; semi-translucent.
Vf	11	10	209(1)	Amber	Yellow-Red Yellow, 10.0 YR, 6/8	5.5-11.0	8.6	6.4-14.0	10.3	2.6-3.4	33 J	Dull to glossy surface, several specimens very glossy with greasy feeling, others dull.
Vg	6	6		Yellow	reddish Yellow, 2.5 Y, 8/8	8.3-10.0	9.1	9.0-11.6	10.2	3.4	33 K	Dull, chalk-white surface; semi-translucent.
Vh	27	11	145(1) 72(1)	Clear		7.2-19.2	10.0	10.5-14.7	11.7	2.3-3.4	33 L	Dull with patina to glossy-greasy surface; translucent; 2 elongate specimens.
Vi	4	3		Clear		9.0, 10.7, 11.3		9.9, 11.3, 11.7		3.0	33 M	Cloudy, slight patina, semi- translucent.
Vj	2	2		Milk-white		10.4, 9.9		10.0, 10.2		2.6	33 N	Light-blue cast; semi-translucent.

\*All dimensions in millimeters.

See Table for comparative evidence.

Discussion: Class 11, Series A, Type 1, Varieties a through j

All specimens were combined on one distribution map as an additional interpretative aid. Varieties a and h were first plotted individually to see if color differences were distributionally significant; this was not the case. The combined distribution map indicates that Type 1 beads occur in two very broad areas of concentration: (1) in an area including the northern portion of the church, the northwest corner of Feature 5 (original French stockade), and an area between the north stockade of Feature 5 and the south wall of the NNW rowhouse unit; and (2) an area within the central portion of the SW French rowhouse. Notable absences occur in areas of British military occupation. This distributional evidence, feature associations, and the comparative evidence listed in Table 27 suggest a French affiliation for Type 1 beads. Although Type 1 beads are known from as early as 1680 in the Great Lakes region, their presence at Fort Michilimackinac does not seem to date before 1730 to 1735. Interpretation: French, 1730-1760 (possibly as late as 1780 in French contexts).

Type 2 Nodular, "Mulberry"

All Type 2 beads exhibit molded glass knobs over their entire surface. The knobs generally occur in either two or three circumferential rows. The basic bead shape is barrel, although this has been modified by molding to produce knobs. Knobs on different specimens vary considerably in number, size, and shape. Many specimens exhibit circumferential surface striations. Several specimens exhibit longitudinal grooves which may be mold seams. The major distinguishing feature between Type 2 varieties is color. All Type 2 specimens can therefore be described in a tabular format (See Table 22 ).

TABLE 22 Class II, Series A, Type 2, Varieties a through g Beads\* Description and Metrics

Taxonomic Designation	Frequency	No. Measured	P. Associations	Color		Length Range	Length Average	Width Range	Width Average	Bore Range	Figure 33	Comments
				Visual	Munsell							
Type 2												
Va	5	5	315(1)	Gray-blue	Purplish Purple-Blue, 7.5 PB, 3/2	5.7-7.5	6.8	8.7-10.0	9.6	3.1-3.4	O	Glossy surface, patina; translucent.
Vb	4	4		Purple	Purple Red-Purple, 10.0 P, 5/10	8.4-10.0	9.2	9.9-10.6	10.1	2.4-3.4	P	Dull to glossy surface; shiny or chalky patina common; translucent.
Vc	2	2	145(1)	Light amber	reddish Yellow, 2.5 Y, 8/8	7.7, 7.2		9.8-10.5		3.0-3.2	Q	Surface semi-glossy with patina; translucent.
Vd	2	2		Light pink	purplish Red, 2.5 R, 8/2	7.5, 7.3		11.5-10.0		3.2	R	Glossy surface; translucent.
Ve	24	8	70(1)	Clear-silver		6.8-11.3	9.5	9.0-11.8	10.8	2.4-3.0	S	Clear with silver patina; translucent.
Vf	34	10	265(1) 118(1)	Clear		6.8-10.0	8.4	9.3-12.6	10.6	2.3-3.4	T	Cloudy-clear, slight patina on several specimens; translucent.
Vg	1	1		Yellow	Yellow, 5.0 Y, 8/8	7.5		8.9	2.8	2.8	U	This specimen is badly weathered and may be a Variety c bead.

\*All dimensions in millimeters.  
See Table for comparative evidence.

Discussion: Class II, Series A, Type 2, Varieties a through g

All specimens were combined on one distribution map as an additional interpretative aid. Varieties e and f were first plotted individually to see if color differences were distributionally significant; this was not the case. This distribution map indicates that Type 2 specimens occur in three well defined clusters: (1) in the area of the northwest corner of feature 81 (first expansion French stockade); (2) in the northwest corner of feature 5, earliest French stockade (including two units which line the inside of this stockade); and (3) in an area along the north side of the South-south French row-house unit. Feature contexts correspond with the above areal clusters and suggest a French affiliation for Type 2 specimens. Comparative evidence (Table 27 ) supports this conclusion and indicates a suggested date for this bead type of between 1690 and 1750. This bead type appears to have occurred in the earliest French contexts at Fort Michilimackinac. Interpretation: French, 1690-1760.

Type 3    Faceted, five sides

The three Type 3 varieties exhibit a tubular shape which has been modified by five pressed longitudinal facets. All specimens exhibit faint circumferential striations. The major distinguishing feature between Type 2 varieties is color. All Type 3 specimens can therefore be described in a tabular format (Table 23 ).

TABLE 23 Class II, Series A, Type 3, Varieties a through c Beads\* Description and Metrics

Taxonomic Designation	Frequency	No. Measured	P. Associations	Color		Length Range	Width Range	Bore Range	Figure	Comments
				Visual	Munsell					
Type 3										
Va	1	1	146(1)	Clear		12.9	11.0	2.8	33 V	Semi-glossy surface; translucent.
Vb	2	2		Turquoise	greenish Blue, 2.5 B, 5/6	13.7, 14.2	8.0, 9.0	2.3, 2.8	33W	Dull surface; highly air-bubble pitted; translucent.
Vc	1	1		Amber	Yellow-Red Yellow, 10.0 YR, 6/8	9.0	7.0	2.6	33 X	Dull surface; translucent.

\*All dimensions in millimeters.

See Table 27 for comparative evidence.

Type 4 Groove molded, washboard

Variety a Blue (Munsell: purplish Purple-Blue, 7.5 PB, 4/14), translucent.

Figure 33 Y

1 specimen

Dimensions (1 specimen): length, 10.2; width, 10.1; bore, 3.7.

Shape: barrel with flat to concave ends.

Surface: semi-glossy; heavy silver patina; marked by 28 longitudinal grooves which curve slightly between ends.

Type 5 Press flattened

Variety a Longitudinally flattened oval shape; surface decoration of white opaque glass or ceramic inlay design.

Figure 33 Z and AA

8 specimens

7 fragmentary specimens

Dimensions (2 specimens): length, 15.0, 17.0; width, 17.6, 17.0; thickness average, 6.2; bore, 3.0-2.8.

Shape: disk; originally oval; subsequent longitudinal compression produced rounded disk shape.

Surface: semi-glossy; highly leached; circumferential surface striations very common.

Decoration: opaque white ceramic or glass designs on both faces; decoration of one face is wavy longitudinal line with star offset on each side; on the other face decoration is a 1/4-moon in the shape of a face with a star offset on the face side.

Distribution: F.118(1).

Comparative: see Table 27

Type 6 Convex, highly visible, circumferential striations

Variety a Clear, translucent.

Figure 33 BB

4 specimens

Dimensions (4 specimens): length, 16.0-20.0, average, 18.0; width, 13.4-15.0, average, 14.1; bore, 3.4-3.6.

Surface: dull, highly patinated; very noticeable circumferential grooves wind around the bead between the ends.

Comparative: see Table 27

Interpretation: French, 1700-1750; see also discussion of CII, SA, T11.

Variety b Milk-white, semi-translucent.

Figure 33 CC

25 specimens

6 fragmentary specimens

Dimensions (9 specimens): length, 11.0-24.0, average, 16.7; width, 9.0-19.0, average, 12.7; bore, 2.7-3.6.

Surface: dull, several specimens have slight patina; circumferential grooves and striations very common.

Distribution: F.31(1), F.331(1), F.70(2), F.209(1), F.88(1); areal distribution not diagnostic, although feature associations suggest French affiliation.

Interpretation: French, 1700-1750; see also discussion of CII, SA, T11.

Type 7 Convex, obliterated circumferential striations, highly polished

Variety a Milky-white, opaque.

Figure 33 DD

3 specimens

Dimensions (3 specimens): length, 21.5, 23.4, 27.5; width, 17.3, 16.0, 17.7; bore, 2.8-3.5.

Surface: highly polished, glossy; circumferential striations present but more noticeable in the glass core.

Distribution: F.70(1).

Interpretation: French, 1700-1760; see also discussion of CII, SA, T11.

Variety b Blue (Munsell: Purple Blue, 5.0 PB, 5/10), opaque.

Figure 33 EE

1 specimen

Dimensions (1 specimen): length, 18.3; width, 14.3; bore, 2.0.

Structure: circumferential lines noted in glass body.

Surface: highly polished.

Type 8 Round, highly visible circumferential striations

Variety a Clear to cloudy, semi-translucent.

Figure 33 FF

87 specimens

Dimensions (23 specimens): length, 7.5, 20.2, average, 11.5; width, 8.9-18.5, average, 12.0; bore, 2.2-3.4.



Surface: dull to semi-glossy; several have light silver patina; 49 specimens have smooth, greasy feeling and appearance; these specimens also have light blue cast or hue; circumferential striations common and deep in many cases.

Distribution: F.254(1), F.262(1), F.147(1), F.97(1), F.70(1), F.296(1), F.88(1), F.118(1), F.267(1), F.241(1).

Comparative: see Table 27

Interpretation: French, 1700-1750; see also discussion of CII, SA, T11.

Variety b Amber (Munsell: Yellow-Red Yellow, 10.0 YR, 6/8), semi-translucent.

Figure 33 GG

10 specimens

Dimensions (7 specimens): length, 8.0-9.5, average, 8.8; width, 7.5-10.4, average, 9.4; bore, 2.6-3.2

Surface: dull and chalky; circumferential striations common.

Distribution: F.85(1), F.209(1).

Comparative: see Table 27

Interpretation: French, 1700-1750; based on feature associations and typological similarity to CII, CA, T8, Va.

Type 9 Round, obliterated circumferential striations, highly polished

Variety a Light blue (Munsell: Blue, 5.0 B 7/6), opaque.

Figure 33 HH

1 specimen

Dimensions (1 specimen): length, 12.4; width, 12.8; bore, 3.8.

Surface: highly-polished, glossy; numerous air-bubble pits; circumferential striations notably absent except under microscopic examination.

Variety b Amber (Munsell: Yellow-Red Yellow, 10.0 YR, 6/8, translucent.

Figure 33 II

1 specimen

Dimensions (1 specimen): length, 12.6; width, 13.0; bore, 2.7.

Surface: highly-polished, glossy, patinated; circumferential striations rare.

Variety c    Green (Munsell: Green-Yellow, 5.06 Y, 8/8), translucent.

Figure 33 JJ

1 specimen

Dimensions (1 specimen): length, 10.2; width, 11.1; bore, 3.3.

Surface: highly-polished, glossy; air-bubbles present throughout core.

Type 10    Doughnut shaped, highly visible circumferential striations

Variety a    Clear to cloudy; semi-translucent.

Figure 33 KK

15 specimens

Dimensions (8 specimens): length, 4.3-7.9, average, 6.1; width, 10.6-12.4, average, 11.4; bore, 2.4-3.5.

Surface: dull, chalky; longitudinal striations common.

Comparative: see Table 27

Interpretation: French, 1700-1750; see also discussion of CII, SA, T11.

Type 11    Doughnut shaped, obliterated surface striations

Type 11 bead shape varies from a standard doughnut shape with slightly incurving ends to doughnut shaped with convex ends. This latter shape is referred to as modified doughnut. All Type 11 specimens are translucent and exhibit a glossy to semi-glossy surface appearance with longitudinal striations noticeable primarily on the bead ends. The major distinguishing feature between Type 11 varieties is color. All Type 11 varieties can therefore be described in a tabular format. (Table 24 )

TABLE 24 Class II, Series A, Type II, Varieties a through g Beads\* Description and Metrics

Taxonomic Designation	Frequency	No. Measured	P. Associations	Color		Length Range	Length Range	Width Range	Width Range	Bore Range	Figure 33	Comments
				Visual	Munsell							
Type 11												
Va	8	6		Clear		5.4-7.2	6.3	10.5-13.2	11.7	3.1-3.3	LL	Dull surface, translucent-cloudy.
Vb	6	5	209(2)	Dark blue	purplish Purple-Blue, 7.5 PB, 3/10	5.2-7.8	6.3	12.2-14.0	12.8	1.5-3.5	MM	Semi-glossy surface, translucent.
Vc	28	14	210(1)	Amber	Yellow-Red Yellow, 10.0 YR, 6/8	5.0-8.3	6.0	11.2-13.3	12.2	1.7-3.2	NN	Glossy, patinated surface; translucent.
Vd	6	6	100(1)	Dark Amber	reddish Yellow-Red, 2.5 YR, 5/10	6.3-8.3	7.3	11.9-13.3	12.6	1.9-3.7	OO	Glossy, patinated surface; translucent.
Ve	4	3		Light Amber	reddish Yellow, 2.5 Y, 8/6.	6.8, 8.4, 66	12.0, 13.8, 11.3		1.9-2.4		PP	Semi-glossy, patinated surface; translucent.
Vf	5	2	144(1)	Turquoise	greenish Blue, 2.5 B, 5/6	6.6, 7.0	12.5, 12.8		2.3-2.7		QQ	Glossy surface; translucent.

\*All dimensions in millimeters.  
See Table 27 for comparative evidence.

Discussion: Class II, Series A, Type 11

All specimens were combined on one distribution map as an additional interpretative aid. Variety c was plotted individually to see if color differences were distributionally significant; this was not the case. One broad area of concentration is noted from this map: within the known bounds of Feature 5, the earliest French stockade. Feature associations support this distributional evidence in indicating French affiliation for Type 11 beads. Interpretation: French, 1700-1760.

An additional distribution map was plotted for a number of different types (including Type 11, Variety a) which show marked similarities in structure and surface appearance, although shapes differ between types. The types compared were:

CII, SA, T6, Va and Vb  
 CII, SA, T7, Va  
 CII, SA, T8, Va  
 CII, SA, T10, Va  
 CII, SA, T11, Va

Site distribution and feature associations for the above types suggest their use throughout the French period of control. Interpretation: French, 1700-1760.

Type 12 Elongate, spiral shape

Variety a Amber (Munsell: Yellow-Red Yellow, 10.0 YR, 6/8), translucent.

Figure 33 RR

1 specimen

Dimensions (1 specimen): length, 13.7; width, 10.3; bore, 3.0.

Structure: 4, joined, doughnut-shaped segments.

Surface: dull, chalky.

Discussion: the structure of this specific bead may represent a stage in the process of manufacturing this shape (spiral-shaped) of bead.

Type 13 Conical shape

Variety a Light amber (Munsell: Yellow-Red Yellow, 10.0 YR, 6/8), semi-translucent.

Figure 33 SS

1 specimen

Dimensions (1 specimen): length, 8.0; width, 8.9; bore, 3.0.

Shape: edges taper longitudinally on a convex plane from maximum width of 11.4 mm to minimum width of 5.8 mm.  
 Surface: dull, chalky; circumferential striations common.  
 Distribution: F.145(1).

Variety b Dark amber (Munsell: reddish Yellow-Red, 2.5 YR, 5/10), semi-translucent.

Figure 33 TT

1 specimen

Dimensions (1 specimen): length, 11.4; width, 8.2; bore, 2.6.

Shape: tapers longitudinally on a straight plane from maximum width of 8.2 mm to minimum width of 5.4 mm.  
 Surface: dull, chalky; circumferential striations common.

Variety c Chalk white, opaque.

Figure 33 UU

1 specimen

Dimensions (specimen): length, 8.0; width, 8.2; bore, 1.6.

Shape: tapers longitudinally on a straight plane from maximum width of 8.2 mm to minimum width of 3.7 mm.  
 Surface: dull, chalky, eroded; circumferential striations present.

Variety d Clear, cloudy, semi-translucent.

Figure 33 VV

1 specimen

Dimensions (1 specimen); length, 7.2; width, 7.2; bore, 2.3.

Shape: tapers longitudinally on a straight plane from maximum width of 7.2 mm to minimum width of 5.4 mm.  
 Surface: dull, highly eroded; circumferential striations obliterated because of surface erosion.

Type 14 Conical, molded

Variety a Light amber (Munsell: reddish Yellow, 2.5 Y, 8/8), semi-translucent; four pressed facets.

Figure 33 WW

1 specimen

Dimensions (1 specimen): length, 8.0; width, 8.9; bore, 3.0.

Shape: tapers longitudinally on the straight plane from maximum width of 8.9 mm to minimum width of 4.8 mm.

Surface: dully, chalky; 4, round, pressed facets are present.

Type 15 Convexo-elongate

Variety a Amber (Munsell: Yellow-Red Yellow, 10.0 YR, 6/8), translucent.

Figure 33 XX

2 specimens

Dimensions (2 specimens); length, 11.4, 16.1; width, 8.8, 10.9; bore, 2.6, 2.8.

Surface: semi-glossy; circumferential striations present but shallow.

Series B Class II, Series B compound structure beads have not been found at Fort Michilimackinac.

Series C Complex Structure

Type 1 Convex

Varieties a through e White, opaque.

Five of the six Type 1 varieties differ only in design and color of surface decoration and therefore may be described in tabular form. Varieties a through e (Table 25 ) all exhibit a white, opaque body with colored circumferential glass insets. These insets are raised slightly above the bead surface in several cases.

TABLE 25 Class II, Series C, Type 1, Varieties a through e Beads\* Description and Metrics

Taxonomy Designation	Frequency	No. Measured	P. Associations	Visual Color of Insets	Length Range	Width Range	Bore Range	Figure 34	Comments
Type 1									
Va	3	3	262(1)	Pink and blue	11.9, 14.2, 13.0	7.5, 8.0, 6.9	1.6, 1.7, 1.6	A	Blue, wavy, circumferential inset around each end; a pink inset around center.
Vb	1	1		Blue	13.9	7.7	1.5	B	Blue, wavy, circumferential inset around each end; 3 blue insets around center.
Vc	3	3		Pink	13.5, 13.2, 13.2	7.3, 7.0, 6.4	1.5, 1.7, 1.7	C	1 pink, circumferential inset around center; leaf motif.
Vd	1	1		Yellow	8.5	4.6	1.6	D	Yellow, circumferential inset swirled around bead between ends.
Ve	1	1	90(1)	Gold	12.5	7.9	1.9	E	1 gold circumferential inset around center; also, evidence of insets of unknown color around each end.

\*All dimensions in millimeters.  
See Table 27 for comparative evidence.

Variety f Black, opaque.

Figure 34 F

1 specimen

Dimensions (1 specimen): length, 11.6; width, 5.6; bore, 1.6.

Surface: semi-glossy, patinated.

Decoration: 1 white, wavy, glass circumferential inset around each end with 1 wavy circumferential inset around center.

Type 2 Round

Variety a Mulberry (Munsell: Red, 5.0 R, 4/12), semi-translucent; insets of yellow and white glass.

Figure 34 G

6 specimens

Dimensions (6 specimens): length, 8.0-9.0, average, 8.6; width, 9.2-10.0, average, 9.7; bore, 2.0-2.6.

Surface: semi-glossy, slightly patinated; rough and air-bubble pitted on all specimens.

Decoration: raised set of white glass insets which encircle center of bead producing loop effect; set of 4 equally spaced yellow glass dots on each side of center decoration.

Variety b Black, opaque; green and white glass dots.

Figure 34 H

1 fragmentary specimen

Dimensions (1 specimen): length, 6.5; width, 7.6; bore, 1.9.

Surface: semi-glossy.

Decoration: randomly-spaced, irregularly-shaped glass dots (10 on 1/2 bead fragment) composed of white dot on which green dot is superimposed.

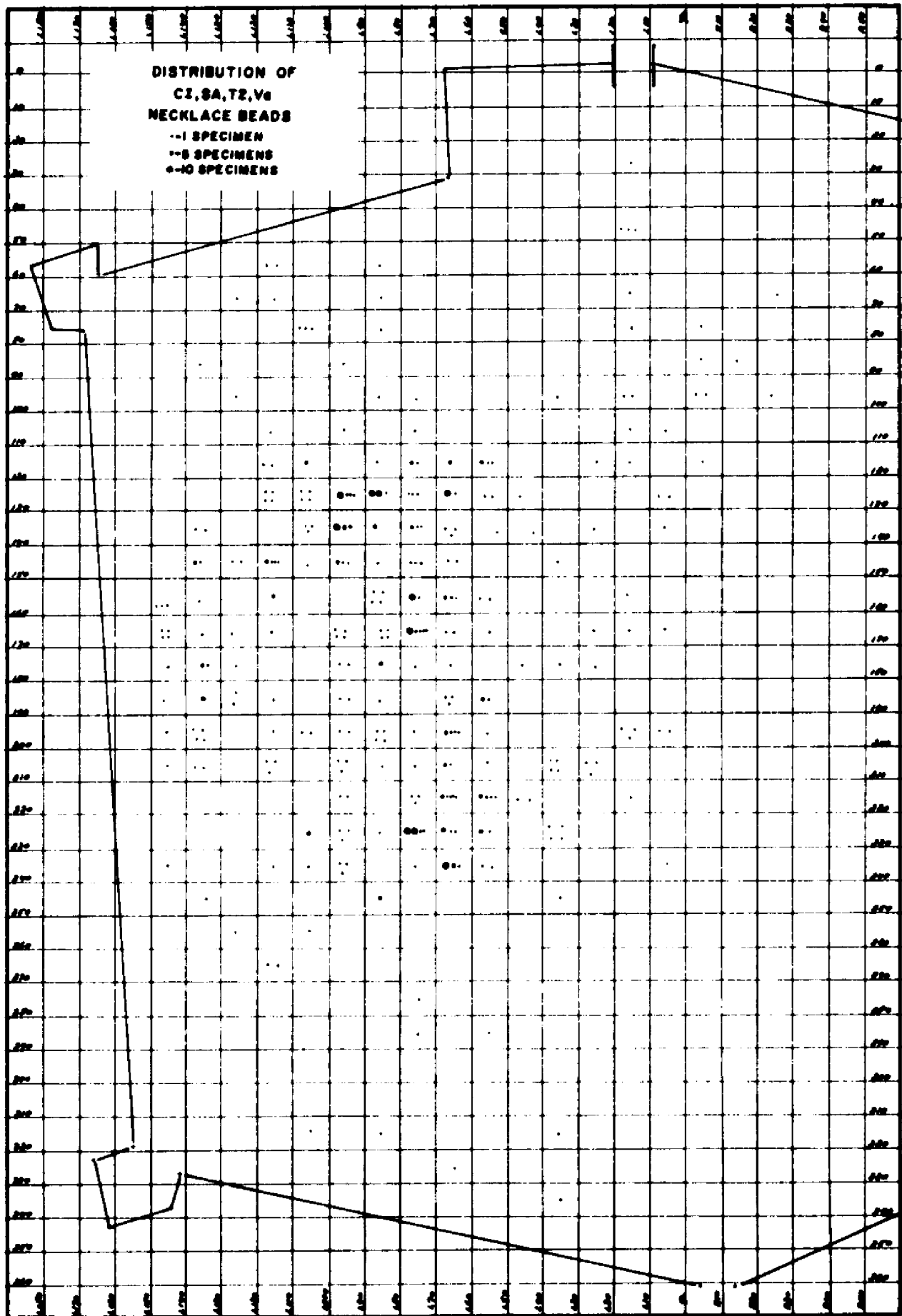


### Discussion: Necklace Beads

An analysis of the interrelationships between the formal, spatial, and temporal dimensions of necklace beads has provided a number of resources for site interpretation. The frequency and context of the different bead types which have been described indicate: (1) differences in settlement types, or, contrasting social, political, and economic emphases between French and British periods of control; (2) the presence and location of activity areas, that is, trade good supply and distribution areas; (3) dates, nationality of use, and function of specific structures; and (4) the relative occupation contemporaneity of different structures. Each of these has been considered in greater detail in Chapter 4.

Necklace bead interpretations have been presented within the context of specific bead type descriptions and have been summarized in Table 26. Reference to this table indicates that the majority of bead types recovered at the site are attributable to the French period of control, although several types designated as French have also been found in limited quantities in British contexts. This is an indication of the dual French and British occupation of the site after 1761. Dates assigned to bead types are generally very broad and could not be more narrowly defined with any degree of accuracy. This reflects both the information contained in comparative evidence and the fact that many bead types were in common use over extensive periods of time.

**Figure 30    Distribution of  
CI, SA, T2, Va Necklace Beads**



**Figure 31    Distribution of  
CI, SA, T2, Va Molten Necklace Beads**

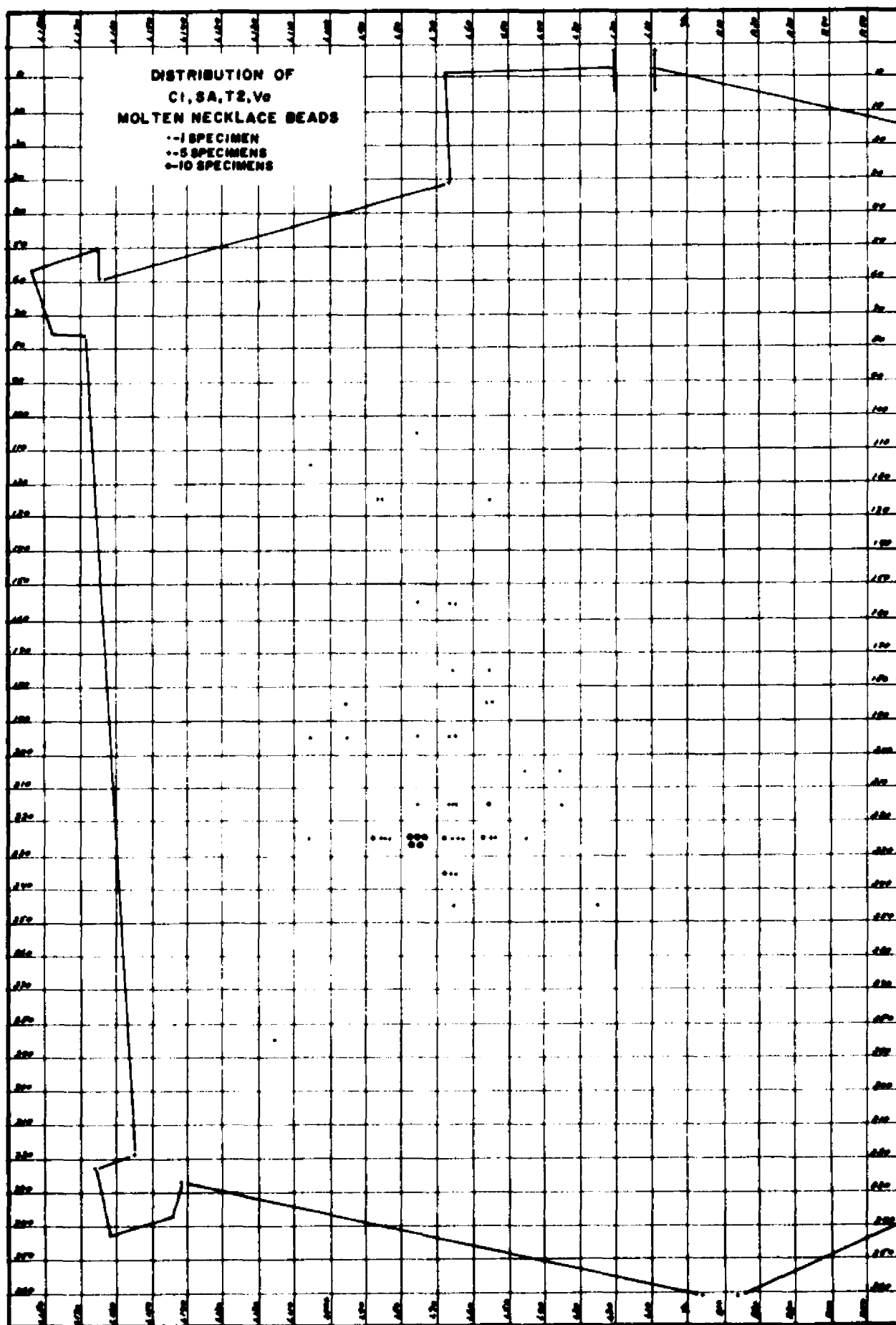


Figure 32 Necklace Beads

Figure Designation	Taxonomic Designation	Catalogue Number MS2	Figure Designation	Taxonomic Designation	Catalogue Number MS2
A	CI, SA, T1,	Va 735	OO	CI, SA, T13,	Va 713
B		Vb 659	PP	CI, SB, T1,	Va 2016
C		Vc 1	QQ	CI, SB, T2,	Va 2056
D	CI, SA, T2,	Va 1864	RR		Vb 2228
E		Vb 1	SS	CI, SB, T3,	Va 742
F		Vc 2145	TT	CI, SC, T1,	Va 2003
G	CI, SA, T3,	Va 2008	UU		Vb 1201
H		Vb 2003	VV		Vc 339
I		Vc 1705	WW		Vd 2008
J		Vd 1	XX	CI, SC, T2,	Va 1768
K		Ve 1	YY		Vb 2101
L		Vf 1916	ZZ		Vc 3150
M	CI, SA, T4,	Va 1866	AAA		Vd 2082
N		Vb 1	BBB	CI, SC, T3,	Va 1483
O		Vc 1	CCC		Vb 645
P	CI, SA, T5,	Va 1911	DDD		Vc 1511
Q		Vb 2049(?)	EEE		Vd 1
R		Vc 1779	FFF		Ve 1
S		Vd 2424	GGG		Vf 1
T		Ve 2271	HHH		Vg 1
U		Vf 1	III	CI, SC, T4,	Va 1
V		Vg 1	JJJ		Vb 1517
W		Vh 1	KKK		Vc 1
X	CI, SA, T6,	Va 1	LLL		Vd 1
Y		Vb 2550	MMM	CI, SC, T5,	Va 1
Z		Vc 1775	NNN		Vb 1001
AA		Vd 1	OOO		Vc 2328
BB		Ve 2026	PPP	CI, SC, T6,	Va 1
CC	CI, SA, T7,	Va 1314	QQQ	CI, SC, T7,	Va 1004
DD	CI, SA, T8,	Va 1999	RRR		Vb 1151
EE	CI, SA, T9,	Va 1556	SSS		Vc 140
FF		Vb 1441	TTT		Vd 1220
GG		Vc 1	UUU		Ve 1915
HH		Vd 2025	VVV		Vf 2245
II	CI, SA, T10,	Va 3351			
JJ	CI, SA, T11,	Va 1			
KK		Vb 1			
LL	CI, SA, T12,	Va 468			
MM		Vb 1188			
NN		Vc 1993			

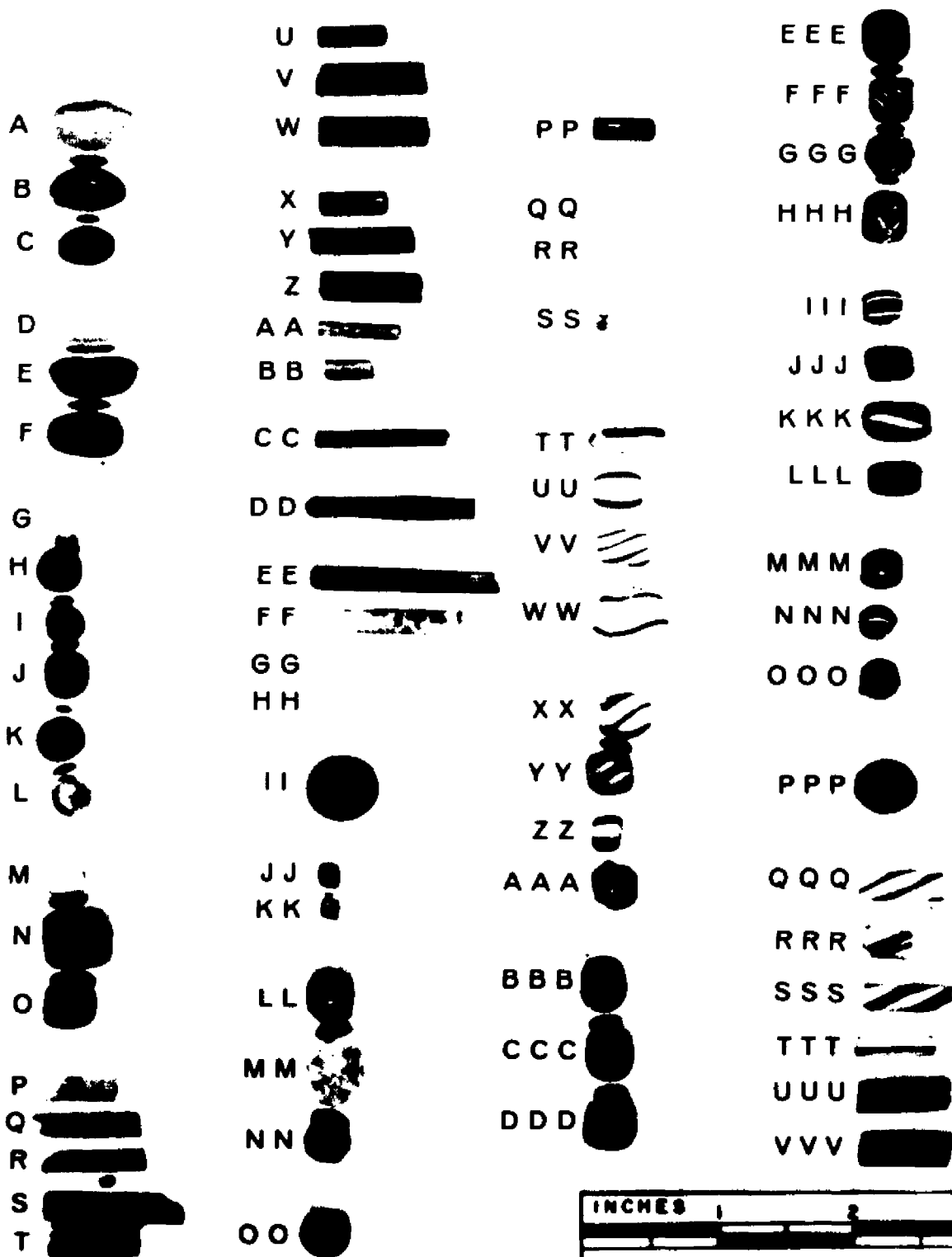
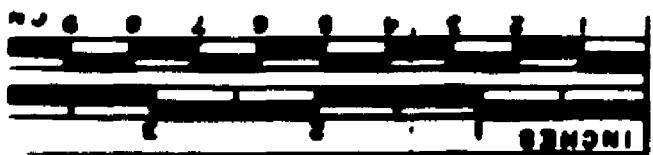


Figure 33 Necklace Beads

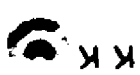
Figure Designation	Taxonomic Designation	Catalogue Number MS2
A	CI, SC, T8, Va	1799
B	CI, SD, T1, Va	2206
C	CI, SD, T2, Va	1742
D	CI, SD, T3, Va	1
E	CII, SA, T1, Va	1
F		Vb 2315
G		Vc 437
H		Vd 1849
I		Ve 253
J		Vf 829
K		Vg 1920
L		Vh 3073
M		Vi 637
N		Vj 1019
O	CII, SA, T2, Va	2363
P		Vb 1007
Q		Vc 1
R		Vd 632
S		Ve 1019
T		Vf 3864
U		Vg 1
V	CII, SA, T3, Va	1913
W		Vb 1233
X		Vc 1124
Y	CII, SA, T4, Va	2414
Z	CII, SA, T5, Va	290

Figure Designation	Taxonomic Designation	Catalogue Number MS2
AA	CII, SA, T5, Va	1
BB	CII, SA, T6, Va	1
CC		Vb 2987
DD	CII, SA, T7, Va	714
EE		Vb 1
FF	CII, SA, T8, Va	3016
GG		Vb 1416
HH	CII, SA, T9, Va	2483
II		Vb 1308
JJ		Vc 1
KK	CII, SA, T10, Va	1660
LL	CII, SA, T11, Va	1875
MM		Vb 1
NN		Vc 736
OO		Vd 2026
PP		Ve 1
QQ		Vf 1232
RR	CII, SA, T12, Va	1197
SS	CII, SA, T13, Va	1
TT		Vb 105
UU		Vc 1
VV		Vd 1019
WW	CII, SA, T14, Va	1592
XX	CII, SA, T15, Va	1





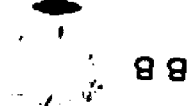
UU



FF



DD



UU



SS



HH



FF



CC



Figure 34 Necklace Beads

Figure Designation	Taxonomic Designation	Catalogue Number MS <sup>2</sup>
A	CII, SC, T1, Va	2445
B		Vb 2852
C		Vc 1
D		Vd 069
E		Ve 1517
F		Vf 1480
G	CII, SC, T2, Va	2497
H		Vb 2880

A B C D E F G H 

Table 26 Necklace Bead Interpretations

Taxonomic Designation			Nationality of Use and Date			Taxonomic Designation			Nationality of Use and Date			Taxonomic Designation			Nationality of Use and Date		
CI, SA, T1,	Va	French, 1700-1750	T3,	Va	French, 1670-1800	T2,	Vj	French, 1730-1760	CI, SC, T1,	Vb	none	T2,	Va	French, 1690-1750	CI, SC, T1,	Vb	none
	Vb	none		Vb	French, 1680-1760		Va	French, 1690-1750		Vc	French, 1700-1750		Vb	French, 1690-1750		Vc	French, 1690-1750
T2,	Vc	French, 1700-1740	CI, SC, T1,	Vc	French, 1700-1750	T2,	Vd	French, 1690-1750	CI, SC, T1,	Vd	French, 1700-1750	T2,	Vc	French, 1690-1750	CI, SC, T1,	Vd	French, 1690-1750
	Vb	none		Vd	French, 1700-1750		Ve	French, 1690-1750		Ve	French, 1700-1750		Vd	French, 1690-1750		Ve	French, 1690-1750
T3,	Vc	none	T2,	Va	French, 1700-1750	T3,	Vf	French, 1690-1750	T2,	Vb	French, 1700-1750	T3,	Vf	French, 1690-1750	T2,	Vg	French, 1690-1750
	Vd	French, 1710-1750		Vb	French, 1700-1750		Vg	French, 1690-1750		Vc	none		Va	none		Vb	none
T4,	Ve	none	T3,	Vc	French, 1700-1740	T4,	Vh	French, 1700-1760	T3,	Vd	none	T4,	Vb	none	T4,	Vc	none
	Vf	none		Vd	none	T5,	Vi	French, 1700-1760		Ve	none		Vc	French, 1700-1740		Vd	none
T5,	Vg	French, 1710-1750	T4,	Vf	French, 1700-1740	T5,	Vj	French, 1700-1760	T5,	Vf	French, 1700-1740	T6,	Va	French, 1700-1760	T6,	Va	French, 1700-1760
	Vh	none		Vg	French, 1680-1750		Vk	French, 1680-1750		Vg	French, 1680-1750		Vb	French, 1700-1760		Vb	French, 1700-1760
T6,	Vi	French, 1600-1700	T5,	Vh	French, 1700-1760	T6,	Vl	French, 1700-1760	T6,	Vh	French, 1700-1760	T7,	Vc	French, 1700-1760	T7,	Vc	French, 1700-1760
	Vb	French		Vi	French, 1700-1760		Vm	French, 1700-1760		Vi	French, 1700-1760		Vd	French, 1700-1760		Vd	French, 1700-1760
T7,	Vc	none	T6,	Vj	French, 1700-1760	T7,	Vn	French, 1700-1760	T7,	Vj	French, 1700-1760	T8,	Ve	French, 1700-1760	T8,	Ve	French, 1700-1760
	Vd	none		Vk	French, 1700-1760		Vo	French, 1700-1760		Vk	French, 1700-1760		Vf	French, 1700-1760		Vf	French, 1700-1760
T8,	Ve	none	T7,	Vl	French, 1700-1760	T8,	Vp	French, 1700-1760	T8,	Vl	French, 1700-1760	T9,	Vg	French, 1700-1760	T9,	Vg	French, 1700-1760
	Vf	French, 1630-1760		Vm	French, 1700-1760		Vq	French, 1700-1760		Vm	French, 1700-1760		Vh	French, 1700-1760		Vh	French, 1700-1760
T9,	Vg	French, 1730-1760	T8,	Vn	French, 1700-1760	T9,	Vi	French, 1700-1760	T9,	Vn	French, 1700-1760	T10,	Vi	French, 1700-1760	T10,	Vi	French, 1700-1760
	Vh	none		Vo	French, 1700-1760		Vj	French, 1700-1760		Vo	French, 1700-1760		Vb	French, 1700-1760		Vb	French, 1700-1760
T10,	Vi	French, 1670-1750	T9,	Vp	French, 1700-1760	T10,	Vk	French, 1700-1760	T10,	Vp	French, 1700-1760	T11,	Vc	French, 1700-1760	T11,	Vc	French, 1700-1760
	Vj	1750-1780		Vq	French, 1700-1760		Vl	French, 1700-1760		Vq	French, 1700-1760		Vd	French, 1700-1760		Vd	French, 1700-1760
T11,	Vb	none	T10,	Vr	French, 1700-1760	T11,	Vm	French, 1700-1760	T11,	Vr	French, 1700-1760	T12,	Ve	French, 1700-1760	T12,	Ve	French, 1700-1760
	Vc	none		Vs	French, 1700-1760		Vn	French, 1700-1760		Vs	French, 1700-1760		Vf	French, 1700-1760		Vf	French, 1700-1760
T12,	Vd	none	T11,	Vt	French, 1700-1760	T12,	Vo	French, 1700-1760	T12,	Vt	French, 1700-1760	T13,	Vg	French, 1700-1760	T13,	Vg	French, 1700-1760
	Ve	none		Vu	French, 1700-1760		Vp	French, 1700-1760		Vt	French, 1700-1760		Vh	French, 1700-1760		Vh	French, 1700-1760
T13,	Vf	none	T12,	Vv	French, 1700-1760	T13,	Vq	French, 1700-1760	T13,	Vv	French, 1700-1760	T14,	Vi	French, 1700-1760	T14,	Vi	French, 1700-1760
	Vg	none		Vw	French, 1700-1760		Vr	French, 1700-1760		Vv	French, 1700-1760		Vj	French, 1700-1760		Vj	French, 1700-1760
CI, SB, T1,	Vh	none	T13,	Vx	French, 1700-1760	T14,	Vs	French, 1700-1760	T14,	Vx	French, 1700-1760	T15,	Vk	French, 1700-1760	T15,	Vk	French, 1700-1760
	Vb	none		Vy	French, 1700-1760		Vt	French, 1700-1760		Vy	French, 1700-1760		Vl	French, 1700-1760		Vl	French, 1700-1760
T2,	Vc	none	T14,	Vz	French, 1700-1760	T15,	Vu	French, 1700-1760	T15,	Vz	French, 1700-1760	SC, T1,	Vm	French, 1700-1760	SC, T1,	Vm	French, 1700-1760
	Vd	none		Va	French, 1700-1760		Vv	French, 1700-1760		Va	French, 1700-1760		Vn	French, 1700-1760		Vn	French, 1700-1760
CI, SB, T2,	Vi	French, 1730-1760	T15,	Vb	French, 1730-1760	SC, T1,	Vw	French, 1730-1760	SC, T1,	Vb	French, 1730-1760	T2,	Va	French, 1730-1760	T2,	Va	French, 1730-1760
	Vb	none		Vc	French, 1730-1760		Vx	French, 1730-1760		Vc	French, 1730-1760		Vb	French, 1730-1760		Vb	French, 1730-1760

TABLE 27    Necklace Beads:    Comparative Evidence

Taxonomic Designation				Site	Source	Date	Comparative Type	Comparative Frequency
CI, SA, T1, Va				Southern Compress Fish Hatchery Lawton	Webb & Gregory 1965: 18	1714-1803	7	3
					Webb & Gregory 1965: 21	Early 18th	1	142
					Webb & Gregory 1965: 24		4	1
					Harris & Harris 1967: 141	1700-1740	16	
CI, SA, T1, Vc					Harris & Harris 1967: 141	1700-1740	17	
CI, SA, T2, Va				Southern Compress Wilkinson	Webb & Gregory 1965: 18	1714-1803	1	7
					Webb & Gregory 1965: 27	1803-1820	1	1
				Los Adaes	Webb & Gregory 1965: 28		1	1
					Harris & Harris 1967: 139	1700-1767	2	
				Bell	Wittry 1963: 31	1680-1730		
				Fatherland		1682-1730		
CI, SA, T2, Vb				Lawton	Quimby 1966: 192-196	1700-1781		
					Webb & Gregory 1965: 24		9	2
					Harris & Harris 1967: 140	1700-1820	9	
CI, SA, T3, Va				Lawton	Webb & Gregory 1965: 24		3	1
					Webb & Gregory 1965: 27	1803-1820	3	1
				Wilkinson	Harris & Harris 1967: 140	1700-1820	3	
CI, SA, T3, Vd					Harris & Harris 1967: 141	1700-1740	18	
					Whitney Pratt 1961: 15	1710-1745	92	
CI, SA, T4, Va				Southern Compress Fish Hatchery	Webb & Gregory 1965: 18	1714-1803	3	23
					Webb & Gregory 1965: 22	Early 18th	3	95
				Lawton	Webb & Gregory 1965: 24		2	2
					Harris & Harris 1967: 140	1700-1836	4	
				Benson	Benson 1967: 122	1600-1700		38
				Lasanen	Stone n.d.	1680-1705	Cat. 4	47
CI, SA, T4, Vb				Lasanen	Stone n.d.	1680-1705	Cat. 3, Vc	1
CI, SA, T4, Vc				Lawton	Webb & Gregory 1965: 25		13	4
					Harris & Harris 1967: 140	1700-1836	10	
				Ahumada	Tunnell 1967: 49	1756-1771	1	5

TABLE 27 (Cont.)

Taxonomic Designation				Site	Source	Date	Comparative Type	Comparative Frequency
CI, SA, T6, Va				Philip Mound	Benson	1967: 123	1600-1700	9
CI, SA, T8, Va				Sainte Marie I	Quimby	1966: 183-184	1639-1649	
				Ossossane	Quimby	1966: 184-185	1636	
CI, SA, T10, Va				Lasanen	Stone	n.d.	1680-1705	Cat. 3, Va 1215
CI, SA, T11, Va				Lawton	Webb & Gregory	1965: 26		18 2
					Harris & Harris	1967: 152	1767-1780	138
				Ahumada	Tunnell	1967: 50	1756-1771	3 586
CI, SB, T1, Va					Harris & Harris	1967: 144		55
CI, SB, T3, Va				Fish Hatchery	Webb & Gregory	1965: 22	Early 18th	4 148
					Harris & Harris	1967: 140	1700-1836	5
				Ahumada	Tunnell	1967: 55	1756-1771	15 169
				Lasanen	Stone	n.d.	1680-1705	CB, T1, Va 10
CI, SC, T1, Va					Harris & Harris	1967: 141	1700-1740	24
				Fatherland	Quimby	1966: 192-196	1682-1730	
				Ft. St. Joseph	Quimby	1966: 192-196	1700-1781	
CI, SC, T1, Vb				Ft. Albany	Quimby	1966: 190-191	1680-1715	
CI, SC, T1, Vc				Fatherland	Quimby	1966: 192-196	1682-1730	
				Ft. St. Joseph	Quimby	1966: 192-196	1700-1781	
					Harris & Harris	1967: 142	1700-1740	28
CI, SC, T2, Vb				Fatherland	Quimby	1966: 192-196	1683-1730	
				Ft. St. Joseph	Quimby	1966: 192-196	1700-1781	
CI, SC, T3, Vc					Harris & Harris	1967: 143	1700-1740	39
CI, SC, T3, Vf					Harris & Harris	1967: 143	1700-1740	38
				Vg Pen	Pratt	n.d.	1685-1696	181
				Perkins	Pratt	n.d.	Early 18th	230
				Ft. Albany	Quimby	1966: 190-191	1680-1715	
				Fatherland	Quimby	1966: 192-196	1682-1730	
				Ft. St. Joseph	Quimby	1966: 192-196	1700-1781	
CI, SC, T4, Va				Southern Compress	Webb & Gregory	1965: 20	1714-1803	12 1
					Harris & Harris	1967: 142	1700-1740	29

TABLE 27 (Cont.)

Taxonomic Designation				Site	Source	Date	Comparative Type	Comparative Frequency
CI, SC, T4, Vc				Fatherland	Quimby	1966: 192-196	1682-1730	
				Ft. St. Joseph	Quimby	1966: 192-196	1700-1781	
CI, SD, T1, Va					Harris & Harris	1967: 145	1740-1820	67
				Philip Mound	Benson	1967: 123	1600-1700	1
CII, SA, T1, Va					Harris & Harris	1967: 143	1700-1820	40
					Pratt	1961: 16		103
				Bell	Wittry	1963: 30-32	1680-1730	10
CII, SA, T1, Vd				Bell	Wittry	1963: 30-32	1680-1730	1
CII, SA, T1, Vf				Bell	Wittry	1963: 30-32	1680-1730	5
				Pen	Pratt	n.d.	1685-1696	202
CII, SA, T1, Vh				Pen	Pratt	n.d.	1685-1696	200
CII, SA, T1, Vi				Fatherland	Quimby	1966: 192-196	1682-1730	
				Ft. St. Joseph	Quimby	1966: 192-196	1700-1781	
CII, SA, T1, Vj				Southern Compress	Webb & Gregory	1965: 18	1714-1803	6
					Harris & Harris	1967: 143	1700-1820	41
				Bell	Wittry	1963: 30-32	1680-1730	3
CII, SA, T2, Vc				Perkins	Pratt	n.d.	Early 18th	240
CII, SA, T2, Vd				Southern Compress	Webb & Gregory	1965: 20	1714-1803	8
CII, SA, T2, Vf					Harris & Harris	1967: 143	1700-1740	42
				Pen	Pratt	n.d.	1685-1696	207
CII, SA, T5,				Birch Island	Greenman	1951: 55	1750-1800	IIa
CII, SA, T6, Va					Harris & Harris	1967: 144	1700-1830	54
CII, SA, T6, Vb				Whitney	Pratt	1961: 15	1710-1745	100
				Brewer	Pratt	1961: 16	1710-	100
				Bell	Wittry	1963: 30-32	1680-1730	43
				Perkins	Pratt	n.d.	Early 18th	100

TABLE 27 (Cont.)

Taxonomic Designation	Site	Source	Date	Comparative Type	Comparative Frequency
CII, SA, T8, Va	Fish Hatchery	Webb & Gregory 1965: 22	Early 18th	7	34
		Harris & Harris 1967: 144	1700-1820	53	
CII, SA, T8, Vb		Harris & Harris 1967: 144	1700-1740	52	
CII, SA, T10, Va		Harris & Harris 1967: 148		93	
CII, SA, T11, Vc		Harris & Harris 1967: 148		94	
CII, SC, T2, Vb	A.D.A.	Herrick 1958: 18-19	pre- 1760 1820-1850	48	12



## Classification and Description: Seed Beads

The following seed bead classification is based on the attributes and criteria defined for the classification of necklace beads. An attempt has not been made to interpret individual seed bead types, since seed beads were systematically collected at the site only during one field season. The primary concentration of seed beads is thus restricted to a series of 10-foot units excavated during that season. Analyses based on this skewed evidence would result in misinterpretation since distributional differences are primarily a function of different excavation techniques. The seed bead descriptive format has also been altered to include only qualitative and quantitative information. Comparative evidence, feature associations, general site distribution, and interpretations have been omitted. The majority of seed bead types are described in a tabular format.

### Class I    Hollow-Cane Method

#### Series A    Simple Construction

##### Type 1    Doughnut shape

Type 1 seed beads include 25 different varieties which have been distinguished primarily on the basis of color. Shape varies between varieties from doughnut to semi-barrel. Table 28 presents the description of Type 1 varieties a - y seed beads.

##### Type 2    Tubular

Three Type 2 varieties are represented (Table 29 ). These are distinguished primarily on the basis of color.

TABLE 28 Class I, Series A, Type 1, Varieties a through y Seed Beads\* Description and Metrics

Taxonomic Designation	Frequency	Color		Range		Figure 35	Comments
		Visual	Munsell	Length	Width		
CI, SA, T1, Va	252	Black	Green-Yellow, 5.0 GY, 4/6	1.2-3.9	2.5-3.9	A	Glossy surface, opaque.
Vb	1	Olive green	Green-Yellow, 5.0 GY, 4/6	1.9	3.6	B	Dull, eroded surface, opaque
Vc	7	Blue	Purple-Blue, 5.0 PB, 3/8	1.0-2.5	2.0-2.5	C	Semi-glossy surface, translucent.
Vd	122	Purple	Purple-Blue, 5.0 PB, 3/6	2.0-3.9	2.0-4.2	D	Semi-glossy surface, translucent.
Ve	29	Blue	Blue Purple-Blue, 10.0 B, 3/4	1.3-1.9	2.2-3.0	E	Semi-glossy surface, translucent.
Vf	1	Light blue	Blue, 5.0 B, 6/6	2.7	2.9	F	Glossy surface, translucent.
Vg	1	Clear		2.3	3.1	G	Glossy surface, translucent.
Vh	1	Red	purplish Red, 2.5 R, 5/10	1.2	2.1	H	Glossy surface, translucent.
Vi	20	Light green	yellowish Green, 2.5 G, 6/6	1.5-3.2	2.8-3.6	I	Dull surface, translucent.
Vj	4	Green	yellowish Green, 2.5 G, 4/6	2.3,-	2.7,-	J	Dull surface, translucent.
Vk	1	Clear-cloudy		2.2	2.7	K	Dull surface, translucent.
Vl	6	Blue	purplish Purple-Blue, 7/5 PB, 4/6	2.5-2.9	2.1-3.0	L	Glossy surface, translucent.
Vm	1	Purple-blue	Purple-Blue, 5.0 PB, 6/8	2.7	3.7	M	Dull surface, opaque.
Vn	53	Light blue	Purple-Blue, 5.0 PB, 6/4	1.6-3.0	2.4-3.3	N	Semi-glossy surface, opaque.
Vo	274	Lt. blue green	greenish Blue, 2.5 B, 5/6	1.9-3.4	2.3-4.5	O	Dull surface, translucent.
Vp	191	Light blue	Blue-Green Blue, 10.0 BG, 6/6	2.2-2.9	3.0-3.2	P	Dull surface, translucent.
Vq	62	Light green	bluish Blue-Green, 7.5 BG, 6/4	1.0-3.2	2.3-4.7	Q	Dull surface, translucent.
Vr	2	Lt. blue green	greenish Blue, 2.5 B, 6/6	1.9-2.9	2.5-4.0	R	Dull surface, translucent.
Vs	2	Mustard yellow	Yellow Green-Yellow, 10.0 Y, 6/4	2.7,-	4.0,-	S	Dull surface, semi-translucent.
Vt	1	Yellow	reddish Yellow, 2.5 Y, 7/6	2.3	5.8	T	Dull surface, translucent.
Vu	2	Red	Yellowish Red, 7.5 R, 5/12	2.0,-	2.6,-	U	Glossy surface, opaque.
Vv	1	Yellow	greenish Yellow, 7.5 Y, 8/6	1.1	1.9	V	Glossy surface, opaque.
Vw	1	Light blue	greenish Blue, 2/5 B, 7/6	1.6	2.1	W	Glossy surface, opaque.
Vx	1	Purple	Purple-Blue, 5.0 PB, 5/8	1.0	2.2	X	Glossy surface, opaque.
Vy	19	White		1.0-2.4	2.1-3.8	Y	Glossy surface, opaque.

\*All measurements in millimeters.

Length and width measurements refer to largest and smallest specimens of each variety.

Bore diameters were not systematically measured. Bore diameters average ca. 1.0 mm and vary from .5 to 1.3 mm.

TABLE 29 Class I, Series A, Type 2, Varieties a through c  
Seed Beads\* Description and Metrics

Taxonomic Designation	Frequency	Color		Length Range	Width Range	Figure 35	Comments
		Visual	Munsell				
CI, SA, T2, Va	25	Blue	Purple-Blue, 5.0 PB, 4/4	2.7-5.0	1.4-3.3	Z	Glossy surface, translucent; sub-surface striations; tumbled.
Vb	61	Black		2.3-7.0	2.3-4.0	AA	Glossy surface, opaque; untumbled.
Vc	10	Light blue	bluish Purple-Blue, 2.5 PB, 7/4	2.5-4.0	2.8-3.3	BB	Glossy surface, opaque; untumbled.

\*All measurements are in millimeters.

Bore diameters were not systematically measured. Bore diameters average ca. 1.0 mm and vary from .7 mm to 1.5 mm.

Length and width measurements refer to largest and smallest specimens of each variety.

See Table for comparative evidence.

Type 3 Tubular, fibrous surface

Variety a Olive green (Munsell: Green-Yellow Green, 10.0 GY, 5/8), opaque.

Figure 35 CC

2 specimens

Dimensions (1 specimen): length, 3.3; width, 2.2.

Surface: dull, eroded; numerous deep longitudinal striations; ends smooth and appear to have been tumbled.

Variety b Straw color (similar to Munsell: Yellow, 5.0 Y, 8/4), opaque.

Figure 35 DD

5 specimens

Dimensions (5 specimens): length, 2.0-2.3; width, 1.3-1.8.

Discussion: similar to CI, SA, T3, Va beads but differ in color.

Type 4 Tubular, shell: "wampum"

Variety a Purple (Munsell: bluish Purple, 2.5 P, 6/2), opaque.

Figure 35 EE

77 specimens

Dimensions (2 specimens--largest and smallest): length, 3.2-8.0; width, 2.4-4.1.

Surface: semi-glossy.

Discussion: all specimens made from shell; commonly known as "wampum."

Variety b White, opaque.

Figure 35 FF

10 specimens

Dimensions (2 specimens--largest and smallest): length, 4.6-5.4; width, 3.0-3.5.

Discussion: differs from CI, SA, T4, Va specimens only in color.

Series B Compound StructureType 1 Doughnut shape, two layers of glass

Variety a White, opaque.

## Figure 35 GG

3365 specimens

Dimensions (2 specimens--largest and smallest): length, .8-3.6; width, 1.4-3.6; bore, .5-1.3.

Structure: inner layer of white, opaque glass; outer layer of clear glass veneer.

Shape: varies from doughnut to semi-barrel.

Surface: dull to glossy.

Discussion: color varies from dull, or off-white, to white.

Type 2 Doughnut shape, three layers of glass

Variety a Red (Munsell: Red, 5.0 R, 5/6), opaque.

## Figure 35 HH

24 specimens

Dimensions (2 specimens--largest and smallest): length, 1.0-3.5; width, 2.0-3.9; bore, .6-1.1.

Structure: inner layer of light green translucent glass; center layer of red opaque glass; outer layer of clear glass veneer.

Surface: semi-glossy.

Discussion: referred to in literature as "Cornaline d'Aleppo" style.

Type 3 Tubular, two layers

Variety a White, opaque.

## Figure 35 II

142 specimens

Dimensions (2 specimens--largest and smallest): length, 1.8-7.2; width, 1.7-4.0; bore, .6-1.2.

Structure: inner layer of opaque white glass; outer layer of clear glass veneer.

Surface: very glossy; ends rounded and appear to have been tumbled.

Series C Complex structureType 1 Doughnut shape, striped glass insets

Variety a Black, opaque; four white glass stripe insets.

## Figure 35 JJ

1 specimen

Dimensions (1 specimen): length, 2.2; width, 3.0.

Surface: glossy.

Decoration: 4 equally-spaced, longitudinal, white glass insets.

Variety b White, opaque; two green and two red longitudinal glass insets.

Figure 35 KK

1 specimen

Dimensions (1 specimen): length, 1.8; width, 2.1.

Surface: dull.

Decoration: 2 red and 2 green, equally-spaced, alternating longitudinal glass insets.

## Class II Mandrel-Wound Method

### Series A Simple Construction

#### Type 1 Convex shape

All Type 1 beads exhibit circumferential surface striations. All specimens exhibit sharp, jagged ends. The identification of this bead class as a "seed bead" is problematical, since, on the basis of size, it could be termed either a necklace or seed bead. Nine varieties of Type 1 beads are present, and are primarily distinguished on the basis of color. See Table 30 for descriptions and metrics.

TABLE 30 Class II, Series A, Type 1, Varieties a through i,  
Seed Beads\* Description and Metrics

Classification	Frequency	Color		Length Range	Width Range	Figure 35	Comments
		Visual	Munsell				
CII, SA, Tl, Va	5	Red	purplish Red, 2.5 R, 5/10	4.2-6.8	2.7-3.2	LL	Glossy, patinated sur- face, translucent.
Vb	2	Blue	bluish Purple- Blue, 2.5 PB, 3/8	8.2-9.0	4.1-4.3	MM	Glossy surface, translucent.
Vc	3	White		4.8-9.0	4.5-7.4	NN	Dull, white surface, opaque.
Vd	5	Dark brown		6.0-8.7	3.5-5.2	00	Semi-Glossy, patinated surface, translucent.
Ve	1	Turquoise	bluish Blue- Green, 7.5 BG, 5/4	7.1	3.3	PP	Dull surface, opaque.
Vf	1	Yellow	reddish Yellow, 2.5 Y, 7/6	8.8	4.3	QQ	Dull surface, opaque.
Vg	1	Mustard Yellow	Yellow-Red Yellow, 10.0 YR, 7/8	6.2	3.2	RR	Dull surface, opaque.
Vh	1	Blue	bluish Purple- Blue, 2.5 PB, 5/4	4.2	2.6	SS	Dull surface, translucent.
Vi	1	Mulberry		6.2	3.2	TT	Dull surface, semi-translucent.

\*All measurements are in millimeters.

Length and width measurements refer to largest and smallest specimens of each variety.

Discussion: Seed Beads

The limited area in which seed beads have been systematically recovered at the site is characterized by both French and British associations. Specific areal clusters are, however, misleading since they reflect the presence of archaeological features in which an attempt was made to collect seed beads. The interpretation of seed bead types in terms of period or nationality of use is not possible on the basis of this limited evidence.



Figure 35 Seed Beads

Figure Designation	Taxonomic Designation	Catalogue Number MS <sup>2</sup>	Figure Designation	Taxonomic Designation	Catalogue Number MS <sup>2</sup>
A	CI, SA, T1, Va	1	AA	Vb	1
B	Vb	1	BB	Vc	1
C	Vc	1	CC	CI, SA, T3, Va	1
D	Vd	1	DD	Vb	1
E	Ve	1	EE	CI, SA, T4, Va	1
F	Vf	1	FF	Vb	1
G	Vg	1	GG	CI, SB, T1, Va	1
H	Vh	1	HH	T2, Va	1
I	Vi	1	II	T3, Va	1
J	Vj	1	JJ	CI, SC, T1, Va	1
K	Vk	1	KK	Vb	1
L	Vl	1	LL	CII, SA, T1, Va	2911
M	Vm	1	MM	Vb	1
N	Vn	1	NN	Vc	3146
O	Vo	1	OO	Vd	1
P	Vp	1	PP	Ve	1
Q	Vq	1	QQ	Vf	1
R	Vr	1	RR	Vg	1
S	Vs	1	SS	Vh	1
T	Vt	1	TT	Vi	1
U	Vu	1			
V	Vv	1			
W	Vw	1			
X	Vx	1			
Y	Vy	1			
Z	CI, SA, T2, Va	1			

A ●

B ●

C ●

D ●

E ●

F ●

G ●

H ●

I ●

J ●

K ●

L ●

M ●

N ●

O ●

P ●

Q ●

R ●

S ●

T ●

U ●

V ●

W ●

X ●

Y ●

Z ●

A A ●

B B ●

C C ●

D D ●

E E ●

F F ●

G G ●

H H ●

I I

J J ●

K K ●

L L ●

M M ●

N N ●

O O ●

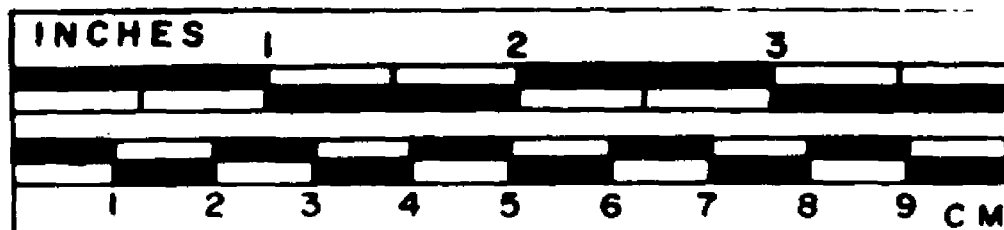
P P ●

Q Q ●

R R ●

S S ●

T T ●



### Classification and Description: Rosary Beads

The rosary is a series of beads strung as a necklace and used for counting prayers (see Casanowicz 1909; Thurston 1902; and William 1953, for discussion of the history and use of rosaries).

All rosary beads recovered from Fort Michilimackinac are made of ivory, although other materials such as bone, glass, stone, and metal were commonly made into rosaries. The two most common types of Catholic rosaries are: the "full" rosary, consisting of 153 small beads, 15 large beads, a linking element, and a suspended pendant; and the "lesser" rosary, consisting of 53 small beads, 5 large beads, a linking element, and a suspended pendant. In both types, groups of 10 small beads (decades), separated by large beads, for the necklace proper (or chaplet). An additional large bead, three small beads, and a pendant are suspended from the chaplet; the suspended element is attached by a link, which is often an additional bead or pendant.

Three attributes have been recognized in the classification of rosary beads; (1) form or bead structure, (2) shape, and (3) decoration which refers to the modification of a bead surface by differential incising. Three levels of taxonomic distinction are based on these criteria; (1) the series which is distinguished by differences in form; (2) the type which is distinguished by shape differences as well as the presence or absence of decoration; and (3) the variety which is distinguished by different patterns of decoration.

The interpretation of rosary beads is presented after the following type descriptions.

### Series A Single Hole Structure

Beads within this series are characterized by a single, longitudinal, drilled hole.

**Type 1    Convex shape, decorated**

Variety a Two circumferential grooves at apex.

**Figure 36 A**

8 specimens

Dimensions (8 specimens): length, 8.8-9.8, average, 9.4; width, 7.2-9.5, average, 8.2; bore, 2.0-2.6.

**Surface:** ends flat.

Decoration: 2 circumferential grooves around apex.

Discussion: Type 1 varieties may represent large rosary beads which divide necklace into decades.

**Variety b**    **Single circumferential groove at apex.**

**Figure 36 B**

5 specimens

Dimensions (5 specimens): length, 6.1-9.0, average, 8.3;  
width, 6.0-8.6, average, 7.7; bore, 2.0-2.1.

**Surface:** ends flattened.

Decoration: 1 circumferential groove around apex.

Variety c    Circumferential ridge at apex.

**Figure 36 C**

5 specimens

Dimensions (5 specimens): length, 5.9-7.8; width, 6.2-9.0; bore, 2.0-2.2.

Decoration: raised circumferential ridge at apex which is bordered by 2 smaller ridges.

**Discussion:** 3 specimens attached by brass links to 4, Series A, Type 2 rosary beads and 1 Series A, Type 1, Variety d rosary bead.

Variety d      Circumferential ridge and groove.

**Figure 36 D**

3 specimens

Dimensions (3 specimens): length, 9.7, 5.3, 9.6; width, 9.6, 6.6, 11.2; bore, 2.3, 2.1 E, 2.4.

Surface: flattened ends.

Decoration: circumferential apex groove bordered by ridges which taper sharply to the bead ends; ends have additional circumferential ridge.

Discussion: small specimen is attached by brass links to a small Series A, Type 2 rosary bead.

Type 2 Round, undecorated

Figure 36 E,F,G

96 specimens

Measurement of 47 specimens indicates the presence of three distinct size categories:

- |     |                                |              |
|-----|--------------------------------|--------------|
| (1) | Length, 8.8-10.7, average, 9.4 | 7 specimens  |
|     | Width, 9.3-11.5, average 11.6  |              |
|     | Bore, 1.8-2.5                  |              |
| (2) | Length, 5.4-8.4, average, 7.1  | 35 specimens |
|     | Width, 7.2-10.0, average, 8.6  |              |
|     | Bore, 1.9-2.6                  |              |
| (3) | Length, 4.6-6.4, average, 5.4  | 54 specimens |
|     | Width, 4.6-7.8, average, 6.9   |              |
|     | Bore, 1.7-3.1                  |              |

Type 2 (and Type 3) rosary beads are the beads which form individual units of a decade. Bead ends are flattened in most cases. Bead color varies greatly from very dark brown to light tan. Seven small Type 1 specimens are joined by iron wire links; five small specimens are joined by brass links.

Type 3 Convex, undecorated

Figure 36 H, I, J

Measurement of 44 specimens indicates the presence of three distinct size categories:

- |     |                                  |              |
|-----|----------------------------------|--------------|
| (1) | Length, 10.3-11.3, average, 10.7 | 10 specimens |
|     | Width, 9.3-10.9, average, 9.9    |              |
|     | Bore, 2.3-2.4                    |              |
| (2) | Length, 7.0-9.5, average, 7.8    | 11 specimens |
|     | Width, 7.5-8.5, average, 7.8     |              |
|     | Bore, 2.0-2.6                    |              |
| (3) | Length, 5.0-7.7, average, 6.9    | 23 specimens |
|     | Width, 5.0-7.1, average, 6.4     |              |
|     | Bore, 1.9-2.7                    |              |

The majority of Type 3 specimens have flattened ends. Bead color varies from dark brown to light tan.

Type 4 Tubular, decorated

Type 4 rosary beads may be spacing beads as are Type 1 beads.

Variety a Two circumferential grooves.

Figure 36 K

1 specimen

Dimension (1 specimen): length, 6.7; width, 5.7; bore, 1.9.

Surface: ends flattened.

Decoration: 2 circumferential grooves which are equally-spaced between ends.

Variety b One circumferential apex groove.

Figure 36 L

2 specimens

Dimensions (2 specimens): length, 5.3, 8.2; width, 5.5, 6.6; bore, 2.0, 2.5.

Surface, ends flattened.

Decoration: very wide and deep circumferential groove at apex.

Discussion: have the appearance of a tubular bead with round knobs on each end.

Variety c Central, circumferential concavity.

Figure 36 M

3 specimens

Dimensions (3 specimens): length, 5.3, 5.8, 7.7; width, 4.8, 4.9, 5.6; bore, 1.9, 1.6, -, -.

Decoration: wide, circumferential concavity.

Series B Double Hole Structure

Series B rosary beads are thought to be a linking element between the necklace proper (chaplet) and the suspended beads and pendant.

Type 1 Tubular, decorated

All Type 1 varieties have a longitudinal hole between ends and a second, perpendicular hole through the bead center.

Variety a Center ridge bordered by concavities.

Figure 36 N

4 specimens

Dimensions (4 specimens): length, 10.9, 13.6, average, 12.5; width, 5.0-6.0, average, 5.5; bore, 1.9-2.1.

Surface: ends flat.

Decoration: wide, central, flat ridge bordered by a concavity which extends to a narrow ridge (flat or rounded) at each bead end.

Variety b Center groove bordered by concavities.

Figure 36 O

2 specimens

Dimensions (2 specimens): length, 13.2, 14.5; width, 5.9, 5.0; bore, 2.0, 1.8.

Surface: ends flat.

Decoration: center circumferential groove bordered by a concavity which extends to a narrow ridge at each bead end.

Variety c Two center grooves bordered by concavities.

Figure 36 P

2 specimens

Dimensions (2 specimens): length, 14.3, 14.0; width, 6.0, 6.0; bore, 2.1, 2.1.

Discussion: differ from SB, T1, Vb specimens only in the presence of two center grooves.

Variety d One center ridge.

Figure 36 Q

2 specimens

Dimensions (2 specimens): length, 10.0, 10.0; width, 6.6, 6.6; bore, 2.3, --.

Decoration: wide, flat, center ridge; bead tapers slightly toward the ends from each side at the ridge.

Discussion: 1 specimen is attached by brass links to 4, SA, T2 (small) and 3, SA, T1, Vc rosary beads.

Type 2 Convex, decorated

Variety a Center and end grooves.

Figure 36 R

2 specimens

Dimensions (2 specimens): length, 8.6, 8.4; width, 7.4, 9.0; bore, 2.0, 2.0.

Surface: ends flat.

Decoration: center, circumferential groove which is bordered by convex sides which taper toward the bead ends; secondary grooves encircle each bead end.

### Discussion: Rosary Beads

Two major categories of rosary beads have been distinguished: those which represent linking elements between the necklace proper and the suspended pendant and those which comprise the necklace proper. The latter have been interpreted on the basis of size as either spacers (Series A, Type 1, Series A, Type 2 (large) and possibly Series A, Type 4) or beads which are joined to form decades. A great deal of consistency, both in size and physical appearance, has been noted for each individual rosary bead type.

A comparison of individual bead type distributions indicates that there are no significant distributional differences between rosary bead types. Therefore, all rosary beads were combined on one distribution map for the purpose of determining structural associations. Two major rosary bead clusters were noted in the southern half of the site: one within the central section of the SSW rowhouse unit, and a second within the central area of the SW rowhouse unit. An additional large, but dispersed, concentration of rosary beads extended throughout the area of the church and priests' house to within the west stockade of Feature 5, the earliest French stockade. Rosary beads were infrequent in the remaining areas of the site. Rosary beads were also found in the following feature contexts: Feature 267 (3)--basement in the center section of the SSW rowhouse unit; Feature 88 (3)--French well located at the northwest corner of Feature 5; Feature 209 (14)--basement in the center section of the SW rowhouse unit; Feature 249 (2)--basement of unknown association; Feature 252 (2)--fireplace associated with the center



section of the SSW rowhouse unit. One rosary bead was recovered from each of the following features: Features 83, 306, 318, 236, 118, 70, and 215. This evidence indicates that rosary beads were deposited primarily in French contexts.

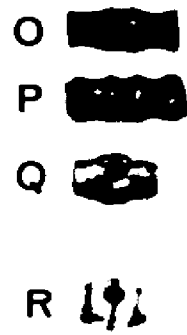
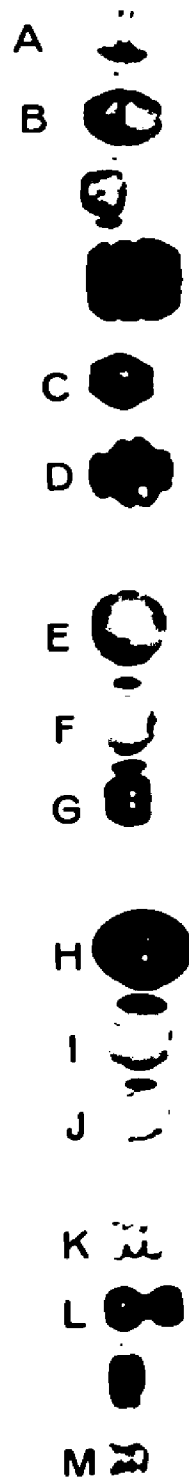
There is little comparative evidence for rosary beads. The Lasanen Site (Stone n.d.) yielded 158 specimens. The following Fort Michilimackinac rosary bead types were duplicated at the Lasanen Site: Series A, Type 2, Type 3, and Type 4, Variety c; and Series B, Type 1, Variety a.

In addition to the ivory rosary beads, one necklace bead type (Class I, Series A, Type 3, Variety d) may have been used in rosaries. It has already been noted that several specimens of this necklace bead type were found joined by brass links. This necklace bead type has been attributed to a French usage and dated between 1710 and 1750.

The presence and location of rosary beads at the site seems to indicate that they were used both as items of religious apparel and by traders as trade goods. Judging from comparative evidence, rosary beads were common in the Mackinac Straits area as early as 1680. Their use at Fort Michilimackinac appears to have been throughout the French period of control (1715 through 1761) and possibly later.

Figure 36 Rosary Beads

Figure Designation	Taxonomic Designation	Catalogue Number MS <sup>2</sup>
A	SA, T1, Va	1945
B	Vb	899
C	Vc	3659
D	Vd	879
E	T2, Lg.	1
F	T2, Md.	3080
G	T2, Sm.	2386
H	T3, Lg.	1257
I	T3, Md.	2349
J	T3, Sm.	2519
K	T4, Va	3640
L	Vb	3146
M	Vc	1
N	SB, T1, Va	657
O	Vb	546
P	Vc	2310
Q	Vd	518
R	T2, Va	1051



ARCHAEOLOGICAL RESEARCH AT FORT MICHILIMACKINAC, AN  
EIGHTEENTH CENTURY HISTORIC SITE IN EMMET COUNTY,  
MICHIGAN: 1959-1966 EXCAVATIONS  
Volume II

By

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A THESIS

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## TINKLING CONES

Tinkling cones are brass, cone-shaped objects of personal adornment which are attached to different parts of clothing. Tinkling cones appear to have been a common artifact among many North American Indian groups and are found on numerous historic sites, both Indian and European; however, few specimens have been described.

### Classification and Description:

Tinkling cones are manufactured from trapezoidal-shaped sheet-brass blanks which look like elongated triangles truncated on the narrow end. The desired blank shape was marked by a shallow incision on the brass sheet prior to cutting. The longitudinal edges of the blank were then bent together to form a truncated cone. The desired shape appears to have been a perfect cone with no overlap either on the ends or longitudinal edges; however, this ideal was only approximated in the majority of cases.

Tinkling cones were attached to clothing in several ways:

1. A thin strip of leather attached to the clothing was tied with an overhand knot to a length of folded (end-for-end) animal hair. The cone was then slipped down over the retaining knot with the mass of hair protruding through the large end of the cone. Benndorf and Speyer (1968) give an illustration of this process.
2. A thin strip of leather was passed through the cone and secured by an overhand knot pulled tightly into the small end of the cone.

3. A thin strip of leather was compressed and passed through the cone. The leather inside the cone retained its original width and secured the cone.

Three variables have been used to classify tinkling cones:

(1) length, (2) sheet brass thickness, and (3) presence or absence of leather attachment. A total of 1125 tinkling cones have been recovered at Fort Michilimackinac. Of these, 168 specimens retained fragments of the leather attachment; approximately 100 specimens retained fragments of animal hair within the cone.

A total of 318 specimens were measured. An average length was computed from a sample of 146 specimens, the mean length is 25.53 mm, and the standard deviation is 5.28 mm. The length range for this sample is between 11.6 mm to 42.8 mm, with a total range of 31.2 mm. The standard deviation and range indicate that there is considerable variation in the length of these tinkling cones. An attempt to identify the presence of size categories based on length was made by plotting the frequency of specimens in .10 mm increments. Two size categories of tinkling cones are indicated: (1) between 17.5 mm and 21.5 mm, and (2) between 22.5 mm and 25.0 mm. The length of specimens within these two categories represent the most common sizes of tinkling cones at the site; in terms of the variations noted above, these standards of length were not closely maintained. The range of sheet-brass thickness was between .40 mm and .90 mm.

### Associational Evidence:

The distribution of all tinkling cones recovered from the site is significant in terms of structural associations. The first impression gained from the distribution map is that a greater number of specimens occur south of the 220 grid line than north. A number of other major artifact categories exhibit the same distribution pattern which is partially indicative of the higher levels of artifact deposition within the southern portion of the site. Tinkling cones are found in the refuse deposits and basement fill of each of the four identified rowhouse units. Each of the following basement features contained five or more specimens: F. 209 (58), F. 85 (10), F. 267 (32), and F. 118 (5). The major types of artifact associations within these basements (hawk bells, knives, straight pins, ceramics, kaolin pipes, buttons, and beads) suggest an inventory which would have been common items in civilian households or, possibly, in a trade good distribution area. Two of these basements (F. 209 and F. 267) are parts of rowhouses believed to have been occupied by civilian merchants during the mid-1760's. Tinkling cones are also associated with stockade trenches, F. 81 (8) and F. 82 (5), and British zone refuse fill, F. 296 (9). In addition, tinkling cones occur in nearly every excavation unit at the site; this suggests a random distribution, although conditioned by greater frequencies within units in the southern portion of the site. There is no significant difference between the distribution of tinkling cones which retain fragments of the leather attachment and those which did not. Tinkling cones are found in minimal quantities in areas of known military occupation (that is, F. 3,

British barracks, and F. 31, F. 32, and F. 11, Commanding officer's house). In addition, a low number of tinkling cones were found in the area of the church. An area between the two southern rowhouse units shows the greatest non-feature concentration of tinkling cones. This area includes a street (Rue Du Diable) which is adjacent to the SSW unit as well as a row of garden plots attached to the rear of this unit.

#### Comparative Evidence:

Tinkling cones have been documented from a number of sites; although adequate comparative information is available from only several of these. The following sites are indicative of the area and time range suggested for the use of tinkling cones: (1) the Bell Site, Wisconsin (Wittry 1963: 19); (2) the Gilbert Site, Texas (Jelks 1967: 92); and (3) Fort Renville, Minnesota (Nystuen and Lindeman 1969: 25). Table 31 lists the frequency and metrics of specimens recovered from these three sites and Fort Michilimackinac. It is significant to note that tinkling cones have not been recovered from the Site of Fortress of Louisbourg, Nova Scotia (John Dunton, 1968).



TABLE 31 Tinkling Cones at Four Historic Sites

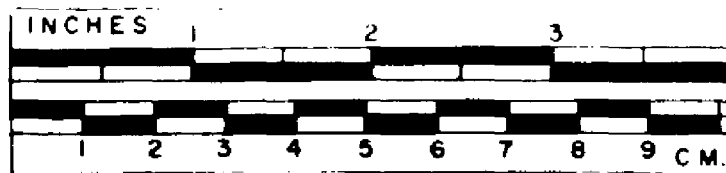
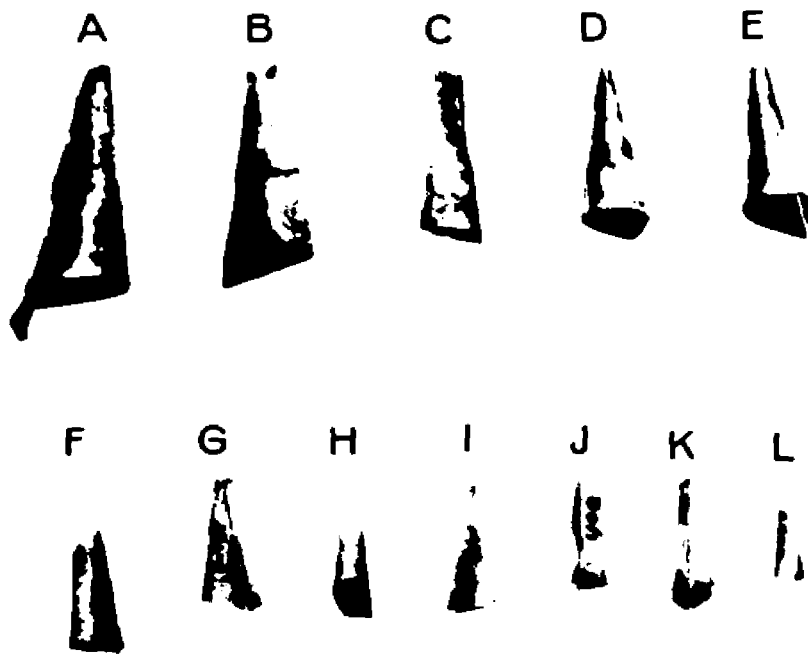
Site	Approximate Site Dates	Frequency	Length Average	Length Range	Comments
Bell	1680-1730	43	20.0-30.0		
Fort Michilimackinac	1715-1781	1125	25.53	11.6-42.8	Average based on sample of 146
Gilbert	1750-1775	46	20-40	16.0-66.0	12 blanks recovered; Indian manufacture
Renville	1826-1846	13		23.0-42.0	

### Interpretations:

The preceding evidence indicates that tinkling cones were manufactured by the occupants of a region which frequented the site of recovery, whether European or Indian. Tinkling cones were apparently worn as clothing ornaments by both Europeans (civilians) and Indians; this is definitely the case at Fort Michilimackinac where the large quantity found could not be attributed entirely to the small Indian population living within the stockade. Moreover, the distribution of specimens at the site suggests that they were worn by inhabitants, since they do not occur in specific clusters which might be identified as areas of production or distribution. Tinkling cones at the site are thought to have been worn by both French and British inhabitants throughout the period of occupation. Metric comparisons between specimens from Fort Michilimackinac and other sites indicate that a standard size range was common for tinkling cones regardless of differences in time or place of manufacture. Although tinkling cones are not thought to be primary trade goods, they were probably manufactured at Indian sites from the scrap remains of brass and copper trade goods, such as kettles. The absence of tinkling cones at the Fortress of Louisbourg may indicate differences between the social and economic composition of the populations at the two sites.

**Figure 37      Tinkling Cones**

<b>Figure Designation</b>	<b>Catalog Number, MS<sup>2</sup></b>
<b>A</b>	<b>1795</b>
<b>B</b>	<b>2289</b>
<b>C</b>	<b>2153</b>
<b>D</b>	<b>1805</b>
<b>E</b>	<b>1868</b>
<b>F</b>	<b>1</b>
<b>G</b>	<b>1347</b>
<b>H</b>	<b>1452</b>
<b>I</b>	<b>1</b>
<b>J</b>	<b>408</b>
<b>K</b>	<b>3362</b>
<b>L</b>	<b>3403</b>



## RINGS

A total of 121 rings and ring fragments were recovered at Fort Michilimackinac during the 1959 through 1966 excavations. Of this total, 72 were "Jesuit Rings," 31 had glass sets, and 18 were of the band or wedding ring style.

Rings are formally classified into class, series, type, and variety categories. Classes are distinguished by differences in form (defined by the presence or absence of glass sets); series are distinguished by the form and combination of ring elements (ring elements are the band, face, and set); types are distinguished by ring shape, and/or the number and location of sets; varieties are distinguished by differences in set cut and color and/or differences in design on the ring face.

The following ring descriptions are presented according to this classification. Comparative and distributional evidence is presented in the ring discussion following the descriptions. Feature information is summarized in Table 35 . Information on ring measurements is presented in the descriptive text. Ring measurements consist of inside band diameter which is given in standard units of ring measurement.

### Class I Rings With Glass Sets

#### Series A Ring Band and Face Cast As One Unit; Glass Sets Added

All SA rings are brass.

Type 1 One large, central glass set on ring face; three small glass sets on band on each side of central set

Variety a Multifaceted, light blue center set; purple-blue band sets.

Figure 38 A; Figure 39 A

1 specimen

Dimensions (1 specimen): size, 5-1/8.

Variety b Multifaceted, light green center set; purple-blue band sets.

Not illustrated

2 specimens

Dimensions (2 specimens): size, 7-1/2, 8-3/8.

Variety c Multifaceted, blue center set; purple-blue band sets.

Not illustrated

2 specimens

Dimensions (2 specimens): size, 5-5/8, 8-3/8.

Variety d Multifaceted, clear center set; purple-blue band sets.

Figure 38 B

2 specimens

Dimensions (2 specimens): size 8, 5-1/2.

The illustrated specimen has a molded rather than a cut glass center set.

#### Type 1, Category 1

This category consists of 2, CI, SA, T1 bands without sets.

Type 2 One large center glass set on ring face; two small, glass sets on band on each side of center set

Variety a Molded, clear glass center set; purple-blue band sets.

Figure 38 C; Figure 39 B

1 specimen

Dimensions (1 specimen): 3-1/2.

Type 3 One large, center glass set on ring face; one small glass set on band on each side of center set

Variety a Multifaceted, light green center set; purple-blue band sets.

Figure 38 D; Figure 39 C

3 specimens

Dimensions (1 specimen): size, 1-1/4.

Variety b Multifaceted, clear glass center set; purple-blue band sets.

Figure 38 E

2 specimens

### Type 3, Category 1

This category consists of 2, CI, SA, T3 bands without sets.

Type 4 One, large, center glass set on ring face; two small glass sets on the band on raised mounts

Variety a Clear sets.

Figure 38 F; Figure 39 D

1 specimen

Dimensions (1 specimen): size, 5-1/4.

Type 5 Single, large, round center face set

Variety a Clear glass set; set has flat surface with beveled edges.

Figure 38 G

1 specimen

Variety b Multifaceted, clear center set.

Figure 39 E

1 specimen

Variety c Multifaceted, light pink center set.

Figure 38 H

1 specimen

Variety d Molded, clear glass center set.

Figure 38 I

1 specimen

Variety e Black, center set; white bust in cameo relief.

Figure 38 J; Figure 39 G  
1 specimen

Type 5, Category 1

This category consists of 5, CI, SA, T5 frames without sets.

Series B Ring Band and Face (or Set Mount) Separate and Brazed Together; Glass Set Added

The single CI, SB specimen is silver.

Type 1 One large center glass set

Variety a Multifaceted, clear glass set.

Figure 38 K; Figure 39 F  
1 specimen

Series C Face and Band of Wound Copper or Brass Wire, Produced Separately and Joined by Yarn or String

Type 1 Face of wound copper wire and four spaced, glass seed beads; band of wound wire

Variety a Four light green glass seed beads, spaced with wound copper wire.

Figure 38 L  
1 specimen  
Dimensions (1 specimen): size, 6.

Class II Rings Without Glass Sets

Series A Ring Band and Face Cast as One Unit; Engraved Face Design

All SA rings are brass and are referred to as Jesuit Rings.

Type 1 Octagonal-shaped face

All CII, SA, T1 ring varieties are described in a tabular format (Table 32 ) since they differ in face design only. All specimens have engraved or impressed face designs.



TABLE 32 Ring Descriptions: Class II, Series A, Type 1, Varieties a through t

Taxonomic Designation	Frequency	Number Measured	Size	Figure	Comments (Face Symbol or Mark)
CII, SA, Tl, Va	9	2	5-1/2, 6	38 M 39 H,I	N
Vb	1			38 J	Flower symbol at center
Vc	5	1	4-1/2	39 K,L	IB
Vd	1			39 M	2 hearts and 2 dots
Ve	3			39 N	2 hearts
Vf	1			39 O	PI
Vg	1			39 P	2 hearts with 2 crosses above
Vh	2	1	7-1/2	39 Q	IM
Vi	1			39 R	IF
Vj	1			40 A	1 heart with flower symbol above
Vk	1			40 B	LV
Vl	5	2	5-3/4, 8/14	40 C	IN
Vm	1			40 D	BI
Vn	1			40 E	1 heart and 3 dots
Vo	1	1	6-1/2	40 F	IB (?)
Vp	1	1	6-1/4	40 G	Cross hatch design
Vq	1			40 H	H
Vr	1			40 I	LR
Vs	1			40 J	FI
Vt	1			40 K	T

Type 1, Category 1

This category consists of 7, CII, SA, T1 rings which could not be assigned to specific varieties.

Type 2    Round face

All CII, SA, T2 ring varieties are described in a tabular format (Table 33 ) since they differ in face design only. All specimens have engraved or impressed face designs.

TABLE 33 Ring Descriptions: Class II, Series A, Type 2, Varieties a through o

Taxonomic Designation	Frequency	Number Measured	Size	Figure	Comments (Face Symbol or Mark)
CII, SA, T2, Va	1	1	6-1/4	40 L	Unknown symbol
Vb	1	1	6-1/4	38 N 40 M	Unknown symbol
Vc	1	1	8-3/4	40 N	Superimposed, transposed W's
Vd	1			40 O	Heart symbol
Ve	1	1	3-1/4	40 P	Unknown symbol
Vf	1			40 Q	XX
Vg	1	1	7-1/4	40 R	Priest with cross
Vh	1	1	6-3/4	40 S	IN
Vi	1	1	3-1/4	40 T	D (?)
Vj	1			40 U	DI
Vk	1			40 V	Heart symbol
Vl	1			41 A	Heart symbol with 3 arrows
Vm	1			41 B	FI
Vn	1			41 C	XX
Vo	1			41 D	Unknown symbol

Type 2, Category 1

This category consists of 1 CII, SA, T2 ring which could not be assigned to a specific variety.

Type 3 Heart-shaped face

All CII, SA, T3 varieties are described in a tabular format (Table 34 ) since they differ in face design only. All specimens have engraved or impressed face designs.

TABLE 34 Ring Descriptions: Class II, Series A, Type 3, Varieties a through n

Taxonomic Designation	Frequency	Number Measured	Size	Figure	Comments (Face Symbol or Mark)
CII, SA, T3, Va	1	1	5	38 O 41 E	Unknown symbol
Vb	1	1	5-1/2	41 F	Unknown symbol
Vc	1	1	6-1/4	41 G	FP
Vd	1			41 H	Unknown symbol
Ve	1	1	4-1/4E	41 I	H
Vf	1	1	3-1/2	41 J	Unknown symbol
Vg	2			41 K	Unknown symbol
Vh	1			41 L	N
Vi	2	1	5-7/8	41 M	V
Vj	1	1	6	41 N	Superimposed, transposed W's
Vk	1	1	6-7/8	41 O	X
Vl	1	1	5-1/4	41 P	H
Vm	1			41 Q	Unknown symbol
Vn	1			41 R	Superimposed, transposed W's

Series B    Ring Band and Face Cast as One Unit; Raised or Offset  
Face With Design

All CII, SB rings are brass and may possibly be termed Jesuit  
Rings.

Type 1    Rectangular, offset face

Variety a    Engraved lines on face.

Figure 41 S; Figure 38 P

2 specimens

Dimensions (2 specimens):    size, 4-1/2, 4-3/8.

Type 2    Elongate, offset face

Variety a    Engraved lines on face.

Figure 41 T

2 specimens

Series D    Band Ring, No Face

All CII, SD rings are brass, except CII, SD, T3 which is gold.

Type 1    Flat, inside band surface; convex, outside band sur-  
face

Variety a    Plain, no design.

Not illustrated

10 specimens

Dimensions (4 specimens):    size, 8-1/4, 4-3/4, 6-1/4, 3-1/4.

Variety b    Central ridge on band outside surface.

Not illustrated

1 specimen

Variety c    Cross hatch design on band outside surface.

Not illustrated

1 specimen

Variety d    Grooves on each edge of band outside surface.

Figure 38 Q

1 specimen

Type 2 Convex outside and inside band surfacesVariety a Plain.

Figure 38 R

4 specimens

Dimensions (3 specimens): size, 4-7/8, 6-3/4, 7-1/4.

Type 3 Flat outside and inside band surfacesVariety a Woven-line design on outside band surface.

Figure 38 S

1 specimen

Dimensions (1 specimen): size, 4-3/8.

## Distributional and Associational Evidence:

Class I and Class II rings were plotted on individual maps for interpretative purposes. The small sample of Class I rings (with glass sets) were associated most clearly with the SW rowhouse unit. Feature associations (Table 35 ) indicate that Class I rings were recovered primarily from late French and British period contexts. Class II rings are associated with the SW corner of the Commanding Officer's house and with the NW and SW rowhouse units. Class II specimens were present but less frequent in the central area of the early French stockade (F. 5). Feature associations (Table 35 ) indicate that Class II rings were recovered primarily from French period features and, secondarily, from British period features.

## Comparative Evidence:

Two Class I rings have been reported by Smith (1965: 67) from Santa Rosa, Pensacola, Florida (1722-1752). Class II rings (Jesuit Rings) have been reported by Wittry (1963: 18) from the Bell Site,

Wisconsin (1680-1730), and by Jelks (1967: 95-96) from the Gilbert Site, Texas (1750-1775).

#### Interpretations:

Class I rings (with glass sets) may be assigned a ca. 1750 to 1780 period of use at the site. Class II, Series A rings (Jesuit Rings) were used most frequently by the French between ca. 1720 and 1750, although several specimens were recovered from later British contexts. No temporal differences were noted between different types of Class II, Series A rings. This is expected since the different types of Jesuit rings often bear the same initials or symbols. Noel Hume's (1970: 266) suggestion that the initials on Jesuit rings represent the "customer's" initials is not supported by the present evidence. It is unlikely that 10 rings so marked would bear the same initials (that is, Class I, Series A, Type 1, Variety a). The final interpretation of these initials and symbols will be reached only through additional historical research. The absence of Jesuit rings in the Church and Priest's house area strongly suggests that this ring type was not distributed by the resident Jesuit Priest.



Figure 38      Rings

Figure Designation	Taxonomic Designation	Catalog <sup>2</sup> Number, MS
A	CI, SA, T1, Va	1117
B	Vd	1335
C	T2, Va	2035
D	T3, Va	2876
E	Vb	2349
F	T4, Va	1422
G	T5, Va	1573
H	Vc	2061
I	Vd	1296
J	Ve	1886
K	CI, SB, T1, Va	1256
L	SC, T1, Va	2211
M	CII, SA, T1, Va	790
N	T2, Vb	2608
O	T3, Vi	1574
P	SB, T1, Va	1266
Q	SC, T1, Vd	1
R	T2	2110
S	T3	2583

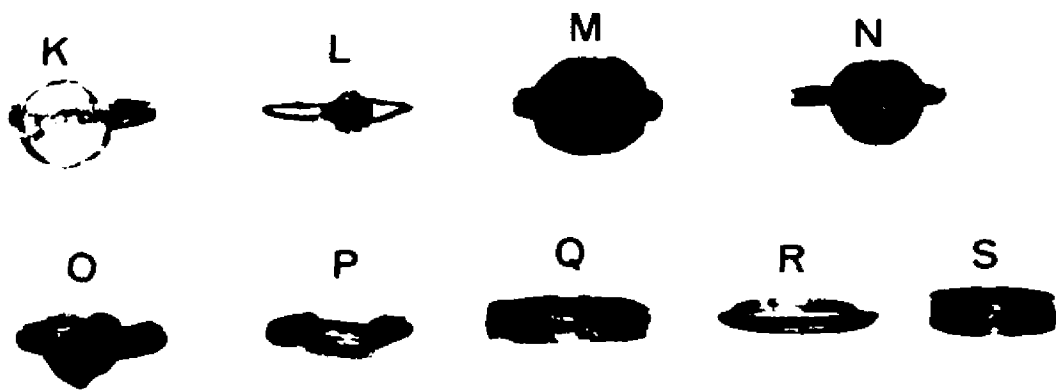
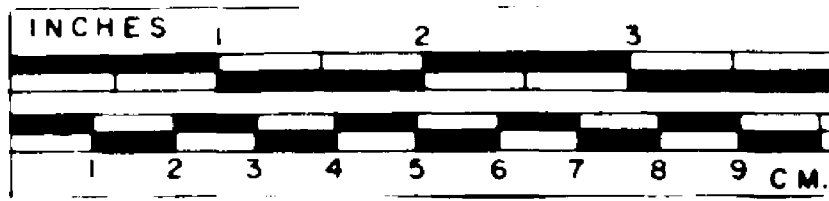
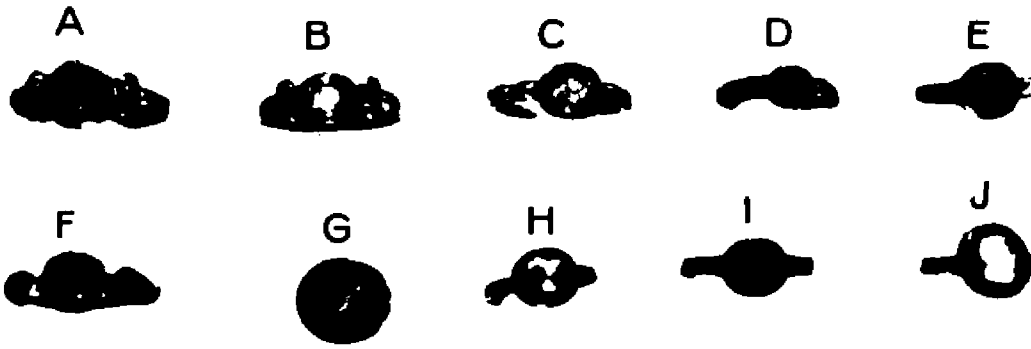


Figure 39 Rings (1:2)

Figure Designation	Taxonomic Designation	Catalog Number,
A	CI, SA, T1, Va	1117
B	T2, Va	2035
C	T3, Va	2876
D	T4, Va	1422
E	T5, Vb	1
F	SB, T1, Va	1256
G	SA, T5, Va	1886
H	CII, SA, T1, Va	790
I	Va	1154
J	Vb	1792
K	Vc	504
L	Vc	313
M	Vd	1881
N	Ve	746
O	Vf	1146
P	Vg	1187
Q	Vh	2088
R	Vi	284

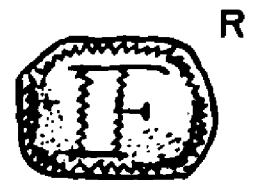
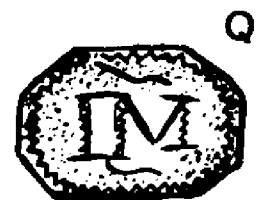
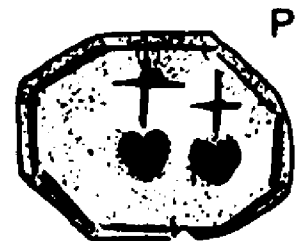
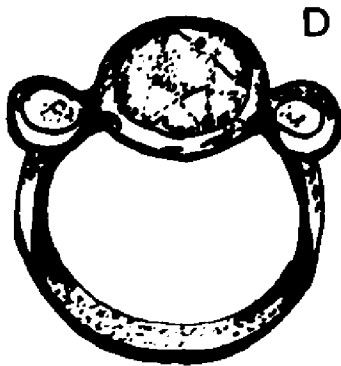
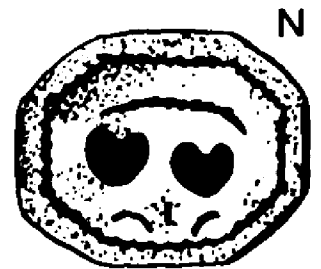
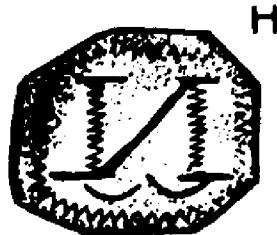
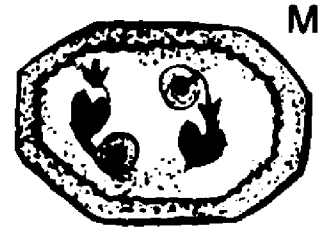
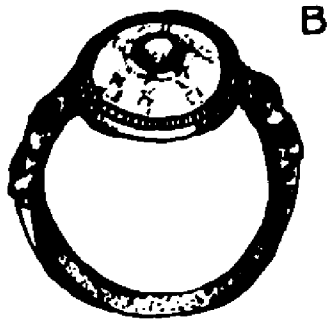
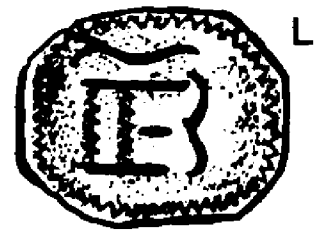
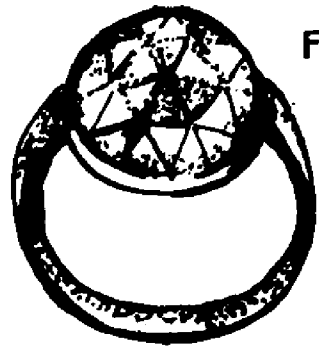
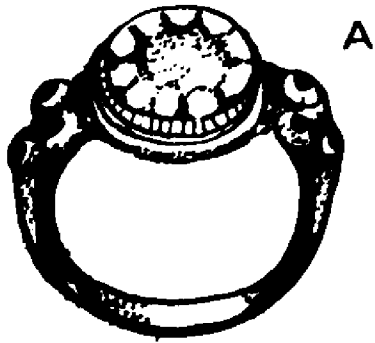


Figure 40      Rings (1:2)

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	CII, SA, T1, Vj	2743
B	Vk	1217
C	Vl	58
D	Vm	1145
E	Vn	718
F	Vo	1573
G	Vp	1198
H	Vq	1280
I	Vr	2276
J	Vs	290
K	Vt	423
L	T2, Va	1
M	Vb	2608
N	Vc	1350
O	Vd	608
P	Ve	1021
Q	Vf	752
R	Vg	2236
S	Vh	1622
T	Vi	2014
U	Vj	1458
V	Vk	284

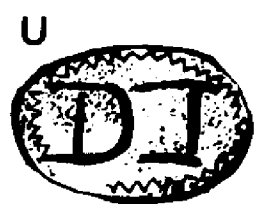
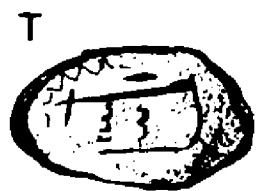
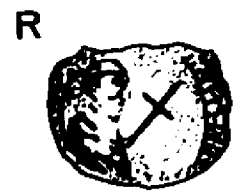
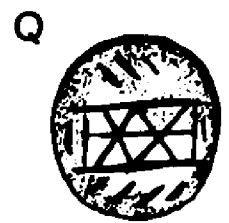
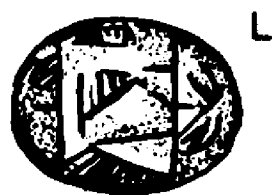
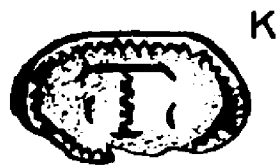
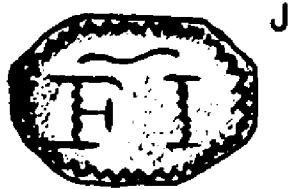
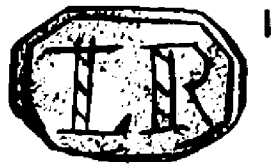
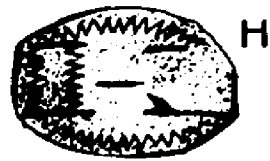
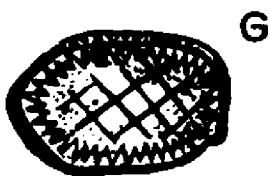
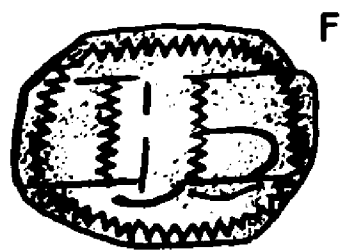
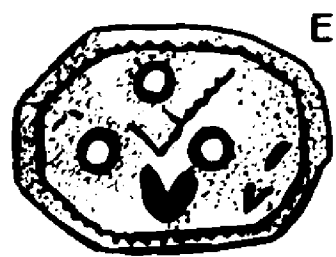
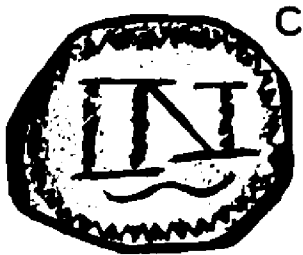
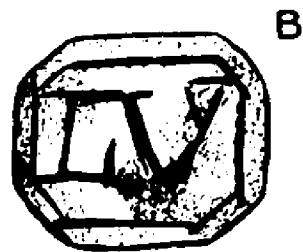
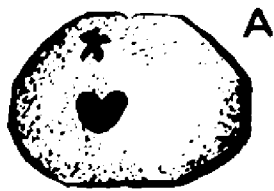
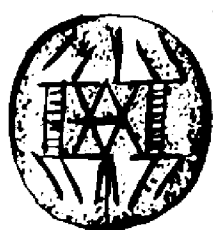


Figure 41      Rings (1:2)

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	CII, SA, T2, V1	58
B	Vm	97
C	Vn	1247
D	Vo	812
E	T3, Va	1220
F	Vb	2421
G	Vc	1
H	Vd	1
I	Ve	1463
J	Vf	2390
K	Vg	694
L	Vh	2737
M	Vi	1574
N	Vj	1207
O	Vk	2445
P	Vl	1
Q	Vm	205
R	Vn	1655
S	T1, Va	1266
T	T2, Va	659



A



C



D



E



F



G



H



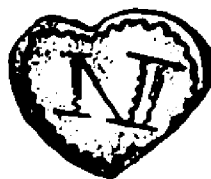
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J



K



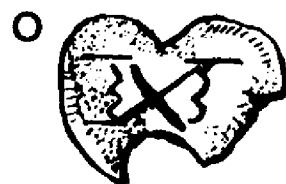
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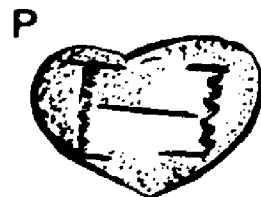
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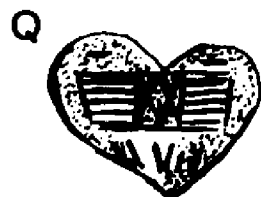
N



O



P



Q



R



S



T



TABLE 35     Rings:   Feature Associations

Taxonomic Designation	Frequency	Feature Number
CI,   SA, T1	6	F. 127
T1, Cat. 1	1	F. 124
Cat. 1	1	F. 120
T3, Va	1	F. 297
T4, Va	1	F. 128
T5, Vc	1	F. 213
CII, SA, T1, Vc	1	F. 248
V1	1	F. 297
T1, Cat. 1	1	F. B#15
Cat. 1	1	F. 129
T2, Vm	1	F. 3
Vn	1	F. 5
T3, Va	1	F. 70
Vf	1	F. 246
Vk	1	F. 262
Vm	1	F. 130
SC, T1, Va	1	F. 263c
Va	1	F. 75

## PIPES

A total of 5,328 kaolin pipe fragments were recovered at Fort Michilimackinac during the 1959 through 1966 excavations. Of this total, 4,347 specimens are stem fragments; 644 are bowls and bowl fragments; 156 are heel fragments; and 181 are marked bowl, heel, and stem fragments.

Kaolin pipes have received more critical attention in the literature of historical archaeology than any other artifact category, with the possible exception of ceramics. This emphasis is justified by the demonstrated interpretative value of kaolin pipes; kaolin pipes are reliable indicators of the temporal and chronological dimensions of an historic site, within acceptable limits of error. The dating of kaolin pipes is based on the identification of a number of formal attributes which vary through time. The following attributes are noted for their chronological significance: pipe-bowl form (Oswald 1951 and 1955); pipe-stem bore size (Harrington 1954; Omwake 1956; Maxwell and Binford 1961); manufacturer's marks and decorative design elements (Atkinson 1962 and 1965; Spence 1941-1942; Oswald 1960 and 1955); and surface features such as polishing or burnishing. The most reliable kaolin pipe dates are derived by the combined study of all of these attributes, since any single attribute is susceptible to misinterpretation due to factors such as inadequate sample size and undocumented population fluctuations. In addition, many of the common manufacturer's marks found on kaolin pipes were in use for many generations and often were used by individuals other than the original manufacturer.

A critical review of the extensive literature on kaolin pipes has not been undertaken for the purpose of this report. The most significant results of kaolin pipe analysis have been produced by those individuals who have specialized in their study (that is, Walker, Oswald, and Omwake). The purpose of this present section on kaolin pipes, therefore, is to formally describe the Fort Michilimackinac sample in terms of contextual variation. Interpretations are thus suggested primarily on the basis of archaeological rather than comparative evidence; comparative evidence will be presented when it applies directly to the identification of specific pipe types from the site.

#### Classification and Description:

The classification of kaolin pipe bowls and stems are presented separately. Kaolin pipe bowls are divided into four levels of classification; the class (based on presence or absence of manufacturer's marks or decorative design elements); the series (based on the different means of producing the marks or design elements); the type (based on the location and representation of the mark or design element); and the variety (based on minor variations in the mark or design element). Several standardized terms are applied to the description of kaolin pipes: bowl (including the bowl base and heel) and heel (defined as the short projection from the bowl base). The heel may be either pointed (spur or spike style) or flattened. The right and left sides of a bowl are distinguished by the pipe's orientation in the user's mouth. The back bowl face is the side of the bowl closest to the user.

Kaolin pipe distributional and feature associational evidence is presented in the descriptive text. Interpretations are also presented in the text and are summarized in the concluding discussion. The description of each pipe type or variety includes information on pipe-stem bore size (given in multiples of 1/64th of an inch). This information is summarized and dated by the Binford regression formula (Maxwell and Binford 1961: 108) whenever more than five measurable specimens are present in a sample. Table 37 summarizes pipe stem and bowl feature associations and lists the stem-bore date computed for each feature.

#### Pipe Bowls

##### Class I    Marked or Decorated

##### Series A    Molded Mark or Decoration

Type 1    Mark consists of letters RT enclosed by a heart symbol; three stars border the heart; this mark appears on the left and right bowl faces

Figure 42 A

5 specimens

Dimensions (2 specimens): bore, 6.0, 4.5.

The bowl rim on the single complete bowl is nearly parallel to the projected pipe stem.

Type 2    Mark consists of the letters GE enclosed by a circle; this mark appears on the right bowl face

Figure 42 B-C

15 specimens

Dimensions (4 specimens): bore, 4.5, 5.0, 4.0, 4.5.

Flattened and spur heels appear on CI, SA, T2 bowls. One specimen was found in F. 299. The remaining specimens are associated with 1730-1760 French structures.

Interpretation: probably of English manufacture.

Type 3 Mark consists of a W on left side of heel and an M on right side of heel

Not illustrated

7 specimens

Dimensions (6 specimens): bore average, 4.5; date, 1759.

Short, flattened heels appear on 3 specimens. The bowl rim on the single complete specimen is parallel to the projected stem. One specimen was recovered from F. 79.

Interpretation: English manufacture and use.

Type 4 Mark consists of small, raised heart symbol on left and right sides of the heel

Figure 42 D

9 specimens

Dimensions (6 specimens): bore average, 5.0; date, 1740.

Short, flattened heels on 3 specimens. One specimen recovered from F. 85.

Interpretation: English manufacture.

Type 5 Mark consists of small, raised dot on left and right sides of the heel

Not illustrated

5 specimens

Dimensions (5 specimens): bore average, 5.0; date, 1740.

One specimen has a short, flattened heel.

Interpretation: none.

Type 6 Decorative design element consists of raised lines from the bowl base which extend halfway up the bowl on all faces.

Figure 42 E

6 specimens

Dimensions (2 specimens): bore, 5.5, 5.0.

Bowl rim is parallel to the projected stem on the single complete bowl.

Interpretation: probably after 1770, based on style of decoration.

Type 7 Scroll, branch, or floral design elements

Five CI, SA, T7 varieties are defined on the basis of minor differences in design element. Only 1 specimen of each variety has been found, and all were fragmentary.

Variety a Raised rose and thistle design around entire bowl.

Figure 42 F  
1 specimen

This specimen has a spur heel.

Variety b Raised branch design on both sides of front bowl-face mold seam.

Figure 42 G  
1 specimen

Variety c Raised branch design on both sides of back bowl-face mold seam; elongated triangle containing 2 clusters of 7-dot flower designs on left face.

Figure 42 H  
1 specimen

Variety d Raised branch design on both sides of back bowl-face mold seam; circular crest containing harp and crown symbols on the left bowl face.

Figure 42 I  
1 specimen

This specimen has a short, flattened heel.

Variety e Scroll and flower design on entire bowl surface.

Figure 42 J  
1 specimen

Discussion: Class I, Series A, Type 7

CI, SA, T7 pipe bowls are dated after 1770 on the basis of comparative evidence.

Series B Stamped or Impressed Mark or Design Element

Type 1 Mark consists of the letters TD enclosed within a circle.

Three CI, SB, T1 varieties are defined on the basis of secondary design elements within the circle.

Variety a    Winged or curled leaf design above and below letters TD.

Figure 42 K  
36 specimens

Variety b    T-like symbol above letters TD.

Figure 42 L

This specimen is broken below the TD.

Variety c    Winged or curled leaf design below TD; two impressed dots above TD.

Figure 42 M  
1 specimen

Discussion: Class I, Series B, Type 1

All CI, SB, T1 bowls are characterized by short, flattened heels. Ten specimens were measurable and had an average bore diameter of 5.05; a date of 1739 may be assigned using the Binford formula. CI, SB, T1 specimens were found in 8 different features: F. 85, F. 89, F. 265, F. 267, F. 213, F. 248, F. 102, and F. 83. Eleven specimens were found within the garden area north of the NNW rowhouse unit.

Interpretation: English manufacture; French and British use after 1750.

Type 2    Mark consists of letters WM enclosed within a circle; a winged or curled leaf design occurs below the letters

Figure 42 N  
1 specimen

Type 3    Mark consists of wine goblet enclosed in a circle; located on the back face of bowl

Figure 43 A  
4 specimens  
Dimensions (1 specimen): bore, 6.0.

Interpretation: Dutch manufacture.

Type 4 Rampant lion symbol on bowl base

Figure 43 B

3 specimens

Dimensions (3 specimens): bore, 6.0, 6.0, 6.0.

Interpretation: probably Dutch manufacture based on glossy,  
burnished, surface appearance.

Type 5 Deer symbol on bowl base

Figure 43 C

1 specimen

Dimensions (1 specimen): bore, 6.0.

Interpretation: probably Dutch manufacture based on glossy,  
burnished, surface appearance.

Type 6 Mark consists of number 16, with a crown symbol above; located on the bowl base

Figure 43 D

2 specimens

Dimensions (2 specimens): bore, 6.0, 6.0.

Interpretation: Dutch manufacture.

Type 7 Mark resembles powder horn with looped suspension cord; placed on flattened-heel bottom

Figure 43 E

1 specimen

Dimensions (1 specimen): bore, 5.5.

Interpretation: probably Dutch manufacture.

Series C Stamped and Molded Design ElementsType 1 Letters R, TIP, and PET enclosed in circle molded on right bowl face; letters RT stamped on back bowl face

Figure 43 F

16 specimens

Dimensions (7 specimens): bore average, 4.64; date, 1754.

CI, SC, T1 specimens are without heels. Bowl rims on the 2 complete bowls are parallel to the projected stems. One CI, SC, T1 specimen was found in each of the following features; F. 148, F. 152, F. 82, and F. 21. CI, SC, T1 specimens are associated with the SW and SSW rowhouse units.

Interpretation: English manufacture; French and English use,  
1740-1780.



Type 2    Impressed letters TD enclosed in circle; winged or curled leaf design above letters and single loop design below letters; molded letters T and D on opposite sides of flattened heel.

Figure 43 G

5 specimens

Dimensions (3 specimens): bore, 5.0, 5.0, 5.0.

One specimen was found in F. 215.

Interpretation: none.

Type 3    Impressed teapot symbol on flattened heel base; molded crest of six stars on left side of heel; bowl lips are rouletted

Figure 43 H

3 specimens, plus 40 rouletted rim fragments

Dimensions (3 specimens): bore, 5.0, 5.5, 5.0.

Obtuse angle between bowl rim and stem on 2 complete specimens. Bowl surfaces are glossy and burnished. CI, SC, T3 specimens were found in 4 features; F. 267 (4), F. 85 (2), F. 83 (1), and F. 249 (1) and are associated with the northwest corner of F. 5, and the SSW, SW, and NNW rowhouse units.

Interpretation: Dutch manufacture; French and British use, unknown date range.

Type 4    Impressed letters WG enclosed in circle; winged or curled leaf design above and below letters; symbol located on bowl back face; letters W and G on opposite sides of flattened heel.

Figure 43 I

2 specimens

Dimensions (1 specimen): bore, 4.5.

Bowl rim is parallel to stem on single complete specimen. One specimen was recovered from F. 215.

Interpretation: none.

## Class II    Plain or Unmarked Bowls

A total of 20 plain bowls were found; 13 without heels, 2 with spur heels, and 5 with short flattened heels. One specimen was recovered from each of the following features; F. 144, F. 21, F. 314, and F. 267.

Class I and Class II, Category 1

This category consists of bowl base fragments. Cat. 1 types are based on the presence or absence and type of heel represented.

Type 1 Bases with short, flattened heels

A total of 29 T1 heel fragments were recovered; 1 was found in both F. 80 and F. 263. The distribution of T1 heels indicates an association with the garden areas south of the SW rowhouse unit. The 24, T1 specimens with measurable stem fragments have an average bore diameter of 4.70; the computed Binford date is 1752.

Type 2 Bases with spur heels

A total of 17, T2 heel fragments have been recovered. The distribution of T2 specimens is not indicative of structural associations. The 16, T2 specimens with measurable stem fragments have an average bore diameter of 4.34 and a computed date of 1766.

Type 3 Bases without heels

110 specimens

Dimensions (62 specimens): bore average, 4.76; date, 1750.

T3 heels were found in the following features: F. 80, F. 263C, F. 252, F. 21, F. 3, F. 262, and F. 90.

Classes I and II, Category 2

This category consists of 624, non-diagnostic bowl fragments.

## Stems

Two types of kaolin pipe stems are represented in the Fort Michilimackinac sample--marked stems and plain stems.

Type 1 Stems marked with circumferentially impressed dot and saw tooth design; name of city of manufacture (GOUDA) is at each end of the design

Figure 43 K-M

15 specimens

Dimensions (14 specimens): bore average, 5.71; date, 1713.

One specimen bears the letters G.D. ROOS and GOUDA.

Interpretation: Dutch manufacture and French use; 1715-1735.

Type 2 Plain stems

4347 specimens

Dimensions (4347 specimens): bore average, 4.62; date, 1755.

The frequency and computed data of stem fragments according to bore size is presented in Table 36.

TABLE 36 Type 2 Kaolin Pipe Stems: Bore Size Frequency and Date Computed by Binford Formula

Bore Size	Frequency	Date
3.5	35	1797
4.0	821	1778
4.5	2196	1759
5.0	823	1740
5.5	335	1721
6.0	87	1702
6.5	50	1683

Contrasting patterns of site distribution have been noted between pipe-stem samples of different bore diameter. Seven distribution maps have been drawn; each represents the total number of specimens within a size category; size categories, frequencies, and Binford dates are listed in Table 36. One important distributional trait characterized each of these maps. Pipe stems were deposited more frequently in non-structural contexts, such as garden or street areas between structural units. This distribution makes it difficult to define associations between pipe-stem size categories and individual structures.

The dates provided in Table 36 indicate an inconsistency between the known dates of site occupation and the dates assignable to pipe stems derived from the site. This may be explained either by an incorrect derivation and/or use of the Binford formula or by the presence of factors (necessarily assumed inoperative by the Binford formula) which effect the differential presence of different sized pipes through time. Assuming the Binford formula to be essentially correct in that it is based on a demonstrable linear relationship between bore size and time, we are left to explain the noted inconsistencies in terms of several important external factors.

In using the Binford formula at a dual occupation site such as Fort Michilimackinac, several conditions must necessarily exist so that accurate dates may be derived from pipe-stem analysis. First, we must assume that the French and British inhabitants of the site smoked kaolin pipes with nearly the same frequency relative to population size (that is, there was neither a difference in the popularity of the custom of smoking between the French and British nor was there a difference in pipe availability of pipe-type preference between the French and British). Second, there must be an equal availability of different sized pipes at different times (that is, the period of time between pipe manufacture and importation and use must be nearly the same for different sized pipes). Third, the site's population must be stable throughout its existence.

None of these conditions existed at Fort Michilimackinac. The most important factor affecting the differential frequency of different sized pipes at the site was population size; the population of the site grew rapidly after British occupation. Of secondary importance is the probability that the French used micmac pipes with greater frequency than did the British (due either to availability or preference). A third possible factor is the likelihood that the French supply network was less efficient than that of the British; this condition would have produced a greater time lag between pipe manufacture and use during the French period of control.

In spite of these factors which probably influenced the differential presence of different sized pipes on the site and which consequently affected the accuracy of the derived Binford dates, the seven distribution maps (each showing the location of all pipes in a particular stem-bore size category) are very useful in providing a relative chronology for the location and intensity of social activity at the site between 1715 and 1781. Moreover, we are in an excellent position to identify and evaluate the factors mentioned above which might have influenced the dates derived from the Binford formula.

Each of the seven maps have been visually compared; the following results are expressed in terms of pipe-stem frequency by area of occurrence. Maps which originally referred to bore sizes 6.5 and 3.5 have been combined with those which refer to 6.0 and 4.0 bore sizes respectively; this change results in five rather than seven distribution maps.

<p>Map 1, 6.5 and 6.0/64 Bore sizes (1683, 1702)</p>	<p>High Frequency: garden area between SW and SSW rowhouse units, area of the southwest corner of the Commanding Officer's house, area west of the NW corner of F. 5. Present but Less Frequent: random in all areas.</p>
--	---

Map 2, 5.5/64  
Bore size (1721)

High Frequency: garden area north of NNW rowhouse unit, area of northwest corner of F.5, area of the southwest corner of the Commanding Officer's house, central area of F. 5 enclosure, garden area between SW and SSW rowhouse units.

Present but Less Frequent: garden area south of the SSW rowhouse unit, SSW, SW, and NNW rowhouse units.

Map 3, 5.0/64  
Bore size (1740)

High Frequency: NNW, SSW, and SW rowhouse units, garden areas north and south of the NNW rowhouse unit, area of the Commanding Officer's house, garden areas north and south of the SSW rowhouse unit.

Present but Less Frequent: Church and Priest's house area, British soldier's barracks (F. 3), area of the northwest corner of F. 5.

Note that stem frequency in the central area of the F. 5 enclosure has decreased.

Map 4, 4.5/65  
Bore size (1759)

High Frequency: NNW, SSW, and SW rowhouse units, south half of the British soldiers' barracks, F. 3 (this association could also be with an underlying French house, F. 31), garden areas north and south of the SSW rowhouse unit.

Present but Less Frequent: random in all other areas.

Map 5, 4.0 and 3.5/64

High Frequency: garden area north of NNW rowhouse unit, south half of British soldiers' barracks (F. 3), west half of the SSW rowhouse unit, garden area south of the SSW rowhouse unit.

Present but Less Frequent: random in all other areas.

A very definite frequency decrease from the preceding period is noted in the NNW and SW rowhouse units and in the garden area north of the SSW rowhouse unit.

The above associations indicate definite variations between pipe-bore size categories and areas of occurrence through time. These associations are compared with other archaeological evidence in chapter 4 to determine structural dates and contemporaneity; chapter 4 also includes a discussion of the factors mentioned above as they relate to the reliability of the Binford pipe-stem dates.

Type 2 pipe stems have also been used in this report to approximately date individual features based on the Binford procedure (this evidence

is summarized in Table 37 ). The results of dating individual features by this means are far from accurate in many cases and must be compared with dates derived by independent means. We can, at best, hope for a very generalized chronological arrangement of features from earliest to latest, since the frequencies of features assigned to individual date brackets are disproportional and inconsistent with the known period and density of site occupation. For example, only one feature (F. 88) was found to date between 1730 and 1740. The remaining features were assigned post-1740 dates in the following frequencies: 1740-1750 (4 features), 1750-1760 (20 features), 1760-1770 (3 features), and later than 1770 (2 features).

#### Discussion:

The following general conclusions may be drawn from the analysis of Kaolin pipes.

1. The results of the Binford procedure for dating stem fragments must be evaluated in terms of external and internal variables which affected the site's occupation and the use of kaolin pipes by its inhabitants. Other authors, such as Noel Hume (1963) and Wylie (1969), have documented important conditions which affect the validity of Binford's formula.
2. Nationality of use, country of manufacture, and date of use have been suggested in the text for specific kaolin pipe types when applicable. The two most significant distinctions appear to be between the use of Dutch versus English pipes and between the time of use of spur-heel versus flattened-heel pipe styles. Dutch pipes were used more frequently during the French period of control. This suggestion is based on the early date (1713) assigned to 15 Dutch stems and on comparative evidence which identifies the use of obtuse bowl forms (characteristic of

Dutch pipes at the site) between ca. 1650 and 1725. Flattened-heel pipe styles were in use between ca. 1730 and 1760. Spur-heel pipe styles were in use between ca. 1750 and 1780. These dates are based largely on the Binford formula although they are in part confirmed by distributional evidence.

3. English-made pipes were in use throughout the period of site occupation; greater frequencies occurred during the period of British control.
4. Kaolin pipes were much less frequent during the period of French control; this is a measure of the relatively low population during this period and, possibly, of the extensive use of Micmac pipes by the French.
5. Kaolin pipes are excellent indicators of trash deposit locations and periods of use.

TABLE 37 Kaolin Pipe Feature Associations and  
Computed Bore Diameter Date

Feature	Stems; Frequency	Bowls: Frequency	Date
3	29	CI, SC, Cat. 1, T3 (1) CII (1)	1759.68
6	6		1740.55
12	1		
13	1		
14	1		
16	3		
20	3		
21	34	CI, SB, T5 (1) CI, SC, T1 (1) CI, SC, Cat. 1, T3 (1) CII (1)	1759.68
29	1		
30	1		
38	2		
44	4		
45	1		
46	1		
54	4		
71	3	CI, SC, Cat. 1, T3 (1)	
74	3		
75	1		
77	4		
79	19	CI, SA, T3 (1)	1755.86
80	6	CI, SC, Cat. 1, T1 (1)	1767.33
81	12		1755.86
82	17	CI, SC, T1 (1)	1763.51
83	13	CI, SB, T1 (1) CI, SB, T8 (1)	1748.20
84	1		
85	29	CI, SA, T4 (1) CI, SB, T1 (1) CI, SB, T8 (2) CII (1)	1755.86
87	11		1752.03
88	6		1736.72
89		CI, SB, T1 (1)	
90		CI, SC, Cat. 1, T3 (1)	
94	1		
97	1		
100	1		
101	1		
102	2	CI, SB, T1, Va (1)	
104	7		1759.68



TABLE 37 (Cont.)

Feature	Stems: Frequency	Bowls: Frequency	Date
109	1		
116	1		
118	8		1755.86
123	12		1767.33
124	1		
126	5		1748.20
128	2		
129	2		
130	4		
132	1		
134	5	CII (1)	1752.03
135	4		
138	1		
142	5		1782.63
144		CI, SA, T1 (1)	
145	2	CII (1)	
146	1		
147	1		
148		CI, SC, T1 (1)	
150	2		
152	1		
153	1		
154	1		
156	1		
160	2		
209	2		
213	6	CI, SB, T1 (1) CI, SC, Cat. 1, T2 (1)	1755.86
214	2		
215	20	CI, SC, T2 (1) CI, SC, T4 (1) CI, SC, T1 (1)	1759.68 1759.68
216	6		
221	1		
227	5		
230	11	CII (1)	1755.86
231	1		
233	1		
236	1		
238	2		
240	3		
241	2		
248	8	CI, SB, T1 (1)	1748.21
249	14	CI, SC, T3 (1)	1752.03
252	1	CI, SC, T1 (1) CI, SC, Cat. 1, T3 (1)	

TABLE 37 (Cont.)

Feature	Stems: Frequency	Bowls: Frequency	Date
254	1		
262	25	CI, SC, Cat. 1, T3 (1)	1755.86
263	3	CI, SC, Cat. 1, T1 (1)	
		CI, SC, Cat. 1, T3 (1)	
265	16	CI, SB, T1 (1)	1759.68
267	41	CI, SB, T1 (1)	1752.03
		CI, SB, T8 (4)	
		CII (1)	
		CII (1)	
271	2		
282	2		
283	1		
284	1		
296	17		1755.86
297	5		1752.03
298	1		
299	1	CI, SA, T2 (1)	
302	1		
310	7		1755.86
314	5	CII (1)	1794.12
321	1		
341	3		

Figure 42 Kaolin Pipes (Actual Size)

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	CI, SA, T1	687
B	T2	2054
C	T2	645
D	T4	580
E	T6	1400
F	T7, Va	
G	Vb	164
H	Vc	849
I	Vd	2297
J	Ve	1735
K	SB, T1, Va	2120
L	Vb	1483
M	Vc	1459
N	T2	552

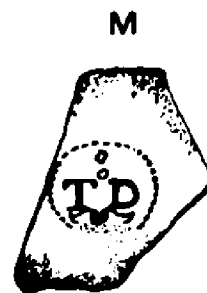
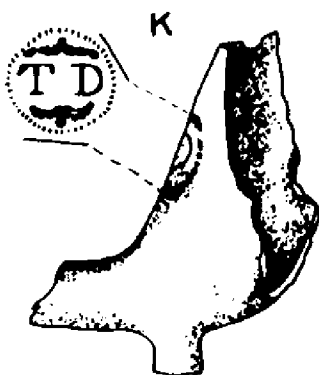
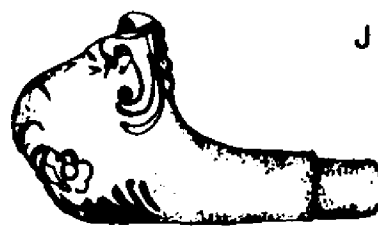
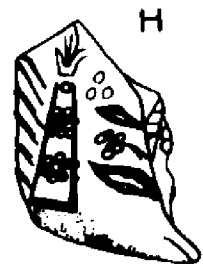
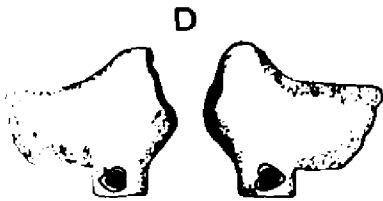
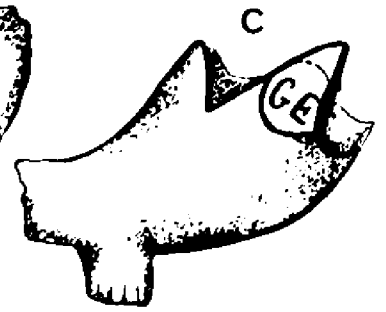
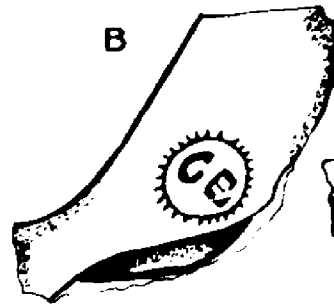
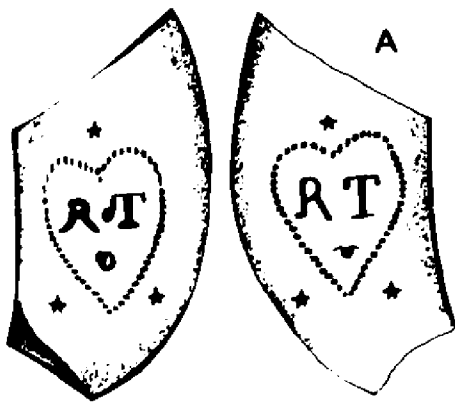
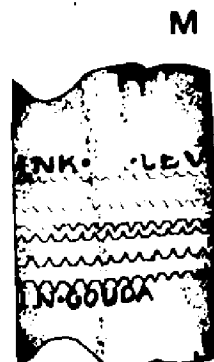
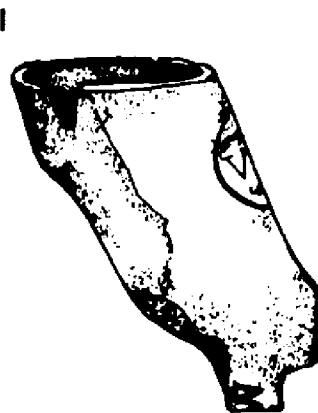
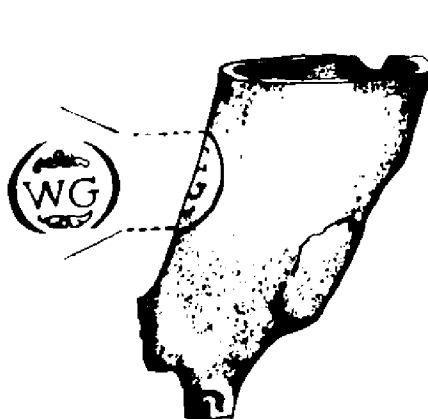
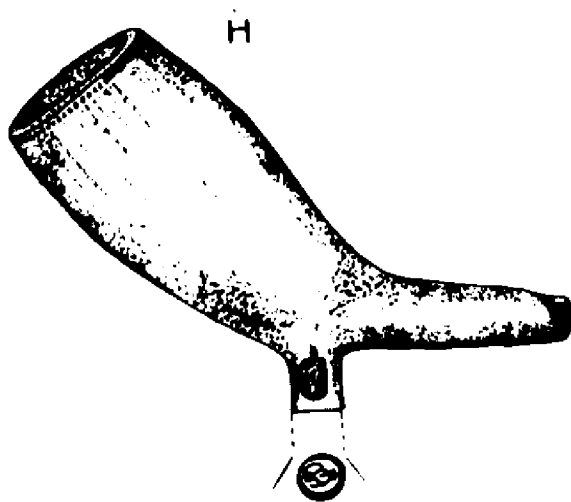
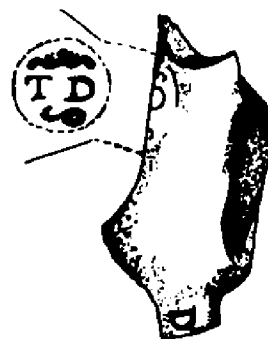
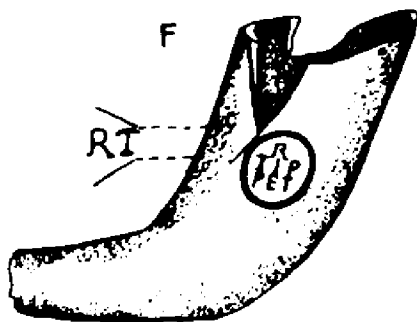
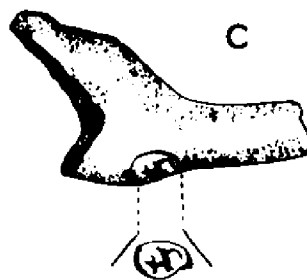
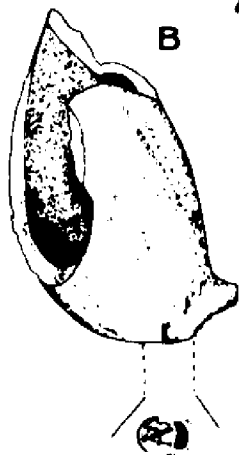


Figure 43 Kaolin Pipes (Actual Size)

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	CI, SB, T3	1468
B	T4	1834
C	T5	243
D	T6	2378
E	T7	1420
F	SC, T1	2620
G	T2	3284
H	T3	2212
I	T4	2073
J	Stems, T1	433
K	Stems, T1	1446
L	Stems, T1	1353
M	Stems, T1	2104



## JEW'S-HARPS

The Jew's-harp is a small musical instrument consisting of two metal parts: a lyre-shaped iron or brass frame and a slender iron vibrator (tongue) which is attached to the curved end of the frame head and extended past the length of the frame shanks. The distal end of the vibrator is curved or bent to form a finial.

There appear to have been two different techniques of manufacturing Jew's-harps: casting (brass specimens) and hand forging (iron specimens). A notch to receive the iron vibrator is cut into one side of the frame head on iron specimens; this feature is cast on brass specimens. The vibrator is set into this notch and secured by hammering metal from both sides of the notch down over the vibrator edges.

### Classification and Description

The classification and description of Jew's-harps is based on the recognition of five variables: material, form, shape, size, and marks. Three levels of taxonomic differentiation are defined from these variables: the series, type, and variety. Series distinctions are based on differences in form. In this context form refers to the structure or morphology of an artifact rather than to any specific attribute such as shape or metal type. Types are based on difference in frame metal. Varieties are based on differences in frame shape. Size distinctions and the presence and type of marks are presented as descriptive attributes only.

Series A    Flattened Frame Head, Parallel ShanksType 1    Iron

Figure 44   A

4 specimens

Dimensions (4 specimens):   length, 43.3, 35.3, greater than 28.6, 39.1; width, 33.3, 25.1, 33.2, 33.2.

Iron specimens exhibit flattening across the frame head and down both sides to the point of shank head juncture. Shanks retain the square shape of the preformed iron stock. Type 1 specimens exhibit a triangular head shape with rounded corners.

Type 2    Brass

Figure 44   B-E

8 specimens

Dimensions (7 specimens):   Length 36.3-39.4, average, 37.6; width, 22.8-29.2, average, 25.0.

Brass specimens are flattened across the frame head and down both sides to the point of shank juncture. Frame shanks are square in cross section. The frame head is triangular in shape. Seven specimens show a stamped mark at the center of the flattened frame head. Three different marks are represented: a B (2 specimens), an R (3 specimens), and a symbol composed of two elements, each similar to an H with concave sides (2 specimens). Except for one specimen, this sample of seven exhibits a great uniformity in both width and length dimensions. An additional specimen represents a second size category with a width of 14.3 mm, and a length of 26.2 mm.

Series B    Square- to Diamond-Shaped Cross Section Throughout, Tapered ShanksType 1    Brass, file marks on all surfacesVariety a    Round-shaped frame head.

Figure 44   F-J

70 specimens

Dimensions (57 specimens):   length, 38.5-66.0, average 55.0, standard deviation, 6.83; width, 23.0-30.0, average 25.8, standard deviation, 1.87.

Two size categories based on length are tentatively suggested: one narrowly defined between 48.0 mm and 50.0 mm, and one broad category between 54.0 mm and 61.0 mm. No further size distinctions could be made although other dimensions such as width and weight were not tested. A correlation coefficient



of .75 reveals that the variables of length and width are fairly closely related.

Variety b    Triangular-shaped frame head.

Figure 44    K

1 specimen

Dimensions (1 specimen):    length, 51.3E; width, 28.4.

Type 2    Iron

File marks are not present on iron specimens. There are several other attributes which distinguish this type from Series B, Type 1. The center ridge, which forms one corner of the square iron stock, is hammered flat across the entire frame head. This produces a beveled effect on the head surface. There is a great deal of variation between specimens in the extent and degree of this bevel.

Variety a    Round- to slightly oval-shaped frame head.

Figure 44    L-N

24 specimens

Dimensions (18 specimens):    length, 52.0-66.7, average, 30.3, standard deviation, 4.30.

A standard deviation of 4.30 for width indicates that this is a highly variable dimension, although directly related to variation in length as suggested by a high coefficient of correlation, .85. Two broad length categories were identified: one between 54.0 mm and 58.0 mm, and a second between 61.0 and 65.0 mm.

Variety b    Triangular-shaped frame head.

Figure 44    O

15 specimens

Dimensions (15 specimens):    Length, 51.7-62.0, average, 56.4; width, 34.0-42.5, average, 38.5.

Width and length measurements deviate moderately from their respective means.

Table 38 summarizes metric attributes for all Jew's-harp types that were described above. One additional between-type comparative measure has been computed.

TABLE 38 Fort Michilimackinac Jew's-Harps Measurements

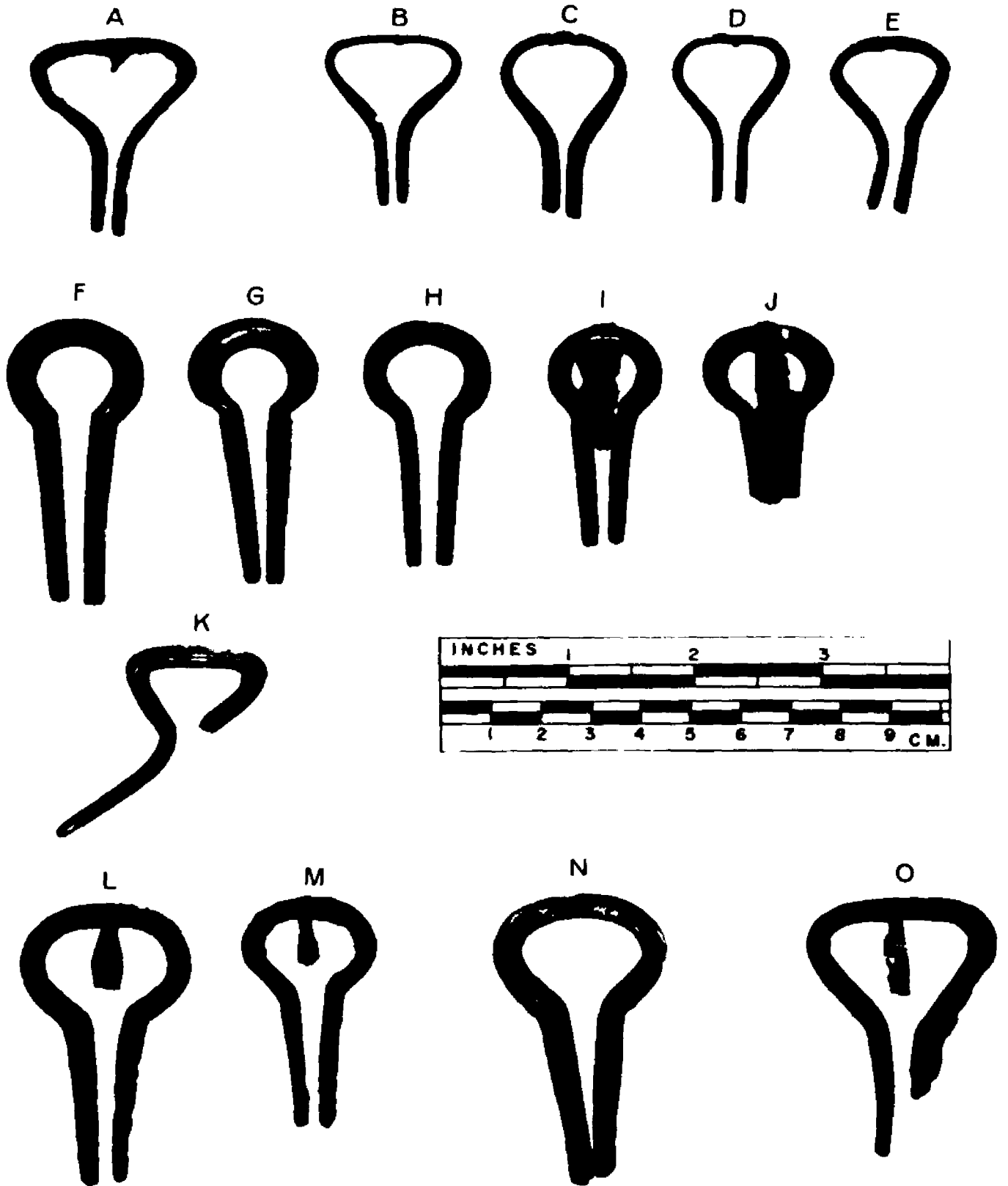
taxonomic signation	Description	Fre- quency	Percent of Total	Total Measured	Width Range	Width Mean	Width SD	Length Range	Length Mean	Length SD	A	CC
<u>Series A</u>												
Type 1	Iron, flat head	4	3.27	4	25.1-33.3			35.3-43.3				
Type 2	Brass, flat head	8	6.55	7	22.8-29.2	25.0		36.6-39.4	37.6		45%	
<u>Series B</u>												
Type 1												
Variety a	Brass, round head	70	57.3	57	23.0-30.0	25.8	1.87	38.5-66.0	55.0	6.83	67%	.75
Variety b	Brass, trian- gular head	1	.85	1	28.4			51.3 E				
Type 2												
Variety a	Iron, round head	24	19.67	18	22.5-37.3	30.3	4.3	52.0-66.7	59.7	4.63	61%	.85
Variety b	Iron, trian- gular head	15	12.29	15	34.0-42.5	38.5		51.7-62.0	56.4		52%	
TOTAL		122	100									

422

-Average percent of frame length represented by shank length  
 -Correlation coefficient between length and width  
 -Standard deviation

Figure 44 Jew's-Harps

Figure Designation	Taxonomic Designation	Catalogue Number, MS <sup>2</sup>
A	SA, T1	650
B	SA, T2	2593
C	SA, T2	1451
D	SA, T2	3468
E	SA, T2	186
F	SB, T1, Va	2791
G	SB, T1, Va	2880
J	SB, T1, Va	2060
I	SB, T1, Va	92
J	SB, T1, Va	23
K	SB, T1, Vb	1
L	SB, T2, Va	2686
M	SB, T2, Va	1434
N	SB, T2, Va	1053
O	SB, T2, Vb	2677



### Associational Evidence:

Series B, Type 2, Varieties a and b Jew's-harps have been combined into one comparative category since the analysis of individual varieties did not produce significant results. The fact that these two varieties differ only in the shape of frame head justifies this combination. Three samples will thus be compared in the following discussion: Series A; Series B, Type 1; and Series B, Type 2.

The distribution of Series A specimens within the site appears to be random; there is no observable concentration or association between this category and any specific structures or artifact types.

A highly contrasting distribution is noted between Series B, Types 1 and 2. Each type is found in one major area which is exclusive from the other. Approximately 43 percent of Series B, Type 1 specimens are found concentrated in a circular area within the center of the SW rowhouse unit and between this unit and the SSW rowhouse unit. Only one specimen of Series B, Type 2 is found within this entire area. A number of Series B, Type 2 specimens are found concentrated in the area of the NNW rowhouse unit, whereas only one specimen of Series B, Type 1 has been found in this area. Also, an area within the northwest corner of Feature 5 (earliest French stockade), contains four Series B, Type 2 specimens and no Series B, Type 1 specimens. Other areas of presence and absence are approximately the same between the two types, although both appear to be randomly distributed in areas other than those above. The notation of specific structural features within which these different types were found adds little to their interpretation. Series B, Type 1, Variety

a specimens were found in four different features: F. 296 (1), British Zone; F. 297 (1), basement in the SSW rowhouse; F. 248 (1) pit in the SW rowhouse; and F. 215 (2) basement in the SW rowhouse unit. One each of Series B, Type 2, Variety a specimens were found in three individual features: F. 296, British Zone; F. 124, clay apron around the commanding officer's house; and F. 83, basement in the NW rowhouse unit.

#### Comparative Evidence:

Jew's-harps have been found in small quantities at a number of historic sites (Table 39 ). Several of the sites listed contribute little to an understanding of differences in Jew's-harps types through time, either because the specimens cannot be adequately dated, or they cannot be identified as to specific type. The single brass specimen from Pemaquid, Maine, could apparently date between 1625 and 1775; the one brass specimen from Corchaug, New York, appears to represent a different style (that is, similar to Series A, Type 2) due to the R mark; and the six brass specimens from the Strickler Site, Pennsylvania, cannot be identified for comparative purposes. The remaining sites which have produced iron specimens range in date from 1640 to 1830. Brass specimens other than those problematical examples already noted appear to date after 1740. This comparative table gives little evidence for suggesting a time difference between iron and brass specimens; both types occur during the seventeenth, eighteenth, and early nineteenth centuries.

TABLE 39 Jew's-Harps Comparative Evidence

Site	Approximate Site Dates	Pre- quency	Length*	Width*	Michilimackinac Typology	Source
Pemaquid, Me.	1625-1775	1B	50E	21.2E	SB, T1, Va	Camp 1967: 6
		1I	50E	28.6E	SB, T2, Va	
Corchaug, N.Y.	1640-1660	1B	48E	31E	SA, T2	Solecki 1950: 30
		1I	39E	24E	SB, T2, Va	
Strickler, Penn.	1650-1675	6B				Futen 1959: 140
Shantok, Conn.	1620-1750	1I	66.5E	31.5E	SB, T2, Va	Salven 1966: 10
Bell, Wis.	1680-1730	1I	60E	39E	SB, T2, Va	Wittry 1963: 35
Pensacola, Fla.	1722-1752	2I	50.5E		(1) SB, T2, Vb	Smith 1965: 63
		1I	69.8		SB, T2, Va	
Ahumada, Tex.	1756-1771	1I	67	38	SB, T2, Va	Tunnell and Ambler 1967: 71-72
Alamo, Tex.	1740----	1B	63	28	SB, T1, Va	Greer 1967: 83
Longlac, Ont.	1740-1921	1I	48E		SA, T1, (?)	Dawson 1969: 49
		1B	48E		SB, T1, Va	
Big Tree, N.Y.	ca. 1770	2B			SB, T1, Va	Hayes 1965: 37-38, 55
		1I				
Orringh Tavern, N.Y.	1790-1830	1I			SB, T2, Va	Hayes 1965: 37-38, 55
Canawagus, N.Y.	ca. 1800	1B			SB, T2, Va	Hayes 1965: 37-38, 55
Spokane, Wash.	1800-1826	3B	57x26, 51x22, 48x26		SB, T1, Va	Combes 1964: 19, 43
Posey, Okla.	1830-1840	2B	46-48	21.E	SB, T1, Va	Wyckoff and Barr 1968: 42-43

\* Converted from inches to mm where necessary

B Brass

I Iron

### Historical Evidence:

In the hopes of supplementing the archaeological record, a number of trade good and personal property lists dating between the seventeenth and early nineteenth centuries were reviewed. Five references to Jew's-harps were found as follows:

- "Jews Harps 6 for a large Racoon"      dated 1765,  
British (Flick 1925: V. 4, 895).
- "Jews Harps small and large"      dated 1761, British  
(Flick 1921: V. 3, 334).
- "20 Groce of Small Jews Harps ---42/----42"  
dated 1770, British (Flick 1931: V. 7, 782).
- "20 Groce of the smallest brass Jews Harps"  
dated 1769, British (Flick 1931: V. 7, 780).
- "brass jews'-harps"      dated 1749 from a British  
document (Jacobs 1966: 100).

The first four references are from the letters and documents of Sir William Johnson. These citations give us information on the relative value, size, and material of Jew's-harps.

### Interpretations:

Several problems have been defined with respect to understanding differences in the frequency and types of Jew's-harps found on North American historic sites. First, nearly 4-1/2 times as many specimens were recovered from Fort Michilimackinac than from a total of specimens at 14 other sites which have been reported. Although Jew's-harps are very common at Fort Michilimackinac, it is clear that they are uncommon in the majority of archaeological sites and in the historical literature. Second, the distributional evidence from Fort Michilimackinac indicates that there are important temporal and/or



social differences between brass and iron Jew's-harps. Temporal differences between brass and iron Jew's-harps are very tentatively suggested as follows: both brass and iron specimens were in use during the last 20 years of site occupation. Brass specimens, however, occur earlier at the site than do iron specimens; they are found at least by 1730-1735. This conclusion is the most acceptable at present and is based on the inconclusive comparative and distributional evidence available. Additional research at Fort Michilimackinac and elsewhere will hopefully permit the dating of different Jew's-harps types on a more objective basis.

## AWLS

A total of 226 awls were recovered at Fort Michilimackinac during the 1959 through 1966 excavation seasons.

### Classification and Description:

The description of awls is based on four attributes:

- (1) means of attachment of awl to handle, (2) cross section shape,
- (3) size as defined by the dimension of length, and (4) material.

Two levels of taxonomic distinction are based on two of the above attributes: (1) type which is distinguished by different materials, and (2) variety which is distinguished by different means of attachment.

### Type 1    Iron

#### Variety a    Offset attachment.

Figure 45    A

45 specimens

Dimensions (16 specimens): length average, 122.4, standard deviation, 15.2, range, 92.4-147.7.

T1, Va awls are square- to diamond-shaped in cross section and have a center offset shaft which serves to "seat" the awl in a receiving handle. All 4 sides of the awl shaft taper from the center of the shaft to pointed ends. The presence of specific length categories is not indicated by awl measurements.

#### Variety b    Knob attachment.

Figure 45    B

10 specimens

Dimensions (4 specimens): length range, 96.0-116.7.

T1, Vb awls have a rectangular protrusion or knob around the center of the shaft and are diamond-shaped in cross section.

Variety c Notch attachment.

Figure 45 C

1 specimen

Dimensions (1 specimen): length, 117.5.

The single T1, Vc specimen exhibits anular notches in opposite sides of the shaft center. Half of this specimen is round in cross section and tapers to a fine point; the other half is square in cross section.

Variety d Shaft center attachment.

Figure 45 D-F

252 specimens

Dimensions (59 specimens): length average, 99.8, standard deviation, 11.3, range, 77.9-132.0.

T1, Vd specimens are square in cross section. The center of the shaft is the point of maximum thickness and serves to secure the awl within a handle. Specific size categories are not definable on the basis of length measurements. The majority of specimens are between 90.0 mm and 115.0 mm long. Seven bone or antler awl handles were recovered (Figure 45 K-Q). T1, Vd awl blades are inserted in 4 of these specimens.

Variety e Rivet (?) attachment.

Figure 45 G

1 specimen

Dimensions (1 specimen): length, 112.9.

This specimen has a round hole through the axis of the shaft at the center point. The shaft is rectangular in cross section and tapers on all 4 sides to the ends of the shaft. A rivet (?) or pin apparently was passed through the center hole in order to secure the blade to a handle.

Variety f Knob attachment (single).

Figure 45 H

1 specimen

Dimensions (1 specimen): length, 100.0.

This specimen has a single knob on 1 side of the awl shaft at the center and is square in cross section.

Type 2 Bone

Figure I;J

17 specimens

Dimensions (7 specimens): length range, 45.7-170.0

### Associational Evidence:

Contrasting distributional patterns are noted for Type 1, Variety a and Type 1, Variety b, the two most common varieties. Type 1, Variety a specimens were found within the NNW and SW rowhouse units, in the garden area south of the SW rowhouse unit, and in an area outside of the NW corner of the early French stockade, F. 5. Feature associations (Table 40 ) conform to this pattern of distribution. Absences are noted in British military structures within the earliest French stockade, F. 5, and in the area south of the 270 grid line (including the SSW rowhouse unit). Type 1, Variety d specimens were found commonly in all rowhouse units, within the French guardhouse, F. 60, and in the garden areas between rowhouses; they were found infrequently in British military contexts. Table 40 lists awl feature associations in each of the major areas of distribution.

### Comparative Evidence:

Although awls have been reported from several other sites (Jelks 1967: 28-29; Wittry 1963: 34; Ridley 1954: 49), this limited evidence does not permit cross-dating.

### Interpretations:

The large quantity and broad spatial distribution of awls indicate that they were commonly used by both civilian and military personnel throughout the period of site occupation; it is also known from eighteenth-century trade good lists that awls were an important item of trade with the Indians.

The most common awl type, Type 1, Variety d, was in use throughout the period of site occupation. The second most common type, Type 1, Variety a, was in use during a shorter period of time. The associational evidence indicates that Type 1, Variety a awls were in use at the site between 1735 or 1740 to 1781. A period of use at the site cannot be ascribed to Type 2 awls with any degree of certainty.

Figure 45      Auls

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	T1, Va	3482
B	Vb	888
C	Vc	2483
D	Vd	2258
E	Vd	669
F	Vd	203
G	Ve	944
H	Vf	723
I	T2	2111
J	T1, Vd (handle)	1322
K	T1, Vd (handle)	2635
L	T1, Vd (handle)	358
M	T1, Vd (handle)	3336
N	T1, Vd (handle)	3231
O	T1, Vd (handle)	1441
P	T1, Vd (handle)	2852
Q	T1, Vd (handle)	2477

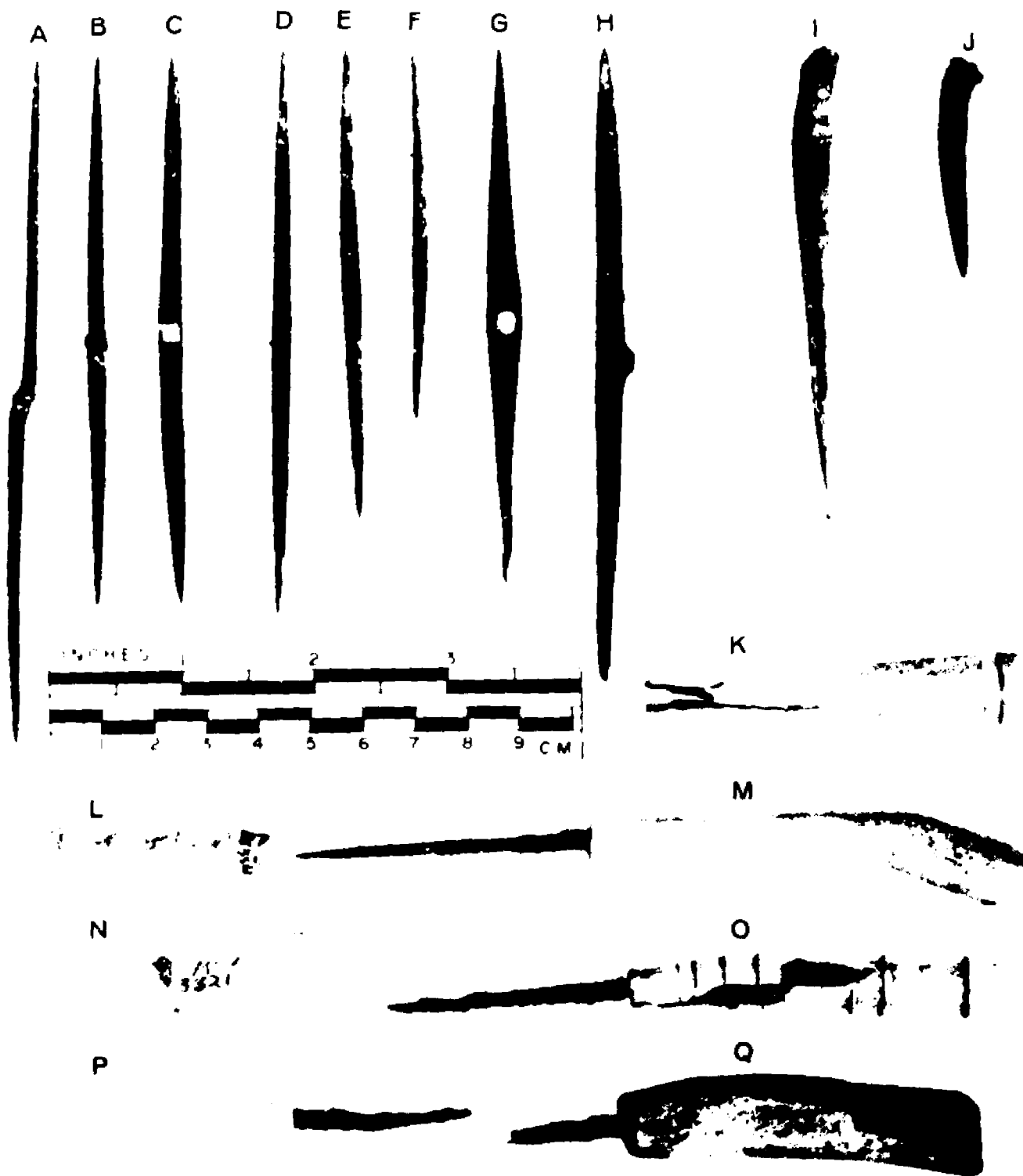


TABLE 40      Awl Feature Associations

Taxonomic Designation	Frequency	Feature
T1, Va	1	215
	1	209
	1	88
	1	85
T1, Vb	1	83
T1, Vd	4	21
	1	262
	1	75
	11	118
	1	130
	1	265
	2	85
	2	297
	1	72
	4	267
	1	83
	1	81
	1	209
	1	101
	1	241
	1	77
	1	296
T1, Vd (handle)	1	262
	1	83
T2	1	267
	1	21



## CERAMICS

A total of 16,118 non-aboriginal ceramic fragments were recovered at Fort Michilimackinac during the 1959 through 1966 excavations; the majority of these artifacts--those excavated from 1959 through 1965--have been described in a report by Miller and Stone (in press). Since the analysis of the archaeological evidence had not been completed at the time of preparation of this report, interpretations of nationality and date of use were based primarily on historical information.

Miller and Stone's ceramic classification is not formally structured but is based on traditionally recognized distinctions derived from historical documentation of ceramic manufacture and technology. The classification used in this report as a descriptive format may be outlined as follows:

### Class A Earthenware

#### Group I Tin-Glazed Earthenware

- Type A Blue and White
- Type B Polychrome
- Type C Brown and White
- Type D Powdered Blue or Purple

#### Group II English Cream-Colored Earthenware

- Type A Plain
- Type B Relief Borders
- Type C Polychrome
- Type D Handles, Finials, Spouts
- Type E Transfer Printed

#### Group III Coarse Earthenware

- Type A Unglazed Redware
- Type B Brown Glazed Redware
- Type C Green and Purple Decorated Redware
- Type D Green Glazed Earthenware
- Type E Brown and Green Glazed Earthenware
- Type F Yellow Glazed Earthenware
- Type G Carmel Glazed Earthenware
- Type H Slip-Decorated Earthenware

<u>Group IV</u>	Fine Earthenware
<u>Type A</u>	Whieldon Type (Brown and Green Splashed Glaze)
<u>Type B</u>	Whieldon Type (Tortoise-Shell Glaze)
<u>Type C</u>	Whieldon-Wedgwood Type (Fruit and Vegetable Motifs)
<u>Class B</u>	Stoneware
<u>Group I</u>	English White Salt-glazed Stoneware
<u>Type A</u>	Plain White
<u>Type B</u>	Relief Decorated
<u>Type C</u>	Scratch Blue
<u>Type D</u>	Polychrome
<u>Group II</u>	Stoneware Miscellaneous
<u>Type A</u>	Rhenish Stoneware
<u>Type B</u>	Brown Stoneware
<u>Type C</u>	Red Stoneware
<u>Class C</u>	Porcelain
<u>Group I</u>	Chinese Export Porcelain
<u>Type A</u>	Blue and White
<u>Type B</u>	Polychrome
<u>Type C</u>	Brown Glaze
<u>Group II</u>	English Porcelain
<u>Type A</u>	Liverpool
<u>Type B</u>	Worcester
<u>Type C</u>	Blue and White (Miscellaneous)

The purpose of this section is to supplement the Miller and Stone report with information on ceramic feature associations, site distribution, and measurements. This additional data is the basis for the interpretations presented; thus, it has frequently been possible to re-evaluate and modify the dating of ceramic types originally proposed by Miller and Stone.

The descriptive format maintained here is: all ceramic types are presented according to their order of appearance in the Miller and Stone report. Ceramic types are identified by name only and are not described; the reader is referred to the Miller and Stone report for detailed descriptions and illustrations of the ceramic types. Each type discussed includes information on feature associations and site

distribution and is interpreted on the basis of this evidence. Representative cross section sketches are presented of the major ceramic-type vessel forms. Information on measurements (rim and base diameter) is summarized in terms of the average size of different vessel forms. The Miller and Stone interpretations of nationality and date of use follow the identification of each ceramic type. New interpretations follow the discussion of feature associations and distributional evidence.

## Class A Earthenware

### Group I Tin-Glazed Earthenware

#### Type A Blue and White (eighteenth century, England and France)

Figure 46 A-L

4065 specimens (217 French on the basis of physical attributes; these are discussed separately in combination with Type B French specimens at the end of the Type B description).

#### Vessel Form Frequency and Measurements:

- Plates (322 sherds): rims (200-260 range, 220-240 most frequent, 17 specimens measured); bases (80-160 range, 8 specimens measured).
- Bowls (395 sherds): rims (140-220 range, 180-220 most frequent, 22 specimens measured); bases (80-120 range, 12 specimens measured).
- Cups (422 sherds): rims (80-100 range, 3 specimens measured); bases (40-80 range, 4 specimens measured).
- Mugs (13 sherds): bases (60-100 range, 5 specimens measured).
- Cup or Mug Rims (114 sherds).
- Miscellaneous (2795 sherds).

**Distribution:**

-High frequency: Church-Priest's house area; NNW rowhouse unit; area between NNW rowhouse unit and north wall of F. 5; SSW rowhouse unit and garden areas north and south of SSW rowhouse unit.

-Less frequent but present: NW rowhouse unit; SW rowhouse unit.

**Feature Associations (based on 1216 specimens):**

F. 54 (1)	F. 83 (10)	F. 149 (1)	F. 262 (2)
F. 21 (1)	F. 87 (1)	F. 150 (1)	F. 263C (3)
F. 70 (3)	F. 88 (1)	F. 215 (3)	F. 265 (2)
F. 71 (3)	F. 101 (1)	F. 216 (2)	F. 282 (1)
F. 74 (2)	F. 118 (4)	F. 231 (1)	F. 267 (4)
F. 79 (2)	F. 120 (2)	F. 236 (1)	F. 306 (1)
F. 81 (2)	F. 139 (2)	F. 248 (1)	F. 341 (2)
F. 82 (3)	F. 143 (1)	F. 255 (1)	

**Interpretation:** French and British use, 1715-1781, greater frequency after ca. 1750.

**Type b** Polychrome (eighteenth century, England and France)

187 specimens (76 French on the basis of physical attributes).

**Feature Associations (based on 111 specimens):**

F. 21 (1)	F. 267 (2)
F. 215 (1)	F. 296 (4)
F. 262 (2)	F. 310 (2)
F. 263C (3)	

**Interpretation:** French and British, 1717-1781.

**Discussion:** Type A and Type B French sherds (293 specimens)

**Figure 46 G-L**

**Distribution:**

-High frequency: SW rowhouse unit, garden area south of the SW rowhouse unit; garden area south of the SSW rowhouse unit.

-Less frequent but present: commanding officer's house, NNW rowhouse unit, SSW rowhouse unit.

**Feature Associations (based on 293 specimens):**

F. 21 (4)	F. 209 (1)	F. 254 (1)	F. 293 (1)
F. 30 (1)	F. 210 (1)	F. 262 (2)	F. 296 (2)
F. 77 (1)	F. 229 (1)	F. 263C (1)	
F. 88 (1)	F. 240 (2)	F. 267 (1)	
F. 118 (3)	F. 248 (1)	F. 271 (1)	

**Interpretation:** French and British use, 1715-1781, greater frequency between ca. 1735-1760.

**Type C** Brown and White (eighteenth century, France)

168 specimens

**Distribution:**

-High frequency: NW rowhouse unit; guardhouse (F. 60); garden areas north and south of SSW rowhouse unit.

-Less frequent but present: Church area; garden area north of NNW rowhouse unit.

**Feature Associations:**

F. 54 (1)	F. 118 (2)
F. 82 (1)	F. 267 (1)
F. 85 (1)	F. 296 (1)
F. 90 (1)	F. 314 (1)

**Interpretation:** French use, ca. 1720-1750.

**Type D** Powdered Blue or Purple

161 specimens

**Distribution:**

-High frequency: area between F. 3 and provisions storehouse; garden areas north and south of SSW rowhouse unit; SSW rowhouse unit.

-Less frequent but present: F. 3; outside north wall of NW rowhouse unit.

**Feature Associations:**

F. 21 (1)	F. 250 (1)
F. 150 (2)	F. 267 (4)
F. 159 (1)	F. 302 (1)

Interpretation: French and British use, 1750-1781, greater frequency after 1760.

Group II English Cream-Colored Earthenware

Type A Plain (ca. 1765-1780, England)

Figure 46 O-P, R-V  
2977 specimens

Vessel form frequency and measurements (measurements representative of all Group II types):

- Plates (654 sherds): rims (220-280 range, 260 most frequent, 27 specimens measured); bases (140-160 range, 150 most frequent, 15 specimens measured).
- Saucers (59 sherds): rims (140 most frequent, 7 specimens measured); bases (60-80 range, 12 specimens measured).
- Bowls (33 sherds): rims (120-180 range, 12 specimens measured); bases (50-80 range, 8 specimens measured).
- Cups (258 sherds): rims (80-160 range, 34 specimens measured); bases (40-60 range, 11 specimens measured).
- Bowl or saucer bases (708 sherds).
- Miscellaneous (1265 sherds).

Distribution:

- High frequency: SSW rowhouse unit; garden areas north and south of SSW rowhouse unit.
- Less frequent but present: SW rowhouse unit; Church area; garden areas north and south of NNW rowhouse unit; area north of SW rowhouse unit and within west stockade of F. 5.

Feature Associations:

F. 6 (1)	F. 118 (2)	F. 213 (1)	F. 263C (9)
F. 21 (11)	F. 120 (4)	F. 215 (11)	F. 265 (4)
F. 75 (1)	F. 129 (1)	F. 216 (1)	F. 267 (13)
F. 79 (1)	F. 142 (3)	F. 221 (3)	F. 281 (1)
F. 81 (4)	F. 146 (10)	F. 229 (30)	F. 296 (59)
F. 82 (7)	F. 151 (1)	F. 230 (1)	F. 297 (3)
F. 83 (2)	F. 159 (1)	F. 247 (1)	F. 299 (8)
F. 104 (1)	F. 209 (2)	F. 248 (1)	F. 315 (1)
F. 112 (1)	F. 210 (4)	F. 262 (2)	F. 321 (1)

Interpretation: British, 1765-1781, greater frequency after 1770.

Type B Relief Borders (ca. 1765-1780, England)

Figure 46 M-N, Q  
678 specimens

Vessel form frequency:

- Plates (365 sherds).
- Saucers (57 sherds).
- Bowls (12 sherds).
- Cups (178 sherds).
- Mugs (60 sherds).

Distribution and Feature Associations:

- Duplicate that of Type A.

Interpretation: British, 1765-1781, greater frequency after 1770.

Type C Polychrome (ca. 1765-1780, England)

84 specimens

Distribution and Feature Association:

- Duplicate that of Type A.

Interpretation: British, 1765-1781, greater frequency after 1770.

Type D Handles, Finials, Spouts (ca. 1765-1780, England)

44 specimens

Distribution and Feature Associations:

- Duplicate that of Type A.

Interpretation: British, 1765-1781, greater frequency after 1770.

Type E Transfer Printed (ca. 1765-1780, England)

20 specimens

Distribution and Feature Associations:

- Duplicate that of Type A.

Interpretations: British, 1765-1781, greater frequency after 1770.

Group III Coarse Earthenware

Type A Unglazed Redware (eighteenth century, probably North America)

9 specimens

Interpretation: none.

Type B Brown Glazed Redware (eighteenth century, England, France, or North America)

Figure 46 W-Y  
227 specimens

Vessel form measurements: rims (200, 2 specimens measured);  
bases (80-100 range, 3 specimens measured).

Distribution:

-High frequency: SSW rowhouse unit; garden areas north and south of SSW rowhouse unit.

-Less frequent but present: area between north wall of F. 5 and south wall of NNW rowhouse unit.

Feature Associations:

F. 14 (1)	F. 254 (1)
F. 16 (1)	F. 265 (1)
F. 54 (1)	F. 267 (4)
F. 109 (1)	F. 299 (1)
F. 117 (1)	F. 339 (1)
F. 132 (2)	

Interpretation: British, 1760-1781.

Type C Green and Purple Decorated Redware (eighteenth century, probably French)

4 specimens

Interpretation: none.

Type D Green Glazed Earthenware (eighteenth century, probably France or England, possibly North America)

Figure 46 Z-BB  
319 specimens



Vessel Measurements: rims (230-300 range, 260 most frequent, 8 specimens measured); bases (120 most frequent, 3 specimens measured).

Distribution: Type D coarse earthenware has been divided into light green (255 specimens), and dark green (64 specimens) on the basis of color.

Light green:

-High frequency: Priest's house and attached blacksmith's shop (164 specimens).

-Less frequent but present: center of SW rowhouse unit (12 specimens).

Dark green:

-High frequency: garden area between SW and SSW rowhouse units.

Feature Associations:

Light Green

F. 6 (1)  
F. 85 (1)  
F. 209 (7)  
F. 242 (2)

Dark Green

F. 21 (1)  
F. 66 (2)  
F. 117 (1)  
F. 242 (2)  
F. 352 (1)

Interpretations: Light green--French, 1740-1760; Dark green--French use suggested on the basis of feature associations.

Type E Brown and Green Glazed Earthenware (first half of the eighteenth century, probably France or French Canada)

33 specimens

Interpretation: none.

Type F Yellow Glazed Earthenware (first half of the eighteenth century, probably France or French Canada)

44 specimens

Interpretation: none.

Type G Carmel Glazed Earthenware (eighteenth century, probably England or France)

38 specimens

Feature Associations:

F. 81 (1)	F. 259B (1)
F. 215 (1)	F. 265 (1)
F. 238 (1)	

Interpretation: none.

Type H Slip-Decorated Earthenware (eighteenth century, England)

Figure 46 CC

101 specimens

Distribution:

-High frequency: SSW rowhouse unit; garden areas north and south of SSW rowhouse unit.

Feature Associations:

F. 90 (1)	F. 262 (1)
F. 231 (1)	F. 265 (1)
F. 259C(1)	F. 310 (1)

Interpretation: British, 1760-1781.

#### Group IV Fine Earthenware

Type A Whieldon Type (Brown and Green Splashed Glaze) (1755-1775, England)

9 specimens

Interpretation: British, 1760-1780.

Type B Whieldon Type (Tortoise Shell Glaze) (1755-1775, England)

69 specimens

Distribution:

-High frequency: SSW rowhouse unit; garden area south of SSW rowhouse unit.

-Less frequent but present: garden area north of SSW rowhouse unit; British soldiers' barracks (F. 3).

Feature Associations:

F. 21 (1)  
F. 129 (1)  
F. 267 (3)

Interpretation: British, 1760-1781.

Type C Whieldon-Wedgwood Type (Fruit and Vegetable Motifs)  
(ca. 1755-1775, England)

10 specimens

Interpretation: British, 1755-1775.

Type D (NEW TYPE) Jackfield, Black Glazed Red Earthenware, very glossy surface, relief floral decoration common. Manufactured at Jackfield, Shropshire, England, between 1760 and 1775 (Mankowitz and Haggard 1957: 117).

68 specimens

Distribution:

-High frequency: NNW rowhouse unit; garden areas north and south of the NNW rowhouse unit.

-Less frequent but present: SSW rowhouse unit.

Feature Associations:

F. 21 (1)  
F. 155 (1)  
F. 267 (1)

Interpretation: British, 1770-1781.

Class B Stoneware

Group I English White Saltglazed Stoneware

Type A Plain White (ca. 1740-1770, England)

Figure 47 A  
1796 specimens

Vessel form frequency (vessel form measurements are presented after the discussion of Type B):

- Plates (931 sherds, including 78 plain rims).
- Mugs (8 sherds).
- Cups (266 sherds).
- Bowls (78 sherds).
- Saucers (15 sherds).
- Cup or saucer (443 sherds).
- Miscellaneous bases and handles (29 sherds).
- Saucer or bowl bases (53 sherds).

Distribution:

- High frequency: British soldiers' barracks, F. 3 (especially in the south one-third of this unit); SSW rowhouse unit; garden areas north and south of the SSW rowhouse unit.
- Less frequent but present: NNW rowhouse unit; garden areas north and south of the NNW rowhouse unit; Church area; SW rowhouse unit.

Feature Associations:

F. 20 (1)	F. 83 (2)	F. 238 (1)	F. 267 (18)
F. 21 (18)	F. 85 (2)	F. 240 (1)	F. 275 (1)
F. 30 (2)	F. 118 (1)	F. 246 (1)	F. 293A (1)
F. 51 (2)	F. 139 (1)	F. 248 (3)	F. 296 (10)
F. 54 (2)	F. 140 (1)	F. 255 (1)	F. 298 (1)
F. 79 (2)	F. 141 (1)	F. 262 (3)	F. 299 (2)
F. 81 (3)	F. 215 (1)	F. 263C (7)	F. 352 (3)
F. 82 (3)	F. 230 (2)	F. 265 (6)	

Interpretations: English manufacture, used during both the late French period of occupation (1740-1760) and throughout the British period of control (1760-1781).

Type B Relief Decorated (ca. 1740-1770, England)

Figure 47 B-D

560 specimens (546 specimens are relief molded plate rims; 4 specimens are relief molded (pastoral design) teapot fragments).

Distribution:

- Duplicate that of Type A.

**Feature Associations:**

F. 21 (6)	F. 138 (1)	F. 263C (5)	F. 352 (2)
F. 81 (2)	F. 215 (1)	F. 265 (2)	
F. 82 (1)	F. 229 (3)	F. 267 (11)	
F. 83 (1)	F. 230 (1)	F. 296 (1)	
F. 118 (2)	F. 260A (2)	F. 310 (1)	
F. 135 (1)	F. 261 (1)	F. 314 (1)	
F. 136 (1)	F. 262 (1)	F. 321 (2)	

**Interpretation:** English manufacture, 1740-1781.

**Discussion: Class B, Group I, Type A and Type B (Measurements)**

- Plates: rims (220-300 range, 220-240 most frequent, 20 specimens measured); bases (120-180 range, 140-160 most frequent, 16 specimens measured).
- Cups: rims (80-140 range, 80-100 most frequent, 19 specimens measured); bases (30-60 range, 40 most frequent, 13 specimens measured).
- Bowls: rims (100-200 range, 120-140 most frequent, 13 specimens measured); bases (30 most frequent, 11 specimens measured).
- Saucers: rims (120 most frequent, 3 specimens measured).

**Type C Scratch Blue (ca. 1740-1770, England)**

**Figure 47 E-F**  
255 specimens

**Distribution:**

- High frequency: SSW rowhouse unit; garden areas north and south of SSW rowhouse unit; British soldiers' barracks (F. 3).
- Less frequent but present: garden areas north and south of NNW rowhouse unit; SW rowhouse unit.

**Feature Associations:**

F. 21 (1)	F. 241 (1)	F. 279 (1)
F. 118 (1)	F. 252 (1)	F. 296 (6)
F. 215 (2)	F. 262 (1)	F. 299 (2)
F. 216 (1)	F. 267 (3)	
F. 226 (1)	F. 275 (1)	

**Interpretation:** 1750-1775, British.

Type D Polychrome (ca. 1740-1770, England)

Figure 47 G

166 specimens

Distribution: Similar to other Class B, Group I types.

## Feature Associations:

F. 21 (1)	F. 281 (2)
F. 79 (2)	F. 290 (1)
F. 263C (1)	F. 296 (3)
F. 267 (3)	

Interpretation: English manufacture, 1740-1781.

Group II Stoneware MiscellaneousType A Rhenish Stoneware (eighteenth century, Germany)

Figure 47 H-I

86 specimens

## Vessel form measurements:

-Mugs: rims (ca. 60, 3 specimens measured); bases (ca. 60, 3 specimens measured).

## Distribution:

-High frequency: garden area north of SSW rowhouse unit.

-Less frequent but present: SSW rowhouse unit; area between NNW rowhouse unit and north stockade of F. 5; British soldiers' barracks; garden area south of SSW rowhouse unit.

## Feature Associations:

F. 21 (1)	F. 142 (1)
F. 72 (2)	F. 158 (2)
F. 130 (3)	F. 267 (2)

Interpretation: 1770-1780, German.

Type B Brown Stoneware (eighteenth century, probably England)

Figure 47 J-K

229 specimens (this total number of sherds probably represents no more than 10 vessels).

**Distribution:**

- High frequency: area immediately outside of the north wall of F. 3; center house of SW rowhouse unit.
- Less frequent but present: Church area; area immediately west of east wall of Church; area south of NW rowhouse unit.

**Feature Associations:**

F. 16 (1)	F. 144 (2)
F. 21 (1)	F. 156 (1)
F. 81 (1)	F. 241 (1)
F. 130 (5)	F. 339 (1)

**Interpretation:** Probably French, ca. 1730-1760. This conclusion is very indefinite.

**Type C** Red Stoneware (mid-eighteenth century, England)

17 specimens

**Interpretation:** British manufacture.

**Class C** Porcelain**Group I** Chinese Export Porcelain

**Type A** Blue and White (eighteenth century, China)

Figure 47 L-O  
3095 specimens

**Vessel form frequency** (measurements presented at the end of Group I discussion):

- Cups (181 sherds).
- Saucers (189 sherds).
- Bowls (163 sherds).
- Mugs (28 sherds).
- Miscellaneous (2534 sherds).

**Distribution:**

- High frequency: SSW rowhouse unit; garden areas north and south of the SSW rowhouse unit; Church area.
- Less frequent but present: British soldiers' barracks (F. 3).

**Feature Associations:**

F. 21 (2)	F. 142 (1)	F. 229 (3)	F. 267 (19)
F. 79 (1)	F. 146 (1)	F. 230 (2)	F. 276 (1)
F. 82 (1)	F. 148 (1)	F. 248 (2)	F. 296 (20)
F. 83 (1)	F. 154 (1)	F. 263 (1)	F. 297 (1)
F. 104 (1)	F. 156 (1)	F. 261 (1)	F. 299 (2)
F. 118 (1)	F. 213 (1)	F. 262 (4)	F. 314 (1)
F. 138 (1)	F. 215 (5)	F. 265 (1)	F. 352 (2)

**Interpretation:** 1750-1781 primary period of use at the site.

**Type B** Polychrome (eighteenth century, China)

**Figure 47 p**  
460 specimens

**Distribution:**

-High frequency: SSW rowhouse unit; garden areas north and south of SSW rowhouse unit.

**Feature Associations:**

F. 81 (1)	F. 262 (1)	F. 299 (1)	F. 310 (1)
F. 215 (1)	F. 263 (7)	F. 302 (1)	F. 339 (1)
F. 229 (1)	F. 267 (2)	F. 308 (1)	F. 352 (6)
F. 233 (2)	F. 297 (2)		
F. 248 (1)			

**Interpretation:** 1760-1781, primary period of use at the site, Chinese manufacture.

**Type B** Brown Glaze (eighteenth century, China)

46 specimens

**Distribution:**

-Duplicate that of Types A and B.

**Feature Associations:**

F. 93 (1)
F. 262 (1)
F. 282 (1)

**Interpretation:** 1760-1781 period of use, Chinese manufacture.



Discussion: Class C, Group I (Measurements)

- Cups: rims (80-140 range, 100-120 most frequent, 14 specimens measured); bases (30-60 range, 40-60 most frequent, 34 specimens measured).
- Saucers: rims (120-200 range, 140-160 most frequent, 22 specimens measured); bases (60-120 range, 80-100 most frequent, 66 specimens measured).
- Bowls: rims (140-200 range, 8 specimens measured); bases (70-100 range, 2 specimens measured).

Group II English Porcelain

Type A Liverpool (about 1770, England)

Type B Worcester (1765-1775, England)

Type C Blue and White (Miscellaneous) (1760-1780, England)

Figure 47 Q-R

83 specimens

## Distribution:

-High frequency: center unit of SSW rowhouse unit.

-Less frequent but present: garden areas north and south of NNW rowhouse unit; center area of F. 5 stockade.

## Feature Associations:

F. 121 (1)

F. 249 (1)

F. 267 (1)

Interpretation: 1760-1781, period of use at the site, British.

## Discussion:

The above description of ceramics distribution and feature associational evidence has permitted the dating of many ceramic types based on their site context. These new date determinations are more precise than those suggested by Miller and Stone on the basis of historical evidence alone. As such, the new dates reflect the period of

use of specific ceramic types at the site rather than their period of manufacture and use which is reflected by the Miller and Stone dates. The new dates suggested, however, have nearly always been within the date range originally determined by Miller and Stone. Data on the size range of specific ceramic type forms has been included to facilitate the comparison and identification of ceramic types found on other sites.

The type of evidence provided by ceramics analyses is particularly valuable for the purposes of this report; the dating of ceramics is more reliable than the majority of other artifact categories described; different ceramics types and forms are reliable and sensitive indicators of the different social adaptations and activities and demographic changes which characterized the site; these and other aspects of the interpretative potential of ceramics data are considered in the conclusions presented in Chapter 4.

Figure 46      Ceramics (1:.5)

Figure Designation		Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	CA, GI,	Ta Plate rim	2073
B		Plate rim	2926
C		Plate rim	1582
D		Bowl rim	2704
E		Bowl base	2536
F		Bowl base	310
G		Bowl (French)	2091
H		Bowl (French)	1797
I		Bowl base (French)	1906
J		Cup (French)	1556
K		Plate rim (French)	1120
L		Plate rim (French)	2472
M	CA, GII,	Tb Plate rim	3268
N		Plate rim	1438
O		Ta Bowl base	3310
P		Bowl	1
Q		Tb Bowl	2253
R		Ta Saucer	1038
S		Saucer	2704
T		Saucer	2253
U		Cup	3004
V		Cup	3307
W	CA, GIII, Tb	Plate rim	2084
X		Bowl	2719
Y		Mug	2891
Z	CA, GIII, Td	Large bowl	2851
AA		Large bowl	2080
BB		Large bowl	1188
CC	CA, GIII, Th	Mug	1

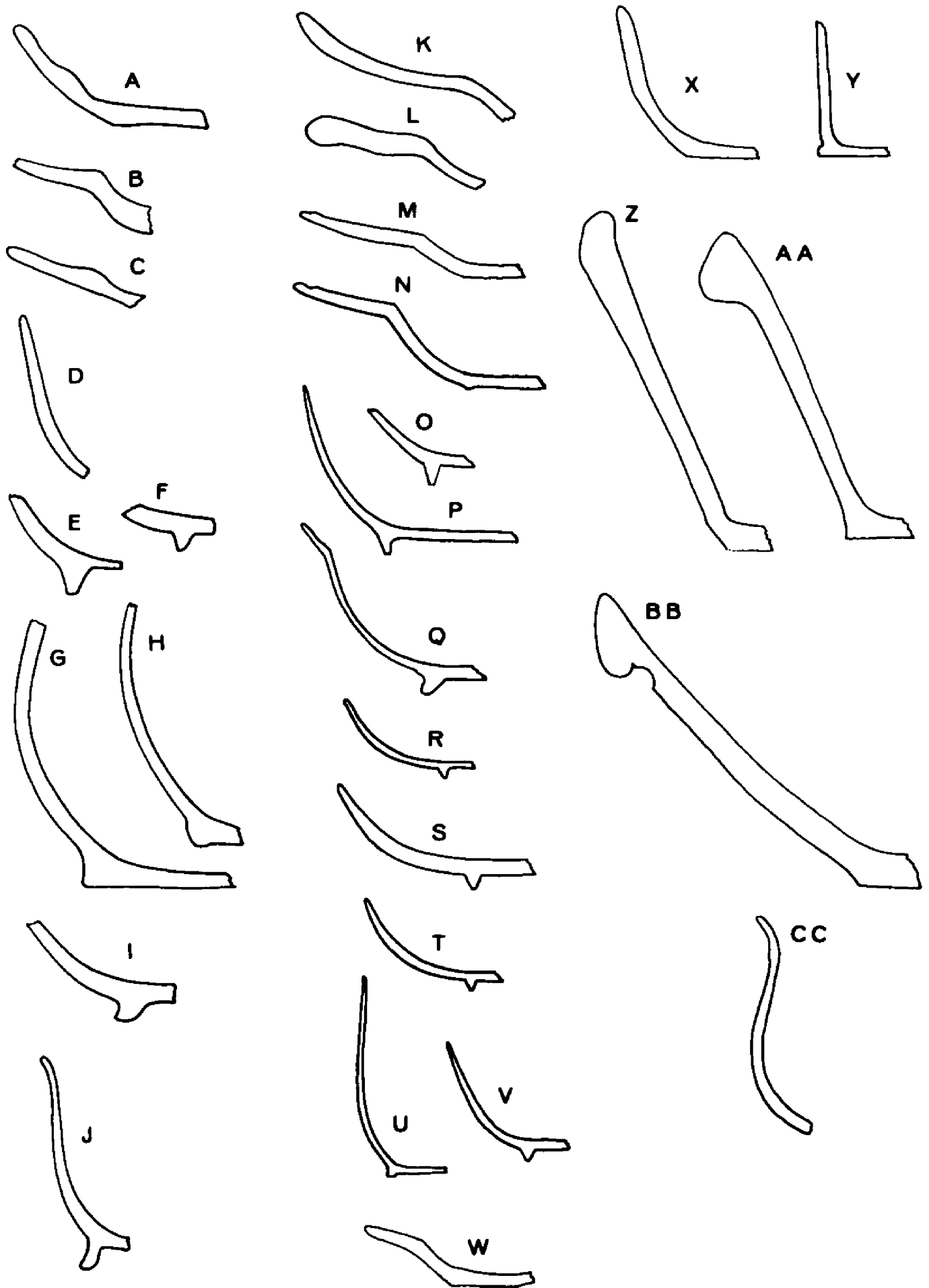
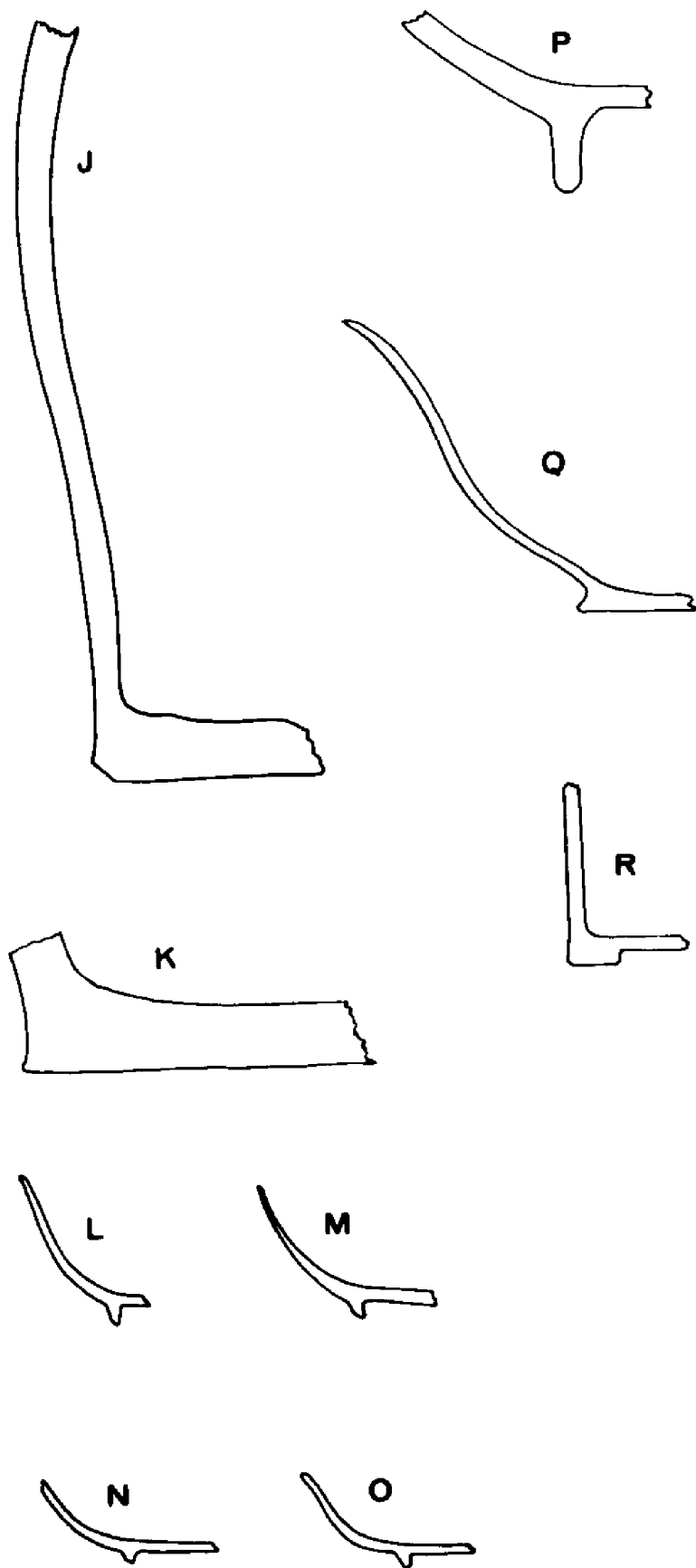
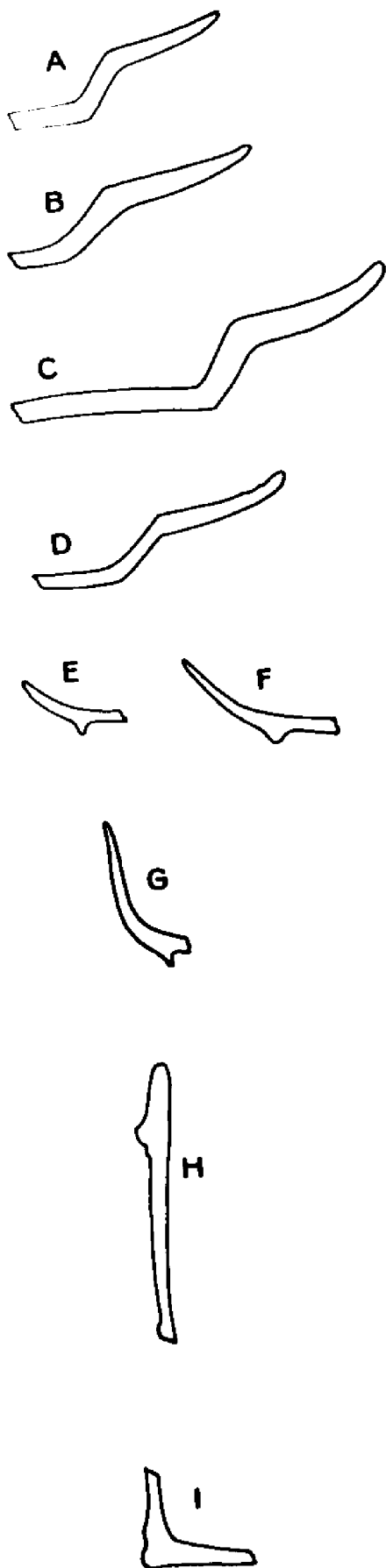


Figure 47      Ceramics (1:1.5)

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	CB, GI, Ta Plate rim	2345
B	Tb Plate rim	2294
C	Plate rim	2704
D	Plate rim	2137
E	Tc Cup	2460
F	Cup	2100
G	Td Cup rim	1
H	CB, GII, Ta Mug rim	1
I	Mug base	2834
J	Tb Storage Vessel	1038
K	Storage vessel	1
L	CC, GI, Ta Cup	354
M	Saucer	3297
N	Saucer	1
O	Saucer	3027
P	Tb Punch bowl	1697
Q	CC, GII Sauceboat	2851
R	Mug base	3208



## SPOONS

A total of 61 spoons and spoon fragments have been recovered at Fort Michilimackinac during the 1959 through 1966 excavations.

Spoons are classified by series, type, and variety. Series are distinguished by the different metal of manufacture: pewter, iron, brass, or silver. Since the majority of specimens are incomplete, the classification of pewter spoons (Series A) is divided into two parts: stems and bowls. Series A stem types are distinguished on the basis of stem shape; bowl types are distinguished on the basis of bowl shape. Varieties are distinguished by decoration and/or minor shape differences. Manufacturer's marks have been noted on several specimens and are presented as descriptive attributes. Table 41 summarizes spoon feature associations.

### Series A    Pewter (Stems)

#### Type 1    Offset stem end

SA, T1 stems exhibit a broad, offset area at the handle end of the stem. The stem tip is slightly up-curved on all specimens.

#### Variety a    Thin stem end.

Figure 48 A-B; Figure 50 A

7 fragmentary specimens, 1 complete specimen

Dimensions (5 specimens): maximum stem width, 22.9 average.

The single complete (restorable) specimen (Figure 48 B) is 194.6 mm in total length with a bowl width of 40.0 mm. The bowl bottom exhibits a rat-tail stem extension which extends nearly half the bowl length. This specimen is marked on the stem back with 3 identical, impressed symbols; each symbol consists of a crown over the letters IB or EB.

Variety b    Thick stem end, raised loop decoration on stem surface at tip.

Figure 48 C; Figure 50 B

1 specimen

Dimensions (1 specimen):    maximum stem width, 21.9.

Variety c    Thick, narrow, stem end.

Figure 48 D

2 specimens

Dimensions (2 specimens):    maximum stem width, 16.8, 16.8.

Variety d    Knobs on each side of stem at bowl end of stem offset; crest-like decoration on stem back.

Figure 48 E; Figure 50 C

1 specimen

Dimensions (1 specimen):    maximum stem width, 17.3.

Variety e    Small, narrow stem end.

Figure 48 F

1 specimen

Dimensions (1 specimen):    maximum stem width, 14.8.

Variety f    Plain stem surface; crest-like decoration on stem back.

Figure 48 G; Figure 50 D

1 specimen

Dimensions (1 specimen):    maximum stem width, 22.6.

Type 2    Tapered and rounded stem end

The ends on all SA, T2 stems are wide, rounded, and taper to a narrow shaft at the point of bowl junction.

Variety a    Decorated stem surface.

Figure 48 H; Figure 50 E

1 specimen

Dimensions (1 specimen):    maximum stem width, 21.2.

This specimen has an unidentifiable mark on the stem back and a raised floral-like design on the stem surface.



Variety b    Decorated stem surface.

Figure 48 I; Figure 50 F

1 specimen

Dimensions (1 specimen): maximum stem width, 21.2.

This specimen has a raised, floral-like design on the stem surface. An identical specimen is illustrated by Price (1908: 4) who assigns a 1700-1760 date to this spoon type.

Variety c    Thick stem; small, circular, impressed mark on stem surface at tip.

Figure 48 J; Figure 50 G

3 specimens

Dimensions (3 specimens): maximum stem width, 19.2, 22.5, 22.7.

The marks on SA, T2, Vc specimens are impressed circles which contain a raised design of 4, spaced crowns.

Variety d    Thin stem, circular impression at stem tip, decorated stem back.

Figure 48 K; Figure 50 H

1 specimen

Dimensions (1 specimen): maximum stem width, 20.8.

This specimen has an impressed circle segment at the stem tip. The back decoration consists of a crest-like symbol encircled by unidentifiable letters.

Variety e    Thin stem; central ridge on stem surface; raised letters on stem back.

Figure 48 L; Figure 50 I

1 specimen

Dimensions (1 specimen): maximum stem width, 20.4.

The back of this specimen bears the letters -ONDON, and RUE.

Variety f    Thick stem, undecorated.

Figure 48 M

3 specimens

Dimensions (3 specimens): maximum stem width, 22.8, 22.1, 20.4.

Variety g Thin, narrow stem; marked stem back.

Figure 48 N

1 specimen

Dimensions (1 specimen): maximum stem width, 11.3.

The letter X is impressed into the back of this specimen.

Variety h Thick stem with central ridge.

Figure 48 O

1 specimen

Dimensions (1 specimen): maximum stem width, 20.4.

This specimen has a sharply up-curved stem tip and a central ridge on the stem surface which extends from the stem tip to the point of minimum shaft diameter. Similar specimens are illustrated by Price (1908: 84-85). Noel Hume describes a similar specimen from Rosewell, Virginia (1962: 197-198), to which he assigns a date in the mid-eighteenth century.

#### Series A, Category 1, Miscellaneous Stems

Fifteen stem fragments which could not be assigned to specific SA types are included in this category. One specimen bears a mark on the back side consisting of the letters LONDON (Figure 50 J).

#### Series A Pewter (Bowls)

Type 1 Large, oblong bowl with rat-tail stem extension on bowl bottom.

Figure 49 A

4 specimens

Dimensions (4 specimens): bowl width, 44.2, 42.0, 42.3, 42.1.

This type of bowl was probably common to both SA stem types. Noel Hume (1962: 197-198) describes a similar specimen from Rosewell, Virginia, to which he assigns a date in the mid-eighteenth century.

Type 2 Round bowl

Figure 49 B

1 specimen

Dimensions (1 specimen): bowl width, greater than 39.0.

Type 3 Small, oblong bowl; rat-tail stem extension absent

Figure 49 D

2 specimens

Dimensions (2 specimens): bowl width, 23.1, 20.8.

Series A, Category, Miscellaneous Bowls

This category consists of 3 fragmentary specimens which could not be assigned to specific SA bowl types.

Series B    Iron

Only 1 iron spoon was recovered (Figure 49 C). This specimen has a diamond-shaped stem end which tapers from a maximum width of 20.1 mm to a minimum width of 5.4 mm at stem-bowl junction. A slight rat-tail stem extension is noted on the bowl bottom. The stem is 111.2 mm long; the bowl is 63.1 mm long and 39.3 mm wide.

Series C    BrassType 1    Small stem and bowl fragments

Figure 49 E-F

6 specimens

Dimensions (2 stems):    maximum stem width, 12.3, 8.9.

Dimensions (2 bowls):    maximum bowl width, 20.3, 21.3.

One stem specimen has an unidentifiable mark on the back consisting of 3, rectangular impressions.

Type 2    Large, stem fragments

Figure 49 G

2 specimens

Dimensions (2 specimens):    maximum stem width, 20.8, 20.8.

These specimens could be either fork or spoon stem ends.

Series D    Silver

Figure 49 H; Figure 50 K

1 specimen

Dimensions (1 specimen):    stem length, 72.0; bowl length, 34.7; maximum stem width, 11.2.

This specimen bears 2 impressed marks on the stem back; the first represents a seated woman and the second a crown and harp. The stem has a rounded end and a central ridge.

## Discussion:

A total of 12 spoon fragments were recovered from 10 different feature contexts (Table 41 ). Three features are primarily of British affiliation, although two (F. 88 and F. 118) are associated with French

structures. All spoon specimens were combined on a single distribution map for interpretative purposes. This map indicates that spoons were associated most frequently with the SSW rowhouse unit. Spoons were also recovered from the SW rowhouse and from the guardhouse (F. 60).

Both types of evidence indicate that spoons were in use primarily during the British period of control; the "LONDON" marks on several Series A specimens support this conclusion.

Figure 48    Spoons

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	SA, T1, Va	1035
B	Va	2982
C	Vb	2729
D	Vc	715
E	Vd	2566
F	Ve	2152
G	Vf	2537
H	SA, T2, Va	1347
I	Vb	2292
J	Vc	268
K	Vd	2070
L	Ve	2297
M	Vf	2249
N	Vg	1222
O	Vh	1

466

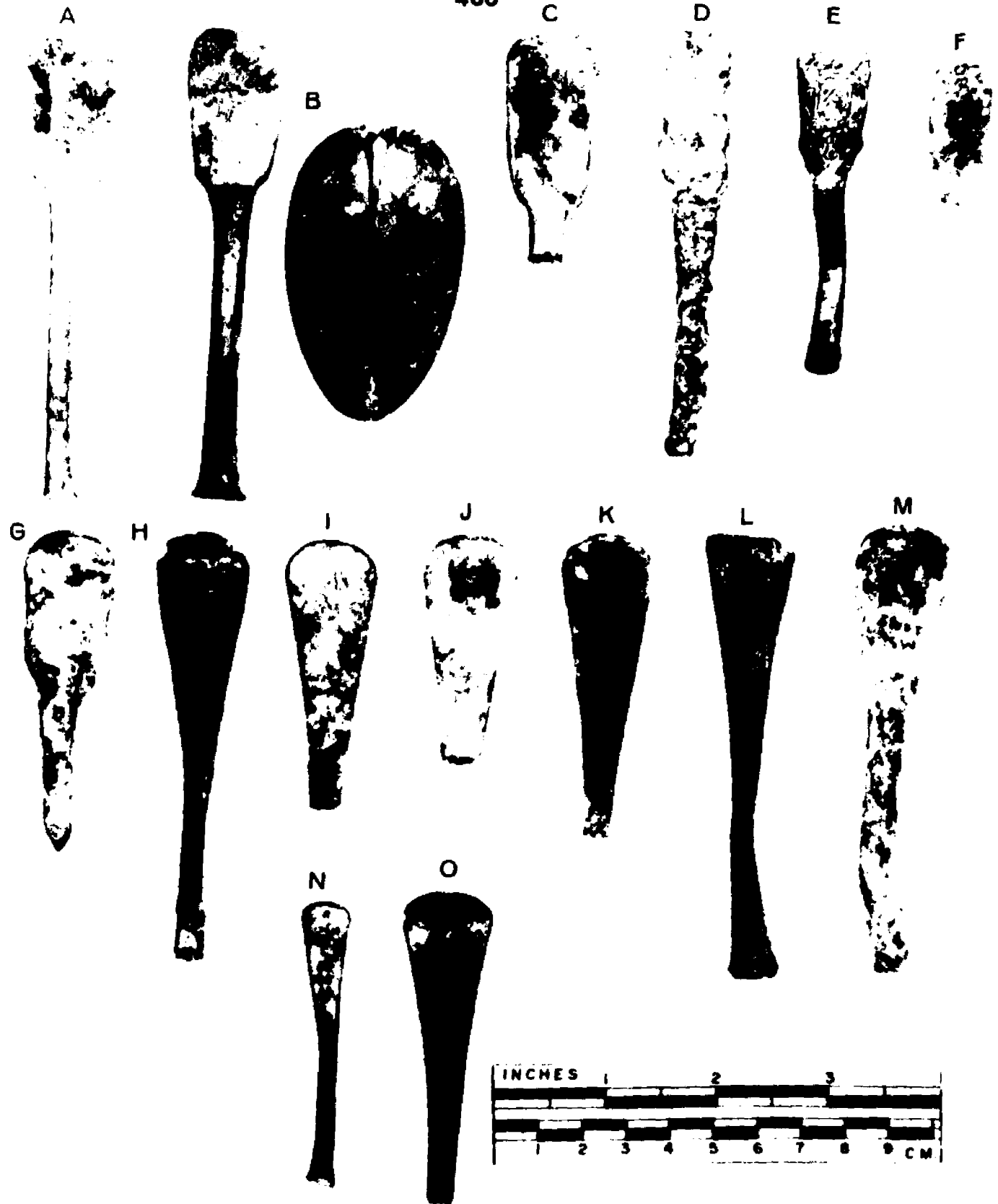


Figure 49      Spoons

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	SA, T1	2857
B	T2	2596
D	T3	1
C	SB, T1	2331
E	SC, T1	773
F	T1	2430
G	T2	2468
H	SD, T1	2890

468

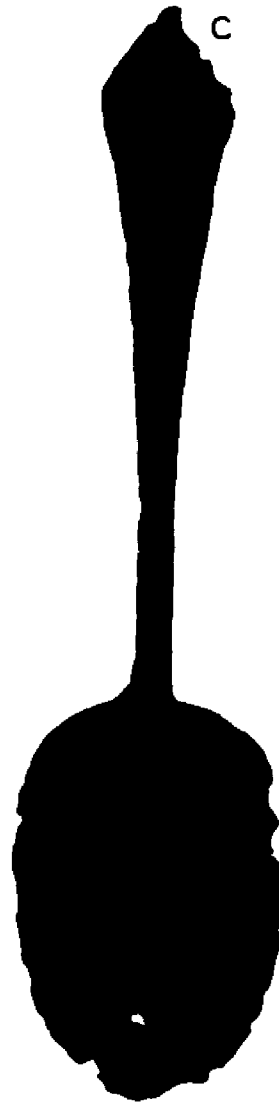
A



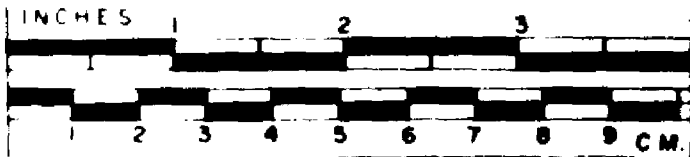
B



C



D



E



F



G



H



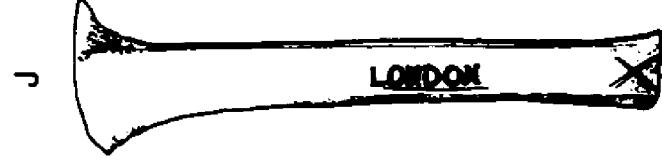
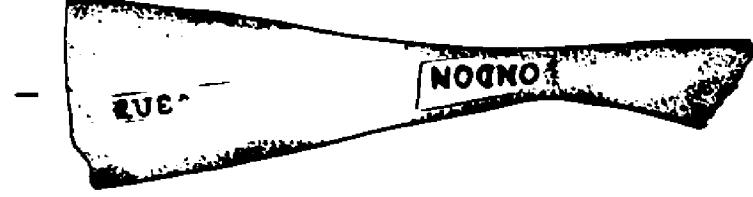
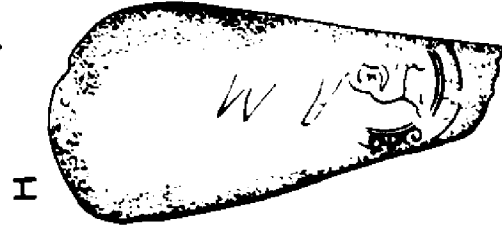
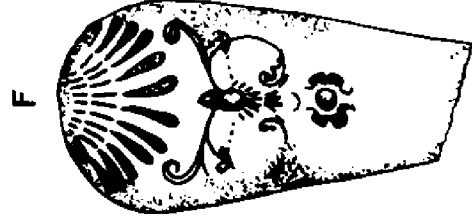
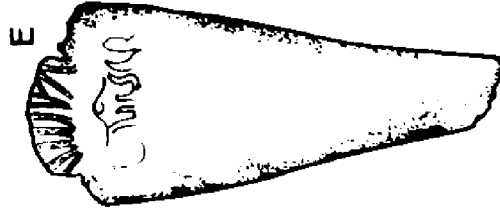
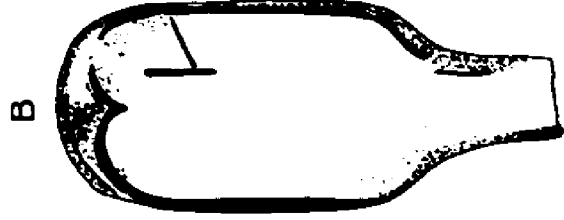
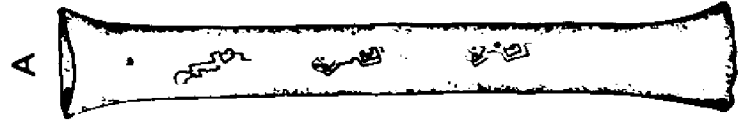


TABLE 41 Spoon Feature Associations

Taxonomic Designation	Frequency	Feature Number
SA, T1, Vc	2	118
Vc	1	88
Vc	1	81
Vc	1	21
SA, Cat. 1	1	118
SA, Cat. 1, stem	1	263c
SA, Cat. 1, stem	1	83
SA, T2, bowls	1	267
T3, bowls	1	296
SC, T1	1	265
SD, T1	1	299

Figure 50      Spoons (Actual Size)

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	SA, T1, Va	2982
B	Vb	1
C	Vd	2566
D	Vf	2537
E	SA, T2, Va	1347
F	Vb	2292
G	Vc	268
H	SA, T2, Vd	2070
I	Ve	2277
J	SA, Cat. 1	2534
K	SD, T1, Va	2890



## FORKS

The 34 forks and fork fragments recovered at Fort Michilimackinac are divided into two classes on the basis of form: Class I forks have separate handle elements; and Class II forks have handles which are an extension of, or integral part of, the fork shaft. Class I series are based on means of handle attachment. Class I types are based on shaft shape. The shaft of a Class I fork is the area between the bolster and the prongs or tines. The bolster is a raised area between the shaft and the handle stem. Class II series are based on the number of tines. Class II types are based on metal of manufacture. Measurements, feature associations, and comparative evidence are presented in the text descriptions.

### Class I    Handle Added

All CI specimens are composed of two elements: the iron part of the fork which consists of a stem, shaft, and tines; and bone handle elements or plates which are attached to the fork stem. All CI specimens have 2 tines.

#### Series A    Riveted Handle Attachment

The stem on CI, SA specimens consists of a thin, rectangular extension of the fork shaft. Bone handle plates are attached to each side of the stem with iron pins. All CI, SA specimens have a bolster against which the handle plates are placed.

#### Type 1    Concave shaft

Figure 51 A-D

8 specimens

Dimensions (5 specimens): tine length, 44.3, 58.9, 58.0, 45.9, 48.0E.

CI, SA, T1 forks have a slightly concave shaft. Four of the 8 specimens have bone, handle plates. Two of these are of the "pistol grip" style (Barka 1965: 270) which may be recognized by the presence of handle plates which are offset at the handle end (Figure 51 A). The other 2 specimens have straight

handle plates which are capped by iron plates on the handle end. Similar specimens have been reported from Jamestown, Virginia (Cotter 1958: 189), and Portland Point, New Brunswick (Barka 1965: 270-272). Two CI, SA, T1 specimens were recovered from a basement in the SSW rowhouse unit (F. 267).

Type 2 Convex shaft

Figure 51 E-F

4 specimens

Dimensions (3 specimens): tine length, 58.5, 59.2, 65.0.

Three CI, SA, T2 forks retain bone handle plates and iron plates on the handle end. CI, SA, T2 forks have been reported from Fort Atkinson, Nebraska (Kivett 1959: 63-64), and Marlborough, Virginia (Watkins 1968: 159). One CI, SA, T2 specimen was recovered from F. 229.

Series B "Rat-Tail" Handle Attachment

CI, SB forks have stems which are rectangular in cross section. The stems are centered and are an extension of the fork shaft. The rat-tail stem is inserted into a solid-bone handle which had been drilled to receive the stem.

Type 1 Concave shaft

Figure 51 G, I

3 specimens

Dimensions (2 specimens): tine length, 56.0, 64.0.

One CI, SB, T1 specimen was found in F. 85.

Type 2 Convex shaft

Figure 51 H

3 specimens

Dimensions (2 specimens): tine length, 58.2, 55.0E.

One CI, SB, T2 specimen was found in F. 299.

Discussion: Class I, Series B

CI, SB forks have been recovered at Rosewell, Virginia (Noel Hume 1962: 197), Posey, Oklahoma (Wyckoff and Barr 1968: 38), and Portland Point, New Brunswick (Barka 1965: 270-272).

## Class II    Handle, Extension and Integral Part of Shaft

CII forks consist of tines and a handle.

### Series A    Four Tines

#### Type 1    Iron

Figure 52    A-C

12 specimens

Dimensions (3 specimens):    total fork length, 185.2, 186.1, 190.8.

CII, SA, T1 forks exhibit an expanded, round-to-oval shaft end.    F. 304 and F. 16 both produced 1 CII, SA, T1 fork.

#### Type 2    Pewter

Figure 52    D-F

3 specimens

Dimensions (1 specimen):    tine length, 44.8E.

One CII, SA, T2 specimen was found in F. 80.

### Series B    Three Tines

#### Type 1    Iron

Figure 52    G

1 specimen

Dimensions (1 specimen):    tine length, 44.1.

One CII, SB, T1 specimen was found in F. 118.    This specimen has a rectangular handle shaft.

## Discussion:

Distributional differences could not be detected between Class I and Class II forks.    The combined sample (34 specimens) is not large enough to yield evidence of areal clustering.    Specimens were found within the SSW rowhouse unit, in the garden area north and south of the SSW rowhouse unit, in the area of the northwest corner of the earliest French stockade (F. 5) and in the NNW rowhouse.    Feature associations

confirm this pattern of distribution. This evidence indicates that forks were in greater use during the British period of control.

Two-tine forks (Class I) appear to have little utility for dating purposes, since they have been found on other sites during the seventeenth, eighteenth, and early nineteenth centuries.

Figure 52      Forks

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	CI, SA, T1	1399
B	T1	1159
C	T1	884
D	T1	2553
E	T2	1
F	T2	2499
G	SB, T1	740
H	T2	1106
I	T1	2536



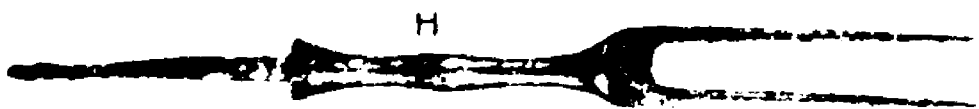
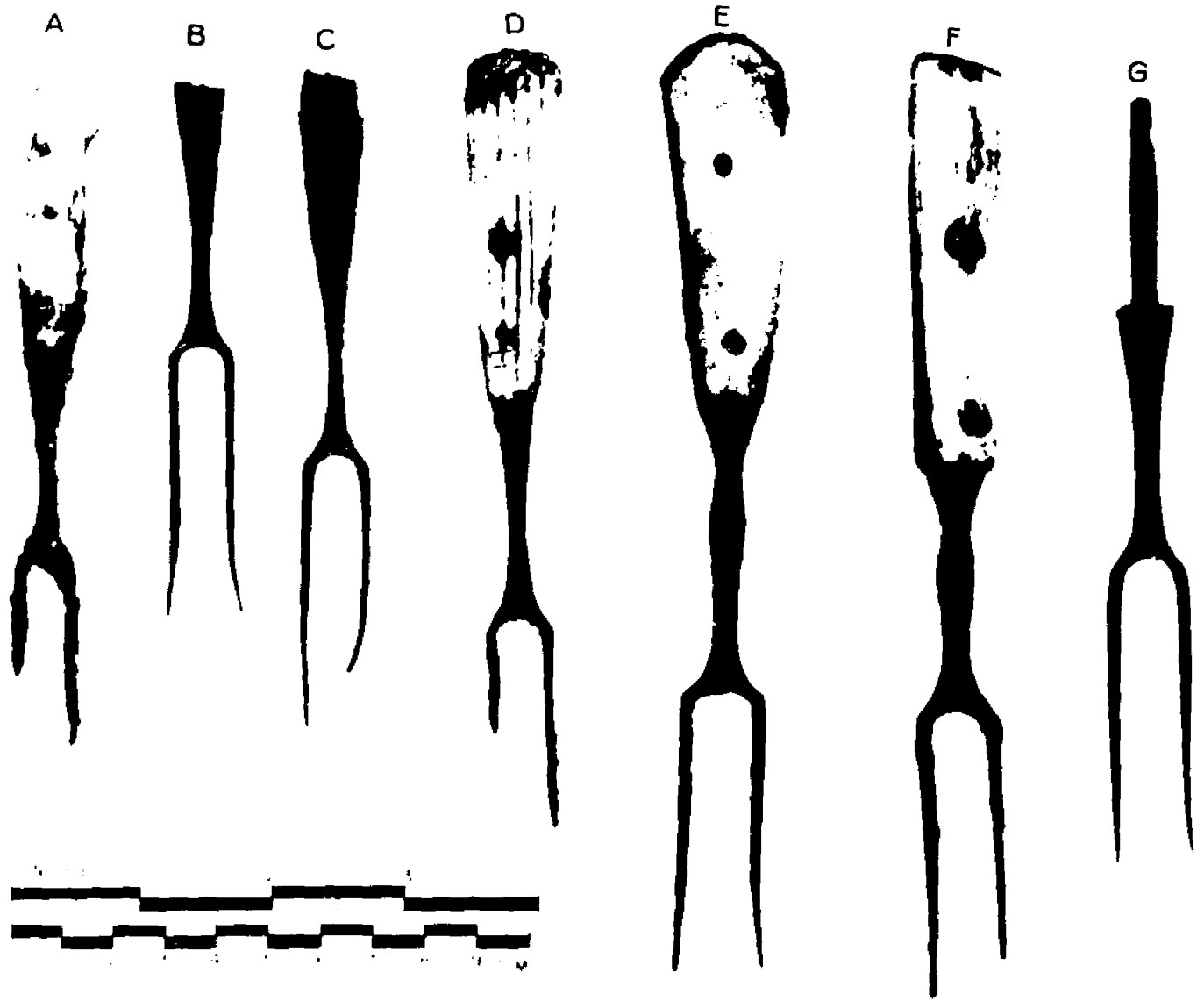
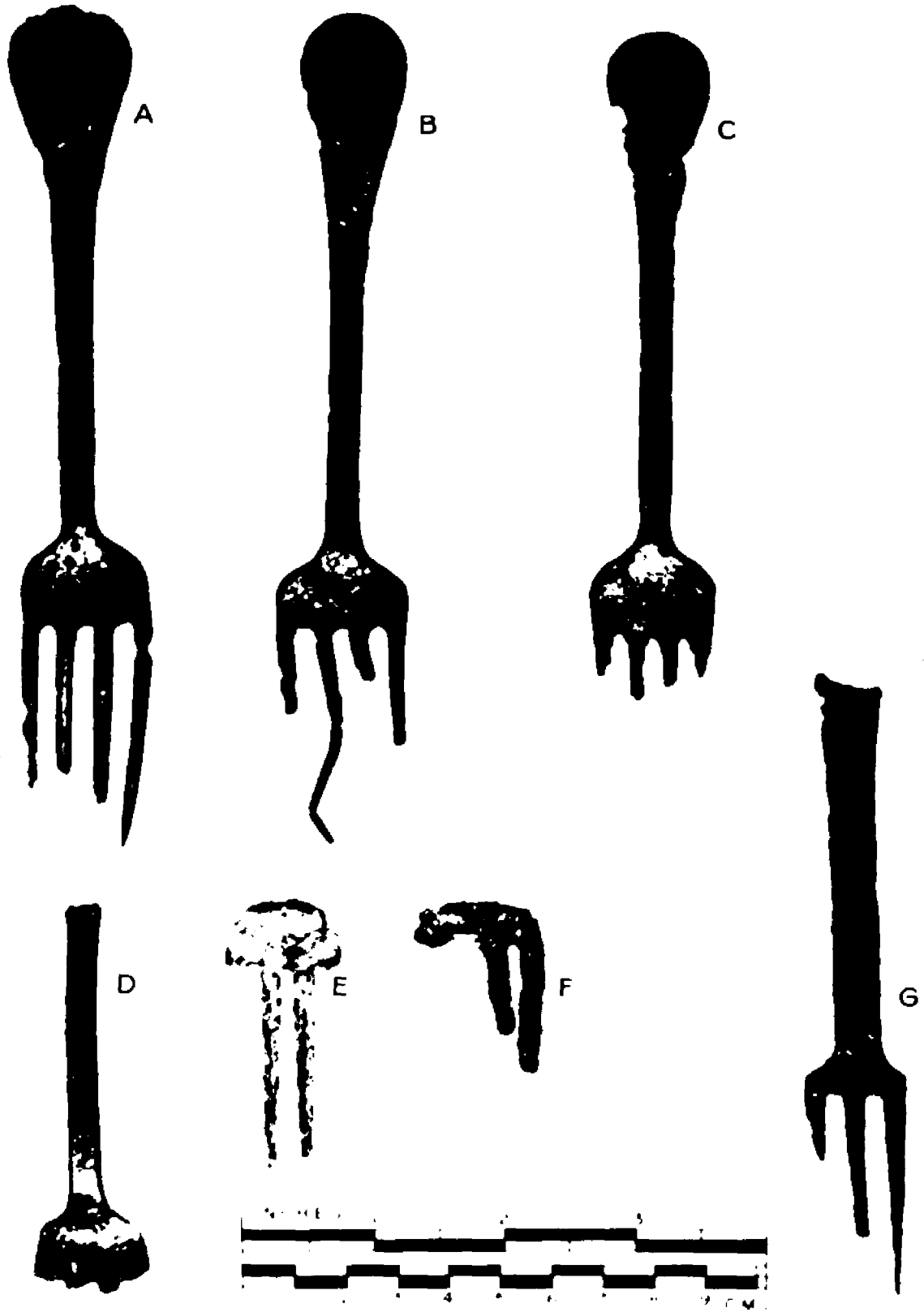


Figure 51      Forks

Figure Designation	Taxonomic Designation	Catalog <sup>2</sup> Number, MS
A	CII, SA, T1	1007
B	T1	1469
C	T1	1562
D	T2	1031
E	T2	1026
F	T2	1398
G	SB, T1	821



## BRICKS

The excavations at Fort Michilimackinac produced 246 brick fragments. All specimens appear to have been locally manufactured by a "place" process (Harrington 1950: 30). This process consists of filling a rectangular wooden mold with clay, scraping or "striking" off the excess surface clay, and then inverting the mold to remove the brick for drying.

### Classification and Description:

Complete bricks were not recovered at the site; a number of specimens could be measured for thickness and width dimensions. Thirteen specimens were measurable on both dimensions; 10 width and 15 thickness dimensions were measurable on individual fragments. The total of 23 width dimensions averaged 108.4 mm (also ca. 4-1/4 inches or 48 French Ligne), with a standard deviation of 2.20 mm. This is a highly consistent dimension and nearly all specimens measured between 4-1/8 inches and 4-1/2 inches. Thickness is less consistent; the average of 28 specimens was 72.0 mm., with a standard deviation of 5.35 mm. Several very small brick fragments contributed to the high figure of standard deviation. A more realistic thickness average of between 74.0 and 78.0 mm (ca. 3 inches or 32-34 French Ligne) is noted if these fragments are omitted from the measured sample, although the thickness standard deviation is still significantly higher than that computed for width.

The majority of brick fragments were either reddish-buff or tan; the colors of very few specimens represented intermediate shades

of reddish-tan. Color cannot be correlated with distribution at the site or with feature associations.

Nearly all bricks have a smoothed ("struck") top surface with longitudinal striations which result from striking or scraping off excess clay (Figure 53 A). The top surface edges are often rounded and are raised above the side and top surfaces. The end corners on several specimens are obliquely flattened. This may have resulted from inverting the mold to remove a brick before it had hardened. The bottom surfaces are generally coarse and irregular and have a thin layer of fine sand. With the exception of the top, this fine sand layer is characteristic of all surfaces and was added to the mold prior to the clay to facilitate removal of the dried brick. Harrington (1950: 31) gives a discussion of this process. The edge surfaces are generally flat and smooth. The clay is very coarse textured, and there are large gravel and pebble inclusions.

One fragment (Figure 53 B) represents a different type of brick. This specimen is very smooth on all surfaces, has a fine-grained texture, and is light buff in color. This fragment has been cut or molded to produce an angular face.

#### Associational Evidence:

A number of brick fragments were associated with structural features as follows: F. 77, "brickkiln" (28); F. 83, basement in the NNW rowhouse unit (8); F. 79, basement in the NNW rowhouse unit (14); F. 310, basement of unknown association in 260 L110 (1); F. 213,

basement in the SW rowhouse unit (3). These associations indicate that bricks were used during both the French and British periods of control. Other bricks have a random distribution south of the 220 grid line. The absence of bricks in British military structures is notable. Feature 77 has been interpreted as a "brickkiln" (Binford 61: 27-30). This view may be questioned and is discussed in greater detail in Appendix A.

#### Comparative Evidence:

Several sources discuss the processes of brick manufacture as well as the frequency and sizes of bricks found in North American sites; these include: Harrington (1967: 1-17) and (1950: 16-39); Lazarus (1965: 69-84); South (1964: 67-74); and Chase (1968: 33-49). Both Harrington (1967: 11) and South (1965: 67, 73) note that brick size is an unreliable chronological indicator, because of non-temporal variation in brick dimensions produced during manufacture. Fort Michilimackinac bricks (ca. 3 inches thick by 4-1/4 inches wide) correspond closely in width to bricks from both eighteenth-century British colonial (South 1965: 73) and late eighteenth-century and early nineteenth-century American sites (Lazarus 1965: 75). The thickness dimension is unusually large when compared to bricks from other sites.

#### Interpretations:

Brick fragments at Fort Michilimackinac were associated with features from both the French and British periods; however, they did not occur throughout the full period of site occupation. A tentative

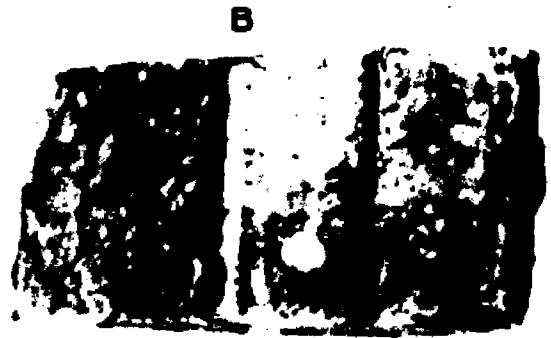
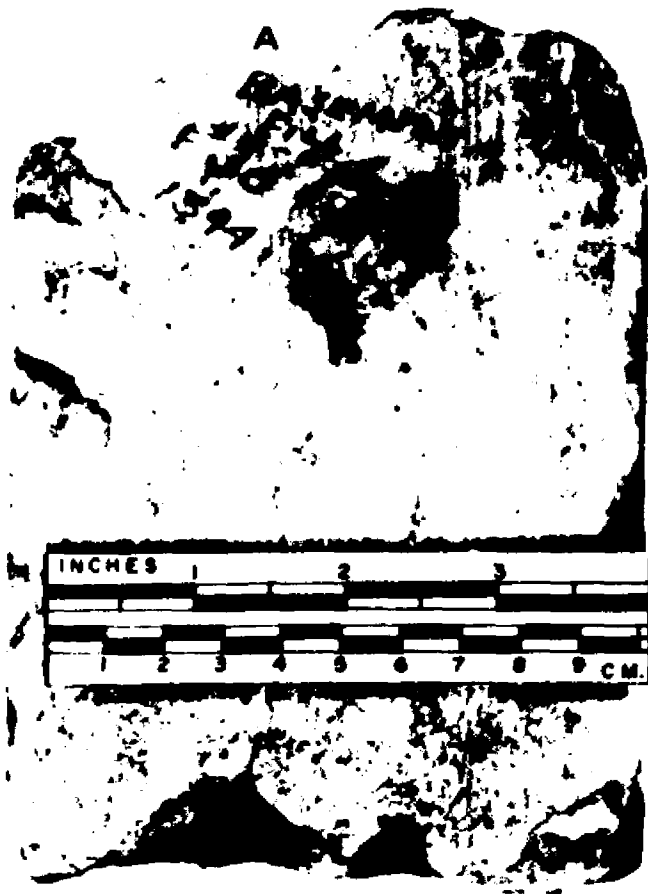
date range of between 1735 and 1765 is suggested for the use of bricks. This estimate is based both on associations with specific structures and artifacts.

Bricks were not a common building material at Fort Michilimackinac and may have served a specialized purpose which has not been determined. This is suggested by the low frequency of occurrence as well as by the unusually large thickness dimension.

**Figure 53     Bricks**

<b>Figure Designation</b>	<b>Catalog Number, MS<sup>2</sup></b>
<b>A</b>	<b>1520</b>
<b>B</b>	<b>1344</b>
<b>C</b>	<b>2973</b>
<b>D</b>	<b>1344</b>





## PINTLES

### Classification and Description:

Pintles are iron objects used for door hardware; in combination with iron hinges, they are used to mount a movable door, gate, or shutter to a solid support, such as a door jamb or gate post. Pintles are fastened to or driven into the solid support; the hinge is attached to the movable object. All pintles have a round, vertical pin (hinge bar) over which the looped end of a hinge is placed, and a horizontal shaft for attachment to a solid support. The Fort Michilimackinac door hardware sample includes 93 pintles and 102 hinges which were used with pintles. Only pintles are formally described in this section; hinges are briefly described in Part 2 of this appendix.

Three levels of taxonomic distinction are used in the description of pintles: the series, type, and variety. Series are distinguished by differences in the means of attaching pintle to support. Types are based on pintle shape and the number of separate elements present. Varieties are based on minor shape differences. The term "hinge pin" refers to the round, vertical shaft upon which a hinge is mounted. The pintle "shank" is the horizontal shaft which is secured to a solid support. The hinge rotates on the hinge pin, and the shank supports the hinge as well as the suspended door, gate, or shutter.

Site distribution, feature associations, and comparative evidence are presented in the concluding statements. Feature associations are also summarized in Table 42 . Pintle measurements are presented in the text descriptions.

Series A Secured By Nails or ScrewsType 1 Flared shank

Figure 54 A-B

12 specimens

Dimensions (8 specimens): total pintle length range, 46.8-101.8, most frequent lengths, 90-100; maximum shank width, 41.2-80.1, most frequent width, 55-65; hinge-pin length, 17.0-38.7, most frequent hinge-pin lengths, 32-38.

SA, T1 pintles have flared shanks; the maximum width is at the end opposite the hinge pin. The hinge pin on all specimens is slightly offset from the plane of the shank due to a shank curvature in the area of shank and hinge-pin junction. Eleven specimens have 3 holes on the shank for nail or screw attachment; 1 is in the area of minimum shank width, and 2 are on the opposite end. Two specimens are very small and may have been pintles for household furnishings or window shutters.

Series B Secured By Driving or Imbedding Shank Into WoodType 1 Shank and hinge pin are separate elements

All SB, T1 specimens consist of a hinge pin around which a shank has been wrapped and forged. SB, T1 varieties are distinguished by differences in shank shape.

Variety a Rectangular non-tapered shank.

Figure 54 C-D

7 specimens

Dimensions (6 specimens): pintle length, 46.1-71.2; shank width, 14.9-24.2; pin length, 27.8-47.6.

Two Va specimens have split shanks (Figure 54 C); these apparently expanded when driven into wood.

Variety b Rectangular shank, notched and tapered.

Figure 54 E-G

21 specimens

Dimensions (16 specimens): pin length (13), 22.4-67.9; pin diameter (16), 7.5 average; shank length (11), 71.3 average, 59.2-94.2 range; shank width (16), 10.9-22.5.

The shanks on SB, T1, Vb specimens are notched on the bottom toward the hinge-pin end and taper from this notch to the shank end.

Variety c Rectangular, tapered shank.

Figure 54 H-I

2 specimens

Dimensions (2 specimens): pin length, 53.2, 12.2; total pintle length, 155.0, 69.6; maximum shank width, 23.3, 11.6.

The angle of the shank bottom on SB, T1, Vc pintles is perpendicular to the hinge pin. The top edge of the shank tapers from a maximum width at hinge-pin junction to the shank end.

Type 2 Shank and hinge pin are single element

Figure 54 J-N

51 specimens

Dimensions (51 specimens): maximum shank thickness (50), 4.3-15.3, average, 9.5; pin diameter (51), 5.2-15.3, average, 10.9; maximum shank width (51), 7.3-17.4, average, 11.9; pin length (36, measured from shank bottom to hinge-pin end), 21.5-61.5, average, 43.8; total pintle length (36), 65.1-134.3, average, 100.0.

SB, T2 pintles are made of a single piece of iron and consist of a round hinge pin and a rectangular, tapered shank. The shank bottom is generally perpendicular to the hinge pin; the top edge of the shank tapers from a point of maximum width at hinge-pin junction to the shank end. Both sides of the pintle heel (area at the hinge and pin-shank bottom junction) are commonly pinched or notched. One specimen (Figure 54 K) has an obtuse hinge and pin-shank angle.

#### Distribution:

The small sample of Series A pintles were found in both French and British feature contexts (Table 42 ). SB, T1 pintles were found most frequently in the Church and Priest's house area and in the garden area north of the SSW rowhouse unit. The presence of SB, T1 pintles at or near the walls of all four rowhouse units may indicate the location of windows, or possibly doors, in the case of several large specimens. Series B, Type 2 pintles were found most frequently in the Church and Priest's house area and in the garden area north of the SSW rowhouse unit. All pintle types were rare in structures, except for those found in the Church and Priest's house area.

### Comparative Evidence:

Both SB, T1 and SB, T2 pintles have been recovered from the Fortress of Louisbourg, Nova Scotia (Sutermeister 1968). Watkins (1968: 165) reports the recovery of two, SB, T2 pintles from Marlborough, Virginia. Pintles have also been reported from several other sites (Woodward 1969; Cotter 1957) but are of little value in dating the Fort Michilimackinac specimens.

### Interpretations:

The Church and Priest's house area produced 16 pintles. A blacksmith's shop was located in the southeast corner of the Priest's house during the French period of control; this indicates that pintles were produced locally during that period.

The majority of pintles recovered were associated with French period features or with structures that housed British soldiers but which were constructed during the latter part of the French period. Pintles were not associated with either the Commanding Officer's house or with the British soldiers' barracks (F. 3). It is known that the British barracks and other buildings were removed to Mackinac Island in 1780-1781.

Figure 54     Pintles

Figure Designation	Taxonomic Designation	Catalog Number, MS
A	SA, T1	933
B	T1	1
C	SB, T1, Va	2493
D	Va	2519
E	Vb	2282
F	Vb	733
G	Vb	2303
H	Vc	1
I	Vc	2399
J	T2	2433
K	T2	925
L	T2	1556
M	T2	3242
N	T2	348

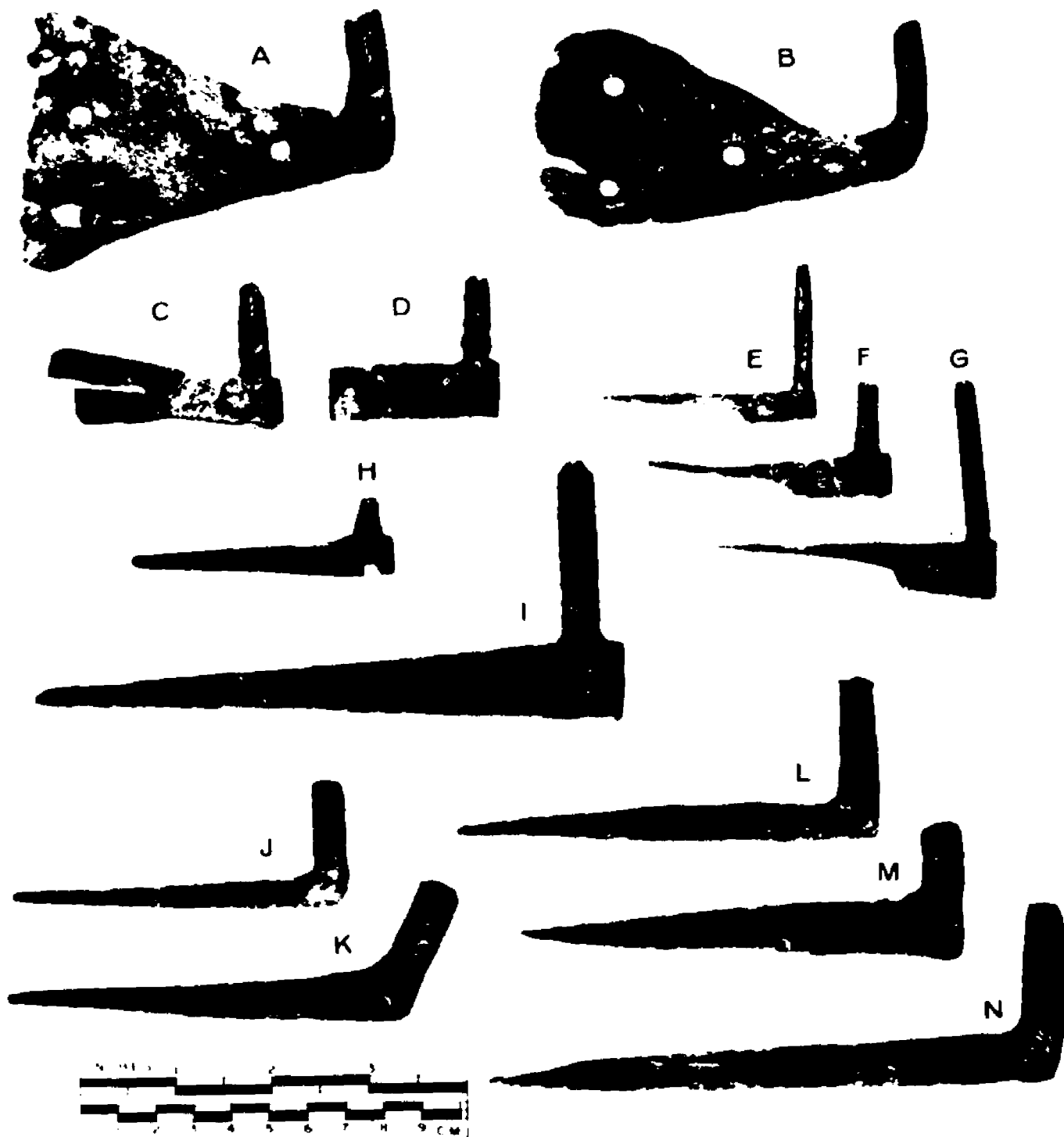


TABLE 42 Pintle Feature Associations

Taxonomic Designation	Frequency	Feature Number
SA, T1	2	118
T1	1	262
T1	1	85
SB, T1, Vb	2	83
T2	1	88
T2	1	348
T2	1	141
T2	1	310
T2	1	255
T2	1	262
T2	1	80
T2	1	90



## KNIVES

A total of 512 knives and knife fragments were recovered at Fort Michilimackinac during the 1959 through 1966 excavations; this total is divided into 70 formal categories.

### Classification and Description:

The description of knives is based on the recognition of the following attributes: (1) presence or absence and shape of hinge element; (2) size of knife elements (dimensions or elements measured vary with the type of knife); (3) blade and handle shape; and (4) articulation of blade and handle elements. The terminology applied to knife descriptions is somewhat standard in the literature (refer to Hagerty 1963: 95-96; Peterson 1958: 1-5). The following terms are used in this report: handle, blade, edge (the blade cutting edge), back (the blade edge opposite the cutting edge), heel (the curved blade end at blade-bolster junction on case knives or the same area at the hinge end on clasp knife blades), bolster (a raised or offset area between blade and handle on case knives), bolster lining (metal plates between handle plates and spring on clasp knives), and tang (the hinge end on clasp knife blades).

The procedures of formal classification applied to other artifact categories have been altered somewhat in the case of knives. Since many of the specimens are represented by only handle or blade elements (or fragments of these elements), it has been necessary to divide the formal classification into two parts which are based on the knife elements present. The knife classification is formally structured as follows: two classes are distinguished on the basis of form which

refers to the presence or absence of a hinge between the blade and handle. This distinction divides the Fort Michilimackinac knife sample into two classes: Class I (clasp knives) and Class II (case knives). A non-formal distinction termed the "Group" has been applied to distinguish Class I knives as either blades (Group 1) or handles (Group 2). Group 1 is then formally subdivided into type and variety. Group 1 types are distinguished by the form of blade-hinge element. Group 1 varieties are distinguished by differences in blade shape. It has not been possible to apply similar distinctions to Group 2 specimens since blades are either missing or are present but are clasped within the knife handle. Group 2 specimens are formally divided into series and type. Group 2 series are distinguished on the basis of handle form. Group 2 types are distinguished on the basis of handle shape and the articulation of handle elements. Group 2 varieties have not been distinguished. Class II specimens (case knives) are divided into series (on the basis of shape of the handle attachment), type (on the basis of blade shape), and variety (on the basis of minor shape differences). Category distinctions have been used extensively in the descriptions of both Class I and Class II knives.

Knife descriptions are presented according to the formal distinctions above. Comparative and distributional evidence is presented in the specific type descriptions. Table 44 summarizes knife-feature associations. Knife descriptions are necessarily brief and are confined to the formally identified attributes. Knife illustrations are extensive, however, and should permit the identification of many attributes not described.

When the manufacturer's names or symbols impressed on the knives are listed, questionable letters are placed in parentheses (a), and letters present but unidentifiable are designed by a dash (-).

Class I Hinge Present Between Blade and Handle (Clasp Knives)

Group 1 Class I Blades

The Group 1 classification is based primarily on blades and blade fragments. Group 1 knife blades are referred to as "French clasp knives" in the literature.

Type 1 Knob or flanged hinge element

All T1 specimens exhibit a flattened knob which extends from the hinge end of the blade. This knob served as a blade stop while the knife was in use. All Group 1 types as well as all T1 specimens have a hole near the hinge end through which an iron rod was passed for handle attachment.

Variety a "Standard" blade shape.

Figure 55 A-F

159 specimens

Dimensions (52 specimens): length, 94.8-135.0, average, 122.2, standard deviation, 9.6; width, 16.9-23.4.

The blade back is angular in shape. The back section nearest the blade-hinge end is generally straight while the blade section nearest the blade point is often slightly concave. The majority of Va specimens have been impressed with manufacturer's names or symbols. Names stamped on 24 specimens are listed below.

- |                          |                                    |                        |
|--------------------------|------------------------------------|------------------------|
| 1. --HE. -- R<br>---- -- | 5. -. (IL)<br>- --V                | 9. OINE.<br>(I)E-E     |
| 2. -AN-- (L)<br>E (R)-   | 6. IV (ST).CH<br>APELON            | 10. ANTOIN             |
| 3. ANTOINE.ER<br>---     | 7. (A)NMEI<br>P(I)-VD              | 11. I (E)AN<br>--R(R)- |
| 4. -<br>(L)AYN           | 8. IERRE. B (E)-<br>(I)-. (LEI)ILS | 12. ANO<br>-RIOL       |

13. I.PERRI N.LAYNE	17. CLAVD- (CNA) PE-	21. -V(ST). (CH) -ION
14. CLAVDE -LOTO(N)	18. -.E(L)A(N) LAVN	22. PIERRE. --O MAS. LLIEVN-
15. -E(R) - IEVN(E)	19. -VST.CH AP(E) LON	23. IEAN BARME
16. -R.E O OI	20. C(I) AVDE	24. S.B-E. (A) ----

Thirteen additional specimens had marks which included symbols (Figure 61 A-M). Additional names and symbols have been identified on Va specimens from other sites: see Russell (1967: 172); Quimby (1966: 68); Perino (1967); Wittry (1963: 37); Harris (1965: 348-349); and Jelks (1967: 21-22).

Va clasp knives are associated with the NW and SW rowhouse units, the Church and Priest's house area, the commanding officer's house, and the garden areas to the north and south of the SSW rowhouse units. Areas of absence or low frequency are the NNW and SSW rowhouse units and the British soldiers' barracks (F. 3). Va feature associations (Table 44 ) conform generally to this pattern of distribution. This evidence suggests a 1715 to 1760 period of common use at the site. This suggested date is supported by comparative evidence (Table 45 ) which indicates that French clasp knives were found at sites occupied or influenced by the French between 1680 and 1760.

Variety b "Kitchen Knife" blade shape.

Figure 55 G

6 specimens

Dimensions (6 specimens): length range, 117.0-128.0; width range, 16.1-21.2.

Vb specimens have an upturned and rounded blade tip. Two Vb specimens have been impressed with manufacturer's marks:

1. I-(E) (P)E	2. PIERRE. B-(R)
- IEVN(E)	--

Figure 61 N illustrates a mark noted on a third, Vb specimen.

Variety c Convex blade shape.

Figure 55 H

1 specimen

Dimensions (1 specimen): length, 11.3; width, 18.2.

Both the back and edge of this specimen taper to a point.

Variety d "Hawk-bill" blade shape.

Figure 55 I

12 specimens

Dimensions (3 specimens): length, 126.2, 121.0, 129.8;  
width, 21.6, 23.7, 27.4.

The hawk-bill shape is characterized by a back which tapers sharply at the blade tip. The other section of back is parallel to the blade edge. Three specimens bear manufacturer's names:

1.    - -O--	2.    ANDRE.EORI	3.    A(A) EL
- I(E)VN-	AI        EVNE	--(A )

Figure 61 O-R illustrates marks noted on 4 additional specimens.

Variety e Sharply tapered "Hawk-bill" blade shape.

Figure 55 J

6 specimens

Dimensions (5 specimens): length range, 109.1-124.8; width range, 22.5-25.5.

Ve specimens differ from Vd specimens in having a very sharp back taper at the blade tip. The blade back and edge are not parallel.

Variety f Sharp back taper, parallel back and edge blade.

Figure 55 K

1 specimen

Dimensions (1 specimen): length, 90.3E; width, 16.3.

This specimen may be a small example of T1, Ve, although the back and edge are parallel.

Type 1, Category 1

This category consists of T1 specimens which could not be classified into formal varieties.

Figure 55 L-O  
4 specimens

One specimen was marked with a manufacturer's name:

1. ROO(M)  
(E) AD

Type 2 Hinge-end knob element

Type 2 specimens bear a knob which extends to the rear of the knife blade. This knob is actually a horizontal extension of the blade back. This knob served the same purpose as does the raised knob on T1 specimens.

Variety a Angular blade-back shape.

Figure 56 A  
1 specimen  
Dimensions (1 specimen): length, 122.5; width, 23.6.

The mark on this specimen is illustrated in Figure 61 S.

Variety b Straight blade-back shape, rounded heel.

Figure 56 B  
1 specimen  
Dimensions (1 specimen): length, 115.3E; width, 21.2.

Both the back and edge taper from the blade-hinge end to the blade point. This specimen has a rounded heel.

Type 3 Extended hinge-end knob element

The 2 T3 specimens exhibit a knob element which is extended from the blade-hinge end.

Variety a Angular blade-back shape.

Figure 56 C  
1 specimen  
Dimensions (1 specimen): length, 118.6E; width, 21.0.

Variety b Slightly concave, tapered blade-back shape.

Figure 56 D

1 specimen

Dimensions (1 specimen): length, 118.2E; width, 19.3.

Type 4 Ring and knob hinge element

The single T4 specimen has a hinge element which consists of an offset ring and knob. The ring bears a hole for handle attachment.

Variety a Angular blade-back shape.

Figure 56 E

1 specimen

Dimensions (1 specimen): length, 154.1; width, 23.9.

#### Group 1, Category 1

This category consists of 2 pewter fragments which are thought to be handle tips for G1 knives. The 2 specimens are illustrated in Figure 56 F-G.

#### Discussion: Group 1

All Group 1 specimens are identified as different forms and shapes of French clasp knives.

#### Group 2 Class I Handles

The G2 classification is based primarily on handles. Blades are present in some cases and are partially described.

#### Series A Handle Composed of Spring and Handle Plates

SA specimens consist of bone or metal handle elements which are attached directly to the handle spring by iron pins. One pin is passed through the blade for blade attachment. All blades have hinge elements formed by a notched or offset blade-hinge end.

#### Type 1 Crescent-shaped handle

Figure 56 H

1 specimen

Dimensions (1 specimen): blade length, 103.1E; blade width, 20.5E.

This specimen has 3 handle attachment pins and a sharply curved spring and handle.

Type 2 Notched handle shape

Figure 56 I

1 specimen

Dimensions (1 specimen): handle length, 66.6.

Type 3 Slightly curved handle shape

Figure 56 J

2 specimens

Dimensions (1 specimen): handle length, 86.8.

Type 4 Copper handle with raised floral decoration

Figure 56 K-M

7 specimens

Dimensions (6 specimens): handle length range, 53.4-95.5.

All T4 specimens have 3 handle attachment pins. Handle plates are copper with raised floral designs. Spots of red and white paint were noted as additional decorative elements on several specimens.

Series B Handle Composed of Spring, Handle Plates, and Bolster Linings

SB specimens are distinguished by the presence of bolster linings between the handle plate and spring.

Type 1 Rounded-end handle

Figure 56 N

4 specimens

Dimensions (2 specimens): length, 113.8, 117.8; width, 24.1, 26.3.

T1 specimens have a solid-iron bolster lining. One handle end is rounded; the other (hinge end) exhibits a short, raised area against which handle plates are placed. Handle plates are missing on all T1 specimens. The handle spring terminates at a wooden inset which serves to protect the knife point. Two T1 blades exhibit manufacturer's marks (Figure 61 T-U). Peterson (1958: 131) illustrates a similar specimen from a Revolutionary War site.

Type 2 Raised areas on each end of bolster lining, slightly rounded handle end

Figure 56 O, P

3 specimens

Dimensions (2 specimens): handle length, 78.2, 94.0.



These specimens are smaller than SB, T1 knives above and exhibit a longer raised area on the bolster lining at the hinge end. Bone handle plates are present on 2 specimens.

Type 3 Upturned, pointed handle

Figure 57 A

3 specimens

Dimensions (2 specimens): handle length, 95.2, 98.2.

The bolster linings on T3 specimens bear a raised area at the hinge end. Bone handle plates cover the remaining section of the bolster lining.

Type 4 Curved handle

Figure 57 B,C

10 specimens

Dimensions (3 specimens): handle length, 107.7, 104.2, 120.7.

T4 specimens have bolster linings which exhibit raised metal areas on both ends. Bone handle plates are attached between these raised areas. Hagerty (1963: 106) notes similar specimens from both Ticonderoga, New York, and Ligonier, Pennsylvania. One specimen was marked with the following name:

1. AILOY  
DOJD

Type 5 Straight handle

Figure 57 D

2 specimens

Dimensions (2 specimens): handle length, 86.3, 102.8.

The bolster linings on T5 specimens bear short, raised areas at the hinge end. Bone or ivory handle plates, engraved with cross hatching, are attached to the remaining bolster-lining surface.

Type 6 Slightly curved handle

Figure 57 E

2 specimens

Dimensions (1 specimen): handle length, 114.5.

T6 specimens exhibit bolster linings with raised areas on the hinge end. The opposite handle end is capped by a circular metal knob. The raised bolster-lining surface is covered by bone handle plates.

Type 7    Straight handle

Figure 57   F

1 specimen

Dimensions (1 specimen):    handle length, 113.2E.

This specimen has a bolster lining without raised areas;  
handle blades are not present.

Group 2, Category 1

This category consists of 8 blades of the type associated with Group 2 handles. Figure 57 G-K illustrates different Group 2 blade forms. Figure 57 L represents a brass, bolster lining.

Class I, Category 1

This category includes handles from CI clasp knives.

Type 1    Handles

Figure 57 M,N

2 pairs brass handles

Two pairs of perforated brass handles were recovered from the site. These may represent handles for French clasp knives (CI, GI, T1-T4). One specimen (Figure 57 N) contains leather on the inside.

Discussion: Class I, Group 2

Group 2, Series A, and Group 2, Series B specimens were combined on one distribution map for interpretative purposes. This map does not indicate that Group 2 knives were associated with any specific structures. The largest area of concentration (6 specimens) occurs in the area between the SW and SSW rowhouse units. Feature associations (Table 44) indicate that Group 2 specimens were recovered from contexts which date after ca. 1740-1745. The limited comparative evidence noted above (Hagerty 1963: 106; Peterson 1958: 131) suggests that Group 2 knives were present in contexts dating after 1760.

Class II    No Hinge Between Handle and Blade (Case Knives)

Class II knives are represented by a single piece of iron which forms both a blade and handle shaft.

Series A    Pointed Handle Shaft (rat-tail)

CII, SA knives are characterized by a long, pointed iron handle shaft. The handle (bone or wood) has been driven onto the shaft.

Type 1    Tapered blade edges; centered, square-section handle shaft; oblong bolster shape

Figure 57    O

2 specimens

Dimensions (1 specimen):    blade length, 129.0E; blade width, 17.9.

Type 2    Tapered back edge; offset, square-section handle shaft; round bolster shape

Figure 57    Q

2 specimens

Dimensions (1 specimen):    blade length, 146.2; blade width, 29.5.

Type 2, Category

Two fragmentary specimens were recovered; these resemble T2 knives in blade shape (Figure 57 P-R). Both specimens have impressed manufacturer's marks (Figure 61 V-W).

Type 3    Angular back edge; centered, round-section handle shape, round bolster, shape; "table knife."

Figure 58    A

2 specimens

Dimensions (1 specimen):    blade width, 24.2.

Type 3, Category

One ivory handle fragment (Figure 58    B) represents a T3 knife handle.

Type 4    Tapered blade edges; centered, square-section shaft, large round bolster

Figure 58    C

1 specimen

Dimensions (1 specimen):    blade length, 154.0E; blade length, 25.1.

Class I, Series A, Category 1

This category consists of 5 fragmentary specimens which have rat-tail handle shafts. See Figure 58 D-H.

Discussion: Class I, Series A

The 17, SA specimens can not be assigned a date of use on the basis of archaeological evidence. Comparative evidence (Table 45 ) indicates that SA knives were common during the first 75 years of the eighteenth century.

Series B    Flat Handle Shaft

CII, SB knife-handle shafts are rectangular in shape and are the same thickness as the knife blade.

Type 1    "Standard" blade shape, no bolster

T1 specimens have a straight blade back and edge. The edge tapers to a point. Varieties are distinguished on the basis of blade-heel shape and are described in a tabular format (Table 43 ). Refer to Figure 58 I-O, and Figure 59 A-B for an identification of heel shape. Impressed symbols were noted on 10 specimens (Figure 61 X-GG).

TABLE 43 Knife Measurements: Class II, Series B, Type 1, Varieties a through i

Taxonomic Designation	Frequency	Specimens Measured	Figure	Blade Width	Blade Length
CII, SB, T1, Va	7	2	58 I	19.2, 22.4	139.0, 174.0
Vb	14	2	58 J	24.9, 23.7	179.1, 195.7
Vc	7	1	58 K	28.3	182.6
Vd	2	0	58 L		
Ve	1	1	58 M	24.7	141.1
Vf	1	1	58 N	25.0	131.2E
Vg	1	0	58 O		
Vh	1	0	59 A		
Vi	1	0	59 B		

Class II, Series B, Type 1, Category

Ten fragmentary T1 specimens were found at the site; these could not be assigned to specific T1 varieties. One Category specimen is marked (Figure 61 HH).

Type 2 "Standard" blade shape; no bolster; very thick blade and shaft

Figure 59 C

1 specimen

Dimensions (1 specimen): blade width, 22.2.

This specimen is marked with the following letters:

LACQVE

LERISEL

Two wooden handle plates are attached with iron pins.

Type 3 Angular ("kitchen knife") blade shape; round bolster

Figure 59 D

13 specimens

Dimensions (2 specimens): blade length, 157.0, 173.0; blade width, 25.6, 28.6.

Three T3 specimens were marked with impressed symbols (Figure 61 II-KK).

Class II, Series B, Type 3, Category

Three fragmentary specimens seem to be T3 knives (Figure 59 E).

Type 4 Curved blade end, round bolster

Figure 59 F

1 specimen

Dimensions (1 specimen): blade length, 69.4; blade width, 20.0.

This specimen has wood, handle plates and a curved blade tip. The blade shape resembles that of a farrier's knife.

Type 5 Straight back, convex edge, round bolster

Figure 59 G-H

2 specimens

Dimensions (1 specimen): blade width, 20.5.

Type 6    Straight back and edge, bolster presentVariety a    Rectangular bolster.

Figure 59    I

1 specimen

Dimensions (1 specimen):    blade width, 20.1.

This specimen bears an impressed symbol (Figure 61 LL).

Variety b    Round bolster.

Figure 59    J

1 specimen

Type 7    Curved blade shape, single cutting edge

Type 7 varieties are based on heel shape.

Variety a    Angular heel.

Figure 60    A

1 specimen

Dimensions (1 specimen):    blade width, 14.8.

Variety b    Heel absent; blade reaches maximum thickness,  
at blade-handle junction.

Figure 60    B

1 specimen

Dimensions (1 specimen):    blade width, 11.1.

Type 8    Curved blade shape, double cutting edgeVariety a    Heel absent, triangular shape handle, plano-convex blade.

Figure 60    C

1 specimen

Dimensions (1 specimen):    blade width, 16.2.

Variety b    Centered handle; blade is diamond-shape in cross section.

Figure 60    D

1 specimen

Dimensions (1 specimen):    blade width, 15.4.

Variety c Slight heel between blade and handle; blade is triangular; shaped in cross section.

Figure 60 E

1 specimen

Dimensions (1 specimen): blade width, 15.5.

Type 9 Tapered blade back, round bolster

Figure 60 F

1 specimen

Dimensions (1 specimen): blade width, 19.8.

This specimen may represent a specialized knife type, possibly modified from a standard CII, SB knife blade. The specimen has bone handle plates and an iron handle-end cap nailed to the bone plates.

### Class II, Category 1

Cat. 1 consists of blade, handle shaft, and handle fragments from CII knives:

- Handles, 7 specimens (Figure 60 G-N).
- Handle shafts, 24 specimens (Figure 60 O).
- Blade fragments, 135 specimens.

Six of the handles have bone or ivory handle plates; the seventh specimen has a lead, handle plate.

### Discussion: Class II

Distributional differences have not been noted between CII, SA and CII, SB knives. On this basis, all CII specimens have been combined on the same distribution map for interpretative purposes. This map clearly indicates that CII knives are associated with the majority of structures at the site. CII knives are infrequent in only one area within the area between the SW and SSW rowhouse units. Although CII knives were in use throughout the period of site occupation, they appear in greater frequency after ca. 1740-1745; this is indicated by their high frequency in the SW and SSW rowhouse units and by their presence in feature contexts (Table 44 ).

### Discussion: Knives

Although this classification is formally structured, it is limited in several respects because of the incomplete and modified condition of many specimens. In spite of these limitations, however,



the formal differences described do provide a source for dating purposes. Class I (clasp knives) and Class II (case knives) appear to have been used at the site with equal frequency (256 specimens and fragments of each class are represented in the knife sample).<sup>1</sup> Case knives could not be assigned to different time periods on the basis of formal distinctions, although they appear to have been more frequent after ca. 1740 to 1745. Clasp knives are divided into two different groups, which are primarily distinguished by different forms of blade and hinge elements. The clasp knives of Class I, Group 1 are primarily of French usage and provenience (1715-1760). Class I, Group 2 clasp knives were used extensively only during the last 40 years of the site's occupation, ca. 1740-1780.

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<sup>1</sup>CII, SA, T3 and CII, SB, T3 knives represent 18 specimens which can not properly be termed "case" knives. These types represent tableware or table knives. In addition, several other types (CII, SB, T4, and CII, SB, T7 and T8) may represent specialized knife forms to which the term "case" does not apply.

# Figure 55     Knives

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	CI, G1, T1, Va	976
B	Va	654
C	Va	1971
D	Va	1
E	Va	1101
F	Va	2608
G	Vb	2506
H	Vc	1772
I	Vd	2469
J	Ve	1139
K	Vf	1
L	CI, G1, T1, Cat. 1	3302
M	Cat. 1	2378
N	Cat. 1	1
O	Cat. 1	1237

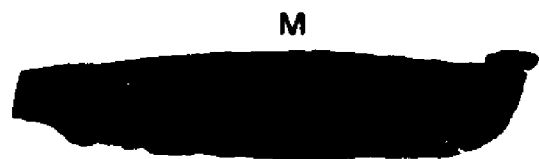
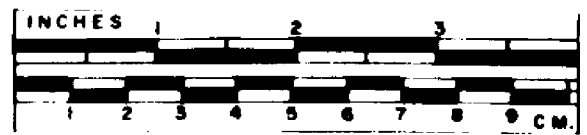


Figure 56 Knives

Figure Designation	Taxonomic Designation	Catalog Number, MS
A	CI, G1, T2, Va	953
B	Vb	1
C	T3, Va	1101
D	Vb	1183
E	T4, Va	883
F	CI, G1, Cat. 1	3290
G	Cat. 1	554
H	G2, SA, T1	1
I	T2	2286
J	T3	2815
K	T4	1
L	T4	1186
M	T4	1
N	SB, T1	1901
O	T2	1
P	T2	1



Figure 57      Knives

Figure Designation	Taxonomic Designation		Catalog Number, MS <sup>2</sup>
A	CI, G2, SB,	T3	1556
B		T4	1
C		T4	14
D		T5	1
E		T6	929
F		T7	1321
G		Cat. 1, T1	2477
H		Cat. 1, T1	353
I		Cat. 1, T1	1
J		Cat. 1, T2	2575
K		Cat. 1, T3	2369
L		Cat. 1, T4	1
M	CI,	Cat. 1, T1	1348
N		T1	1
O	CII, SA,	T1	2327
P		T2 (Cat.)	1574
Q		T2	1
R		T2 (Cat.)	795

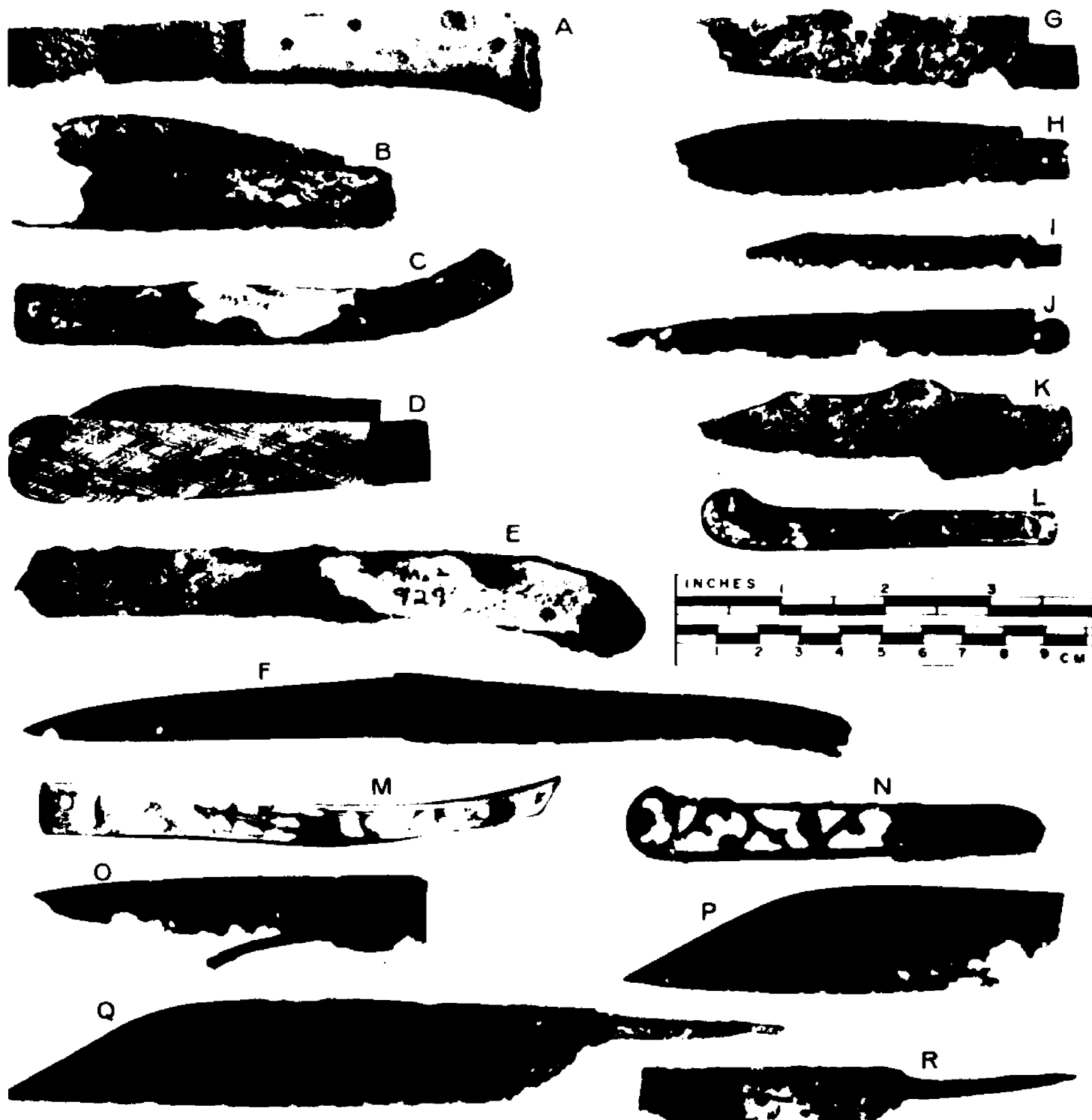


Figure 58      Knives

Figure Designation	Taxonomic Designation	Catalog Number, MS
A	CII, SA, T3	2665
B	T3 (HANDLE)	2682
C	T4	3370
D	SA, Cat. 1	65
E	Cat. 1	3389
F	Cat. 1	1925
G	Cat. 1	2361
H	Cat. 1	812
I	SB, T1, Va	1206
J	Vb	2989
K	Vc	1
L	Vd	1907
M	Ve	1
N	Vf	1
O	Vg	3317



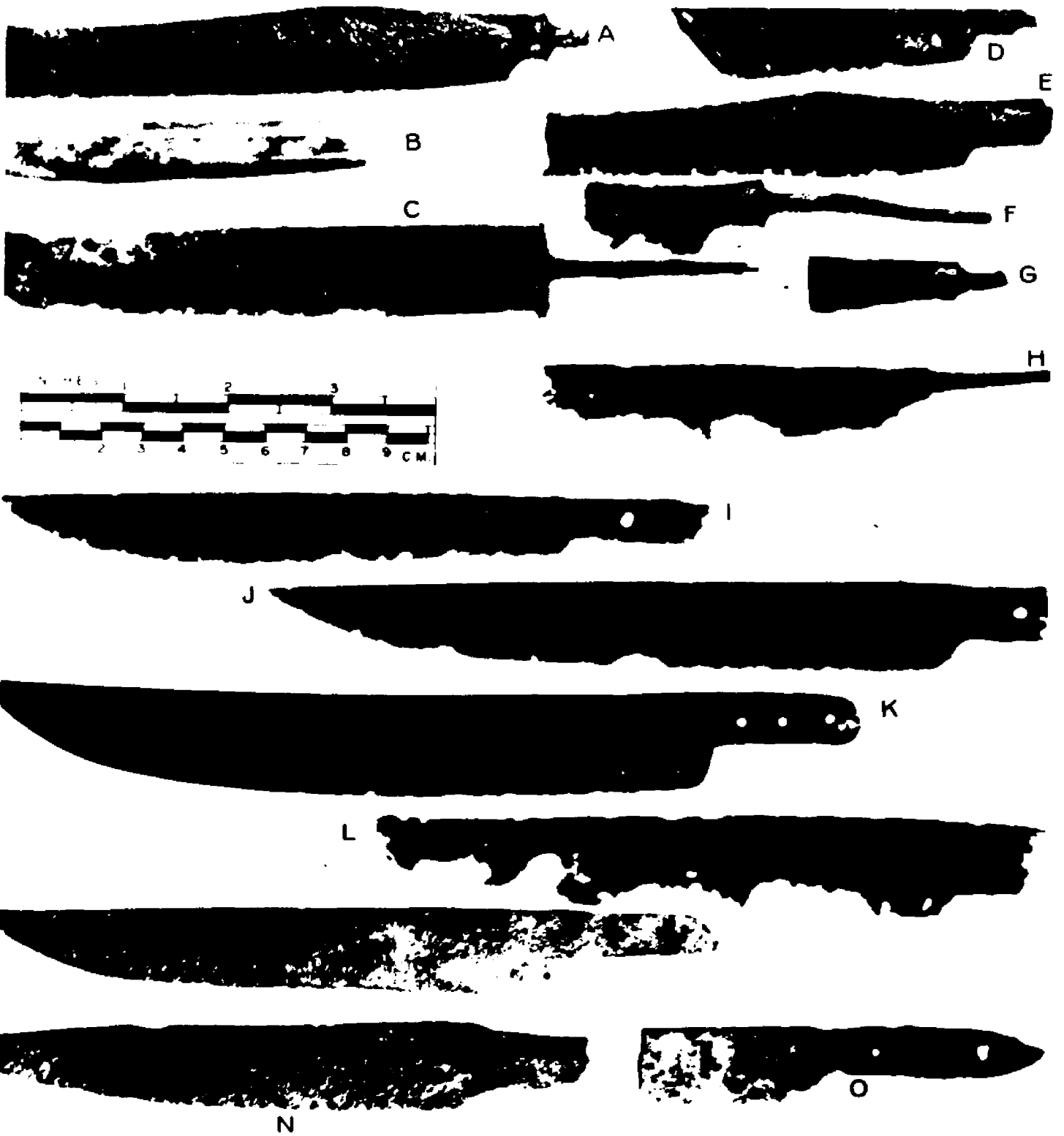


Figure 59      Knives

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	CII, SB, T1, Vi	1
B	Vh	1387
C	T2	1556
D	T3	2733
E	T3, Cat. 1	1416
F	T4	2897
G	T5	2619
H	T5	1
I	T6, Va	1267
J	T6, Vb	840



Figure 60      Knives

Figure Designation	Taxonomic Designation	Catalog Number, MS
A	CII, SB, Cat. 1, T7, Va	1234
B	Vb	1417
C	T8, Va	1
D	Vb	1460
E	Vc	1378
F	T9	3007
G	CII,      Cat. 1, T1, Va	1441
H	Va	1
I	Va	1440
J	Vb	1084
K	Vb	2256
L	Vb	3441
M	T2, Va	1383
N	Vb	3466
O	T3, Va	2670



Figure 61 Knives

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	CI, G1, T1, Va	2099
B	Va	1
C	Va	1101
D	Va	1
E	Va	2041
F	Va	1
G	Va	2834
H	Va	132
I	Va	228
J	Va	976
K	Va	1153
L	Va	423
M	Va	996
N	Vb	2889
O	Vd	2305
P	Vd	1435
Q	Vd	1
R	Vd	444
S	T2, Va	953
T	G2, SB, T1	2865
U	T1	1901
V	CII, SA, T2 (Cat.)	795
W	(Cat.)	1574
X	SB, T1, Va	3242
Y	Va	1206
Z	Vd	2724
AA	Vd	1355
BB	Vd	1
CC	Vd	2989
DD	Vc	267
EE	Vc	1
FF	Vd	2928
GG	Ve	1
HH	T1, Cat. 1	106
II	T3	2458
JJ	T3	2733
KK	T3	1109
LL	T6, Va	1267

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TABLE 44 Knife Feature Associations

Taxonomic Designation			Frequency	Feature Number
CI,	G1,	T1, Va	1	81
		Va	1	248
		Va	1	70
		Va	1	262
		Va	1	85
		Va	1	213
		Va	1	209
	G2, SA, T3		1	262
	SB, T1		1	213
	T1		1	296
	SB, T3		1	88
	SB, T7		1	79
CI,	G2,	Cat. 1	1	310
CII,	SA, T3		1	263
	SB, T1, Vb		1	265
	Vb		1	267
	Vh		1	84
CII,	SB, T1, Cat. 1		1	216
	Cat. 1		1	3
	T2		1	88
	T3, Cat. 1		1	267
	Cat. 1		1	85
	T4		1	297
CII, Cat. 1,	T1, Va		1	83
CII, Cat. 1,	T2, Va		1	75
	T4		1	267
	T4		1	84
	T4		1	209
	T4		3	296
	T4		1	249
	T4		1	135
	T4		1	85
	T4		1	140
	T4		1	102
	T4		1	81



TABLE 45 Knives: Comparative Evidence

Taxonomic Designation	Site	Date	Source
CI, Gl, T1	Gilbert, Tex.	1750-1775	Jelks 1967: 18-24
	St. Joseph, Mich.		Quimby 1938: 27
	Kashkashkia, Ill.		Perino 1967
	Gros Cap, Mich.	1710-1760	Quimby 1963: 55
	Womack, Tex.	1700-1730	Harris et al. 1965: 348-351
	Bell, Wisc.	1680-1730	Wittry 1963: 35
CI, Gl, T4	Gilbert, Tex.	1750-1775	Jelks 1967: 18-24
	Womack, Tex.	1700-1730	Harris et al. 1965: 348-351
CI, G2, SB, T1		1700's	Peterson 1958: 131
CI, G2, SB, T4	Ticonderoga, N.Y.		Hagerty 1963: 106
	Ligonier, Pa.	1758-1766	Hagerty 1963: 106
CI, Cat. 1	Ada, Mich.	pre-1760, 1820-1850	Herrick 1958: 7
CII, SA	Gilbert, Tex.	1750-1775	Jelks 1967: 18-24
	Womack, Tex.	1700-1730	Harris et al. 1965: 348-351
	Rosewell, Va.	1763-1772	Noel Hume 1962: 197-198
	Tutters Neck, Va.	1701-1710, 1730-1740	Noel Hume 1966: 58-59
	Marlborough, Va.	1726-1768	Watkins 1969: 158
CII, SB	Gilbert, Tex.	1750-1775	Jelks 1967: 18-24
	Womack, Tex.	1700-1730	Harris et al. 1965: 348-351
	Marlborough, Va.	1726-1768	Watkins 1969: 158

## GUNFLINTS

A total of 2536 gunflints were recovered from Fort Michilimackinac during the 1959 to 1966 excavation seasons. Of this total, 348 specimens (13.72 percent) are "blade flints" (Witthoft 1966: 28-29) or "gunflints" (Hamilton 1964: 52). "Wedge-shaped flints," "Dutch flints" (Witthoft 1966: 25-26), or "gunspalls" (Hamilton 1964: 52) are represented by 2183 specimens (86.08 percent). The former will be referred to as blade gunflints and the latter as spall gunflints. This terminology reflects the major technological distinctions between the two. A third form of gunflint, termed the "blade-spall" gunflint, is represented by 5 specimens. "English" gunflints, distinguished from blade and spall gunflints by both color and technique of manufacture (Witthoft 1966: 34-39; Hamilton 1964: 53; Smith 1960: 46), have not been recovered at Fort Michilimackinac. Fire-steels have not been identified at the site, although 93 gunflints bear evidence of use against fire-steels.

Several important historical and archaeological sources discuss the history and technology of gunflint production. The reader is referred to the following sources for detailed treatment of these subjects: Hamilton (1964); Witthoft (1966); and Smith (1960).

### Classification and Description:

The following attributes are recognized in the description of gunflints: form, which distinguishes gunflints on the basis of different techniques of manufacture; shape, which refers to the longitudinal cross section dimension of a gunflint; color; evidence of

wear, secondary flaking and firing; the presence or absence of a chalk-heel, which identifies a gunflint derived from a core cortex; and the dimensions of length, width and thickness. Only complete specimens have been used to identify these dimensions.

A source of potential confusion is inherent when discussing the length and width dimensions of gunflints. T. M. Hamilton (1969) has indicated that the French dimension of blade length actually referred to the short dimension of a gunflint. This is a result of the blade gunflint manufacturing process in which a number of blade gunflints were produced from a single length of flint blade. In French usage, the width of the blade blank becomes the width of the finished gunflint, and the length of the detached blade segment becomes the finished gunflint length. In this report, length and width refer to the current, commonly accepted, gunflint specifications; length is the axis of a gunflint which is parallel to the gun when mounted in a lock. Although this usage violates the known eighteenth-century system of reference, it is used here to avoid confusion and to maintain consistency with gunflint descriptions which have been published in the past. The reader should be aware of these distinctions and should consider them when comparing gunflint measurements with eighteenth-century French gunflint specifications.

The descriptive terminology in this report corresponds to accepted usage in the literature (Smith 1960: 44). The parts of a gunflint are: the edge or bevel, the side or end which strikes the frizzen; the back, the side or end which is clamped in the gun cock; the face, the top face; and the bed, the bottom face.

Three levels of classification are defined on the basis of three of the above attributes. These are: (1) series--distinguished by differences in technique of manufacture (form); (2) type--distinguished by differences in shape; and (3) variety--distinguished by differences in color. The following gunflint descriptions include comparative, metric, distributional, and associational evidence whenever possible.

#### Series A    Blade Gunflints

Series A gunflints are produced by detaching individual blade segments from a long, narrow blade which is derived from a flint core. The bed of a blade gunflint is nearly flat and is approximately parallel to the face. The bed also bears secondary retouch flaking on the edge. The top bears transverse flake scars (the negative flake scars produced by the prior removal of a blade from this core surface) and evidence of retouch flaking on all sides except the edge.

Type 1    Beveled edge and back, flat face, rounded back heel (see Figure 62 A-B for cross section shape)

Varieties within Series A, Type 1 have not been distinguished since the flint color is relatively consistent and varies from blond to light grey. This color is commonly referred to in the literature as "beeswax."

Figure 63 A-D; Figure 62 A-B

50 specimens (4 chalk-heel and 2 burned specimens)

Dimensions (18 specimens): length, 18.3-26.1, average, 22.85, standard deviation, 2.1; width, 18.6-32.0, average, 27.12, standard deviation, 3.0; thickness, 3.9-8.8.

Type 1 specimens bear 3 transverse flake scars on the top, with the center scar, or face, parallel to the bed; the other 2 flake scars form the front and back bevels. Type 1 gunflints (as well as Types 2 and 4) may be termed "fine" grade. Fine grade gunflints exhibit a parallel correspondence between face and bed. "Ordinary" grade blade gunflints lack this parallel correspondence. This distinction is presented for descriptive convenience, although it is felt that a similar distinction was applied to gunflints produced during the nineteenth-century (Hamilton 1969). The 18 Type 1 specimens measured exhibit a high degree of association between length and width, expressed by a correlation coefficient of .85. The correlation coefficient squared, .72, expresses the percent of

variation within 1 variable which is explained by variation in the other variable. These values suggest that a desired ratio between length and width was closely maintained during manufacture. This ratio is expressed as 1 unit of length to 1.19 units of width. The high correlation coefficient permits the calculation of regression formulas which may be used to predict either the length or width of a specimen (or sample of specimens) when 1 dimension is known. This is particularly useful in the analysis of used gunflints since the dimension of length is normally unknown, whereas the width dimension is normally preserved. The formula which defines the regression line for Type 1 blade gunflints (based on a known width value) and which is applicable to Type 1 blade gunflint length prediction is:

$$Y = A + BX \quad \text{Where:} \quad \begin{array}{l} A = 5.20 \\ B = .65 \\ X = \text{known blade width} \\ Y = \text{unknown blade length} \end{array}$$

The regression line described by this formula is shown (Figure 64 ) as it relates to the distribution of 18 specimens of known dimension. A second similar formula, based on a known length dimension, could be computed; however, it would have little utility since this dimension is rarely complete on used gunflints. It should be stressed that this formula is applicable only to the 18 measured blade gunflints at Fort Michilimackinac and that its validity and usefulness have not been tested against other samples of known dimension.

Predictions based on this formula are not totally accurate. When considering the highly significant correlation coefficient, however, the derived predictions are sufficiently reliable to permit the computation of an unknown dimension with a degree of reliability acceptable for comparative research. In this sense, the greater the correlation coefficient, the more reliable the results of regression analysis.

This formula may then be applied to the remaining 14 Type 1 specimens (measurable on the width dimension only) in order to predict an average length for this sample; this also permits the adjustment of the original length and width averages on the basis of this additional data. This information is presented in Table 46 .

The width mean in the adjusted dimension column represents a more accurate figure for this dimension than the mean based on an original sample of 18 does. The adjusted length mean, however, is reliable only as a reflection of the accuracy of the original regression formula on the basis of which it was computed. This procedure will be useful in analyzing gunflints from the majority of sites which have produced specimens that are measurable only on the width dimension. This analysis of individual specimens may

TABLE 46 Series A, Type 1 Gunflint Measurements Based on Regression Formula

	Original Sample (18)	New Sample (14)	Adjusted Dimensions (based on combined sample of 32)
Length Mean	22.85	24.18*	23.42
Width Mean	27.12	29.20	28.00

\*Value based on regression formula:  $Y = 5.20 + .65X$

permit the identification of gunflint size categories based on 2 dimensions rather than on 1. Moreover, it is the author's opinion that length is a more critical variable in terms of gunflint function. Any procedure which permits the approximate calculation of this dimension will therefore be very useful in evaluating the significance of variation in gunflint specifications.

The possible presence of Type 1 gunflint size categories has been studied in 2 different ways: (1) by an inspection of a dimension scattergram based on 18 complete specimens (Figure 64 ); and (2) by considering the frequency distribution of the width dimension of all 32 specimens in 2.9 mm increments. Within the sample of 32, 90.6 percent measure between 24.0 and 32.9 mm, with nearly equal frequencies within each of the three increments, which are: 24.0-26.9 (9 specimens); 27.0-29.9 (10 specimens); and 30.0-32.9 (10 specimens). Neither approach indicates that size categories are present; the low width and length standard deviations support this conclusion.

Type 2 Beveled edge, flat face, rounded back heel, no back flake (see Figure 62 C-D for cross section shape)

Figure 63 E-H; Figure 62 C-D

94 specimens (9 chalk-heel, 2 burned, and 4 specimens which have been used against fire-steels)

Dimensions (31 specimens): length, 16.4-31.8, average, 23.54, standard deviation, 4.29; width, 16.0-36.3, average, 27.01, standard deviation, 5.44; thickness, 3.9-11.8.

Type 2 specimens bear 2 transverse flake scars on the top, with the center scar, or face, normally parallel to the bed. The second flake scar forms the bevel or edge. The 31 Type 2 specimens measured exhibit a high degree of association between length and width; the correlation coefficient is .95. Ninety percent of the variation within 1 variable is explained by variation within

the other variable. The desired ratio (1 unit of length to 1.15 units of width) between length and width was closely maintained during manufacture.

The formula which defines the regression line for Type 2 blade gunflints (based on a known width dimension) and which is applicable to Type 2 blade gunflint length prediction is:

$$Y = A + BX \quad \text{Where:} \quad \begin{array}{l} A = 3.40 \\ B = .74 \\ X = \text{known blade width} \\ Y = \text{unknown blade width} \end{array}$$

The regression line described by this formula is shown in Figure 65. This formula may be applied to an additional 27 specimens which are measurable on the width dimension. The derived values are presented in Table 47.

TABLE 47 Series A, Type 2 Gunflint Measurements Based on Regression Formula

	Original Sample (31)	New Sample (27)	Adjusted Dimensions (based on combined sample of 32)
Length Mean	23.54	24.21*	23.85
Width Mean	27.01	27.90	27.42

\*Value based on regression formula:  $Y = 3.40 + .74X$

The possible presence of Type 2 gunflint size categories was evaluated by means of a dimension scattergram (Figure 65) and by a width frequency distribution graph. Neither approach demonstrates that size categories were present, although the broad range of gunflint specifications indicates that different sizes were available for use in different types of guns. There may have been considerable flexibility in the specifications of a gunflint which would serve any particular type of gun. Either the gunflint sample was too small to yield evidence of size differences, if present, or Type 2 gunflints at Fort Michilimackinac only appear in 1 very broad size range. Although gunflint size distinctions were apparently intended during manufacture (Hamilton 1964: 41-45), evidence for this does not appear in this sample.

Type 3 Beveled edge and back, no face flake, triangular in cross section (see Figure 62 F-H for cross section shape)

Figure 63 I-L; Figure 62 F-H

66 specimens (6 chalk-heel, and 2 specimens which have been used against fire-steels)

Dimensions (24 specimens): length, 18.0-27.1, average, 21.95, standard deviation, 2.20; width, 21.3-32.8, average, 27.56, standard deviation, 2.76; thickness, 5.0-11.1.

Type 3 specimens exhibit 2 transverse flake scars on the top, neither of which is parallel to the bottom face; this distinguishes Type 3 blade gunflints as ordinary grade. The 24 Type 3 specimens measured exhibit a moderately high degree of association; the correlation coefficient is .77. This figure squared indicates that 59 percent of the variation within 1 variable is explained by variation in the other variable. This figure is too low to justify the computation and use of a regression formula for predictive purposes. The formula is presented below for the purpose of description only:

$$Y = A + BX \quad \text{Where:} \quad \begin{array}{l} A = 2.84 \\ B = .69 \\ X = \text{known blade width} \\ Y = \text{unknown blade length} \end{array}$$

The presence of Type 3 gunflint size categories could not be demonstrated. The length to width ratio is 1 unit of length to 1.25 units of width.

Type 4 Long, flat face, rounded back (see Figure 62 I for cross section shape)

Figure 63 M-N; Figure 62 I

3 specimens

Dimensions (2 specimens): length, 24.1, 23.4; width, 25.3, 30.4; thickness, 6.2-6.4.

The 3 Type 4 specimens exhibit a very broad transverse flake scar on the top (face) which is approximately parallel to the bed. These specimens can probably be termed fine grade gunflints.

### Series A, Category 1

This series consists of specimens which represent blade gunflints but which could not be identified as to specific type because of their fragmentary and worn condition. All specimens were made from the same type of flint as that described for Series A types. This category consists of 135 specimens (14 chalk-heels, 9 specimens used on fire-steels, and 6 specimens which have been burned); these specimens have



not been measured. Random specimens of Series A, Category 1 gunflints are illustrated in Figure 63 O-R, and Figure 62 J-L.

#### Discussion: Series A Blade Gunflints

Four types of blade gunflints have been distinguished (see Table 48 for a comparative tabulation of metric data). Series A types are distinguished on the basis of differences in longitudinal cross section shape, as defined by the number and orientation of transverse flake scars on the gunflint surface. A more generalized system of classification would distinguish between fine grade specimens (Types 1, 2, and 4) and ordinary grade specimens (Type 3) on the basis of correspondence in angle between the top and bed of a gunflint.

An attempt has been made to distinguish gunflint sizes within Series A types. The presence of size categories could not be demonstrated. Moreover, there are no significant differences in gunflint sizes between types. A comparison of other quantitative attributes, however, reveals certain between-type differences. The 2 major fine grade types (Types 1 and 2) exhibit a more consistent ratio between length and width than does the single ordinary grade type (Type 3). In terms of individual dimension variation, however, Type 3 gunflints have significantly smaller standard deviations in both dimensions than do either Type 1 or 2 specimens. In comparing fine with ordinary specimens, it is evident that although the length and width dimensions of ordinary specimens are less closely associated, individual length and width dimensions are more restricted. Type 3 specimens thus vary to a relatively greater degree in terms of rectangular shape but, to a lesser degree, in terms of size. In terms of length and width ratios, Type 3 specimens are wider in proportion to length than are either Type 1 or Type 2 specimens. The ratio of ordinary specimens to fine specimens is 1 to 2.18. Although these type distinctions between fine and ordinary blade gunflints are real, they are thought to represent normal products of gunflint manufacture, rather than intentionally or desirably produced types; that is, to produce fine quality blade gunflints, it is also necessary to produce a certain amount of ordinary quality gunflints.

The pattern of Series A gunflint distribution appears to duplicate the distribution of other artifact categories which appear randomly at the site. Although blade gunflints occur in nearly all excavated areas, they are much more frequent in the area south of the 220 grid line. In evaluating this distribution, it was also noted that there are no distributional differences between used and unused blade gunflints. The distribution of unused blade gunflints, therefore, cannot be used to define areas of storage or supply. The most significant observation on Series A gunflint distribution is that Series A specimens occur very infrequently in a large area within the center of the earliest French stockade; this may indicate that blade gunflints were not in use until at least after 1735. This suggested date is supported by feature associations (Table 50) which indicate that Series A gunflints

rarely occur in features which date from the earliest French occupation.

Series A gunflint comparative evidence (Table 49) is inconclusive regarding dating or differential spall to blade ratios through time. This evidence indicates that Series A gunflints occur commonly in sites which were occupied during the eighteenth century; however, they rarely occur in sites occupied earlier than 1700. Series C spall gunflints occur commonly during the seventeenth and eighteenth centuries and are found in direct association with Series A blade gunflints at many sites. In Witthoft's (1966: 28) interpretation of this evidence concerning Series A gunflints (his "blade-flints"), he maintains that

A few French flints may have been made before 1675, but that they were not an ordinary article of commerce until later than 1740. Judging in terms of evidence from military sites in North America, by 1775 the French flint was the only type made.

Also (1966: 30),

Prior to 1760, the majority of French flints were designed for the fire-steel.

Hamilton (n.d.: 37) notes that

Though I believe that French flints were in the American trade before 1700 they did not become a significant factor until an as yet undetermined later date. Also, I suspect that French flints were used first in quantity by the French military, and only later by what may be loosely termed the civilian population, including the fur trade and Indians.

Several additional comments may be added to these interpretations. The differential frequency of spall and blade gunflints at a site may not necessarily be entirely a function of differential availability through time but may also be related to differential preferences of the inhabitants of different types of sites. At many sites, both spall and blade gunflints occur frequently, although spall gunflints generally occur in greater numbers. This suggests that either spalls were more readily available or that spalls were preferred over blades.

Comparative evidence, site distribution, and feature associations indicate that Series A gunflints were initially used at the site between 1730 and 1740; they appear to have been used from this time until the site was abandoned.

### Series B    Blade-Spall Gunflints

Figure 63 S-U; Figure 62 M-N

4 specimens

Dimensions (4 specimens): length, 22.9, 23.2, 25.4, 22.3; width, 31.2, 25.2, 29.3, 28.2; thickness, 6.8-9.1 (range).

Series B gunflints are distinguished by the presence of 1 transverse and 1 longitudinal flake scar on the top face. The longitudinal flake scar has a central bulb of percussion, as in Series C specimens below. The transverse flake scar is a characteristic of Series A gunflints described above. The flake junction is distinguished by a transverse ridge across the gunflint and is marked on the spall side by a central bulb of percussion. Both flakes taper down to the gunflint ends. The end produced by the longitudinal flake appears to have been the edge of the gunflint. The flint used in Series B specimens is dark grey; this coloration most closely resembles that of Series C, Type 1, Variety b. These specimens are anomolous in bearing evidence of both Series A and Series C flaking techniques, although they resemble Series C gunflints most closely in flint type. It is tentatively suggested that Series B specimens represent salvable by-products of standard Series C spall gunflint production.

### Series C    Spall Gunflints

Series C gunflints are produced by the removal of individual spalls from a flint pebble or nodule. The top face of the gunflint has a slightly convex surface on the edge side of the bulb of percussion and is sharply beveled toward the back by secondary flaking. A number of specimens bear a heel which has only been slightly retouched and thus retains evidence of the original core cortex, or, of the bottom face of a previously removed spall. The bulb of percussion is evident on many specimens and occurs at the approximate center of the gunflint near the heel end. The bed of the gunflint is slightly concave to flat in longitudinal cross section and often bears negative flake scars from the prior removal of gunflints. The bottom face of a spall gunflint is the outside face of the core from which it was produced. The heel and side edges of a spall gunflint are normally retouched and shaped during manufacture, whereas the edge appears to have been left in its original sharp condition, to be retouched later by the user. Many unused Series C specimens in the Fort Michilimackinac sample exhibit very fine retouching along the bed edge. Hamilton (1960: 28-79) and Witthoft (1966: 26-28) include more detailed accounts of spall gunflint manufacture.

#### Type 1    Wedge-shaped

This type distinction is for convenience in classification only and applies to all Series C specimens.

Variety a Grey to brown.

Figure 67 A-M; Figure 62 O; Figure 66 A-H

2032 specimens (46 chalk-heel, 113 burned, 106 used against fire-steels (Figure 67 S-V), 92 specimens which exhibit negative flake scars on the bed)

Dimensions (177 specimens): length, 15.9-38.3, average, 25.11, standard deviation, 3.71; width, 18.3-36.4, average, 27.85, standard deviation, 3.98; thickness, 4.0-10.4; correlation coefficient, .79.

The moderately high correlation coefficient of .79 between length and width indicates that 62 percent of the variation in 1 variable can be explained as a result of variation in the other. The ratio between these dimensions is 1 unit of length to 1.10 units of width. A comparison of standard deviations between each of the 2 dimensions indicates that the relative amount of metric variation between dimensions is nearly the same; that is, the pattern of deviation from the mean is about the same for either dimension.

A sample of 42 specimens which had negative flake scars on their bottom face were also measured. A correlation coefficient of .70 between length and width indicates that the ratio between the 2 dimensions in Series C, Variety a spall gunflints with negative flake scars were less consistent. These specimens also exhibit a greater width dimension (29.66 mm average) relative to length (25.72 mm average) than other Series C, Variety a specimens. These observations indicate that Series C, Variety a spall gunflints which have negative flake scars on their bottom face were less consistent in size and shape and were probably less desirable gunflints than specimens which did not exhibit this trait.

A regression formula is presented below which may be used to predict the length of specimens or samples if the width is known. This formula is not considered sufficiently reliable for comparative purposes, however, and is presented for descriptive purposes only. The regression line described by this formula is presented in Figure 68

$$Y = A + BX \quad \text{Where:} \quad \begin{array}{l} A = 3.74 \\ B = .77 \\ X = \text{known width} \\ Y = \text{unknown length} \end{array}$$

The possible presence of Series C, Type 1, Variety a size categories was evaluated in 2 different ways: (1) by the construction of a graph which shows the independent frequency distribution of length and width dimensions of 177 specimens in 1.9 mm increments (Figure 68); and (2) by the construction of a

dimension scattergram (Figure 68). The first method provides no evidence of size categories. The second method yields similar results, although there may be a very slight tendency for size clustering in three areas, as expressed by the following approximate size ranges.

<u>Length</u>	<u>Width</u>
21.5-23.5	23.5-25.5
24.0-27.0	27.0-30.5
29.5-31.5	32.5-35.5

The above size categories were defined on an admittedly subjective basis. If these sizes were actually intended during manufacture, they were maintained with a great deal of variation. The concept of sizing gunflints in terms of anticipated gun type application, then, has little, if any, empirical validity. Although the range of acceptability of gunflint sizes which would have efficiently served any specific gun type must have been large, the users of gunflints probably consciously selected those which were in a specific, but broad, size range.

Variety b    Dark grey to black.

Figure 67 N-Q; Figure 66 I-J

139 specimens (14 chalk-heels, 16 specimens used against fire-steels, 12 specimens with negative flake scars on the bed)  
Dimensions (29 specimens): length, 21.2-32.5, average, 27.68, standard deviation, 2.94; width, 24.5-36.2, average, 29.28, standard deviation, 3.49; thickness, 5.0-11.9.

Variety b specimens are easily identified on the basis of flint characteristics. The flint is dark grey to black in surface color and is very dark brown when viewed through an intense light. Most specimens have white to light grey inclusions. The dimensions of length and width exhibit a moderate to low degree of association; the correlation coefficient is .70. This low correlation does not justify the use of a regression formula for predictive purposes. The formula has been computed, however, and is presented below for descriptive purposes only.

$$Y = A + BX \quad \text{Where:} \quad \begin{array}{l} A = 10.0 \\ B = .60 \\ X = \text{known width} \\ Y = \text{unknown length} \end{array}$$

The shape of Variety b specimens may be described in terms of a length to width ratio of 1 unit of length to 1.06 units of width. On this basis, Variety b spall gunflints are more nearly square than either Series C, Variety a, or Series A

gunflints. A comparison of length and width means and standard deviations reveals that Variety b spall gunflints are also larger than Variety a spall gunflints. Series C, Variety b size differences could not be distinguished.

Variety c    Brownish-red.

Figure 67 R; Figure 66 K  
4 specimens

Dimensions (3 specimens): length, 24.3, 23.7, 19.8; width, 31.2, 28.1, 20.3; thickness, 5.5-8.3.

These specimens differ from Variety a spall gunflints in color only.

Discussion: Series C Spall Gunflints

Three varieties of Series C, Type 1 spall gunflints have been distinguished above on the basis of differences in flint color. Each of the 2 predominant varieties (a and b) are represented by a small percentage of specimens which exhibit negative flake scars on their bottom faces. It has been pointed out that Variety a specimens which exhibit this attribute differ significantly from the remaining specimens which do not exhibit this attribute in terms of size, shape, and length to width ratio consistency.

A comparison of dimensions and ratios between Series C, Type 1, Variety a and Variety b specimens indicates that Variety b spall gunflints are both larger and more nearly square in shape than Variety a specimens. Size categories have not been defined for either major Series C variety, although the noted tendency of Variety a specimens to cluster within 3 very broad size ranges may indicate that specific gunflint sizes were intended during manufacture.

The distribution of both Series C spall gunflint varieties approximate the random distribution defined for Series A blade gunflints in that specimens appear in nearly all areas of excavation but are present in high frequencies south of the 220 grid line. The heaviest concentration of specimens within this area occurs in the western 6 to 10, 10-foot squares. More specifically, Series C spall gunflints occur very frequently within the suspected garden areas south of the 2 southern rowhouse units. Specimens within these rowhouse units are significantly less frequent than in the adjoining garden areas and, when present, are associated with basement features. The Priest's house is the only well-defined area of frequent occurrence north of the 220 grid line. Several areas of absence or low frequency have also been noted: (1) north of the earliest French stockade (F. 5) which includes such features as the provisions storehouse, an area included within the first stockade expansion to the north, and the NNW rowhouse unit; and (2) a large area within the west-center and northern part of the

earliest French stockade which includes most of the NW rowhouse unit. Differences between areas of high and low frequency are difficult to explain in chronological terms and are thought to more closely reflect the spatial distribution of areas which are characterized by activities such as gunflint supply and distribution or trash deposition. The occurrence of Series C, Variety a gunflints in specific feature contexts (Table 50) supports this suggested correlation.

The presence of Series C gunflints on other sites indicates that spall gunflints commonly occur in sites which date from the mid-seventeenth century through the eighteenth century. The occurrence of Series C spall gunflints at Fort Michilimackinac in both French and British contexts corresponds with a portion of this suggested broad date range, although spall gunflints (and blade gunflints) do not appear to have been common during the early years of French control from 1715-1735. This may have been due to the relatively small permanent population at the site during these years. Although the permanent population of the fort increased very little during the French period, the site serviced increasing numbers of itinerant traders throughout this period. This may explain the noted increase in frequency of gunflints at the site, when a major permanent population increase did not occur.

Both Witthoft (1966: 25) and Hamilton (1964: 52-53) have commented on the dating of spall gunflints. Witthoft maintains that spall gunflints were in use from 1650 until 1770, at which time the blade gunflint succeeded in popularity. Hamilton essentially concurs with this interpretation. Hamilton, speaking of Witthoft's conclusions (1968: 117), notes that he (Hamilton) has repeatedly used a system of dating (which Witthoft devised) based on "the interpolation of dates from the proportion of one type, such as Dutch, to another, such as French" with "encouraging results." To this author's knowledge, however, neither Witthoft nor Hamilton have reported the basis for or the results of this system. Interpretations of the present data will remain tentative, then, until this additional comparative information is available.

On the basis of the above comparative and distributional evidence, the Fort Michilimackinac spall gunflint sample is dated throughout the period of site occupation. A definite increase in frequency is noted after 1730 to 1735. A number of British period features associations indicate that spall gunflints were in common usage throughout the period of British control.

#### Discussion: Gunflints

The preceding gunflint classification permits an evaluation of physical variation within and between gunflint types as this variation reflects differences within the formal dimensions of the site. Many

of the attributes described did not prove to be meaningful indicators of different social adaptations or activities. It is hoped that their recognition and description, however, will provide valuable data for the interpretations of gunflints found on other sites.

A comparison of the distribution and physical attributes which characterize each gunflint series indicates the following general conclusions.

1. Spall gunflints (Series C) are much more frequent at the site than blade gunflints (Series A); this is expressed as a ratio of 1 blade gunflint to 6.25 spall gunflints.
2. Spall gunflints are larger in size and are less consistent in shape in terms of a length to width ratio than are blade gunflints.
3. Blade gunflints are wider in proportion to length than are spall gunflints.
4. Blade gunflints may be distinguished as fine (Types 1, 2, and 4) and ordinary (Type 3). The difference between spall gunflints which have negative flake scars on the bed and those which do not may represent a spall gunflint equivalent of this distinction.
5. The spatial distributions of spall and blade gunflints are similar, with the exception of several distributional differences which indicate that spall gunflints were present



throughout the period of site occupancy, whereas blade gunflints may not have appeared at the site prior to 1730 to 1740. Specific feature associations support this conclusion.

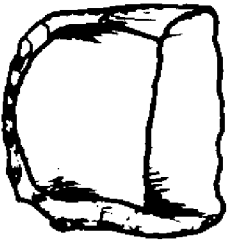
6. Neither Series A nor Series C gunflints exhibit distributional differences between used and unused specimens.

Figure 62 Gunflints (Actual Size)

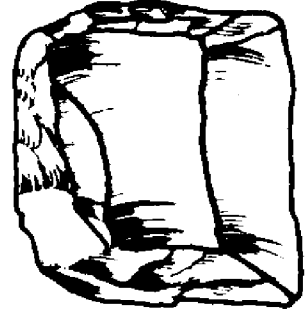
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B	SA, T1	538
C	SA, T1	2122
D	SA, T2	2317
E	SA, T2	967
F	SA, T3	219
G	SA, T3	2061
H	SA, T3	659
I	SA, T4	2002
J	SA, Cat.1	2648
K	SA, Cat.1	2766
L	SA, Cat.1	2050
M	SB	130
N	SB	2998
O	SC, T1, Va	2794



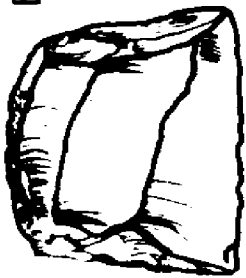
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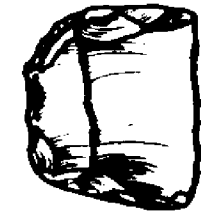
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B



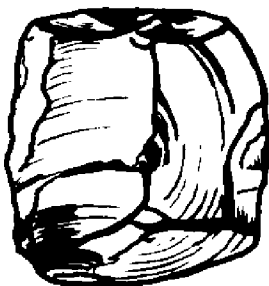
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G



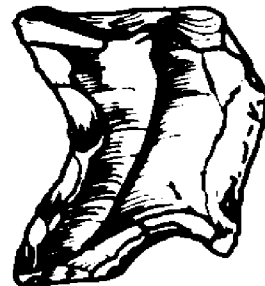
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L



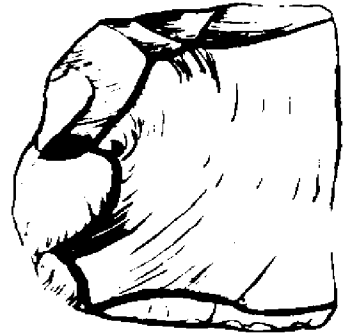
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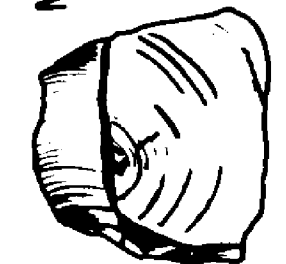
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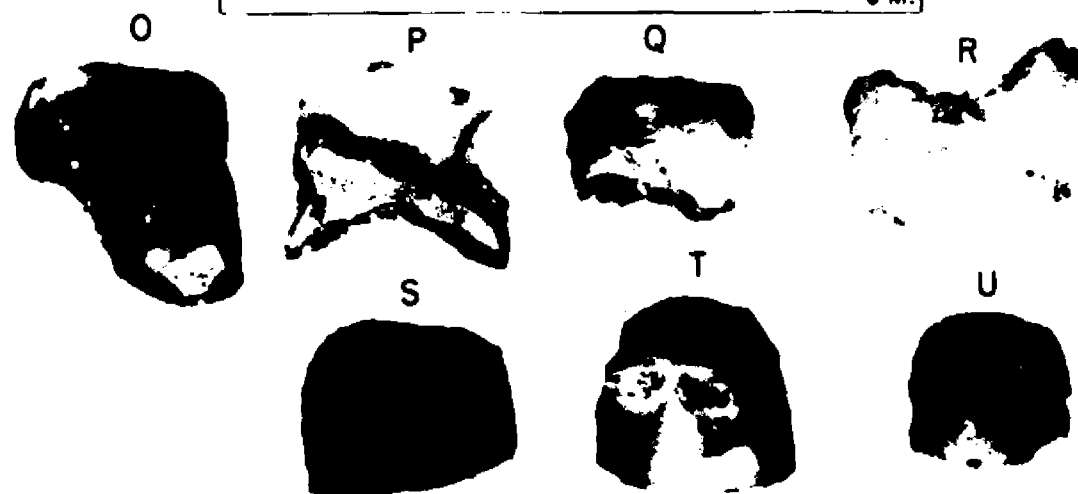
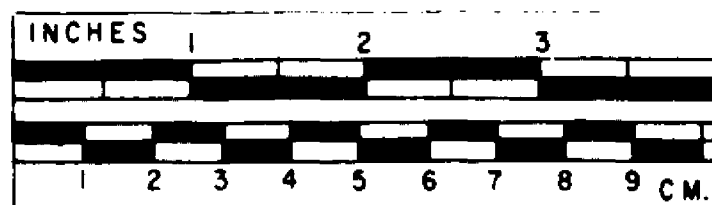
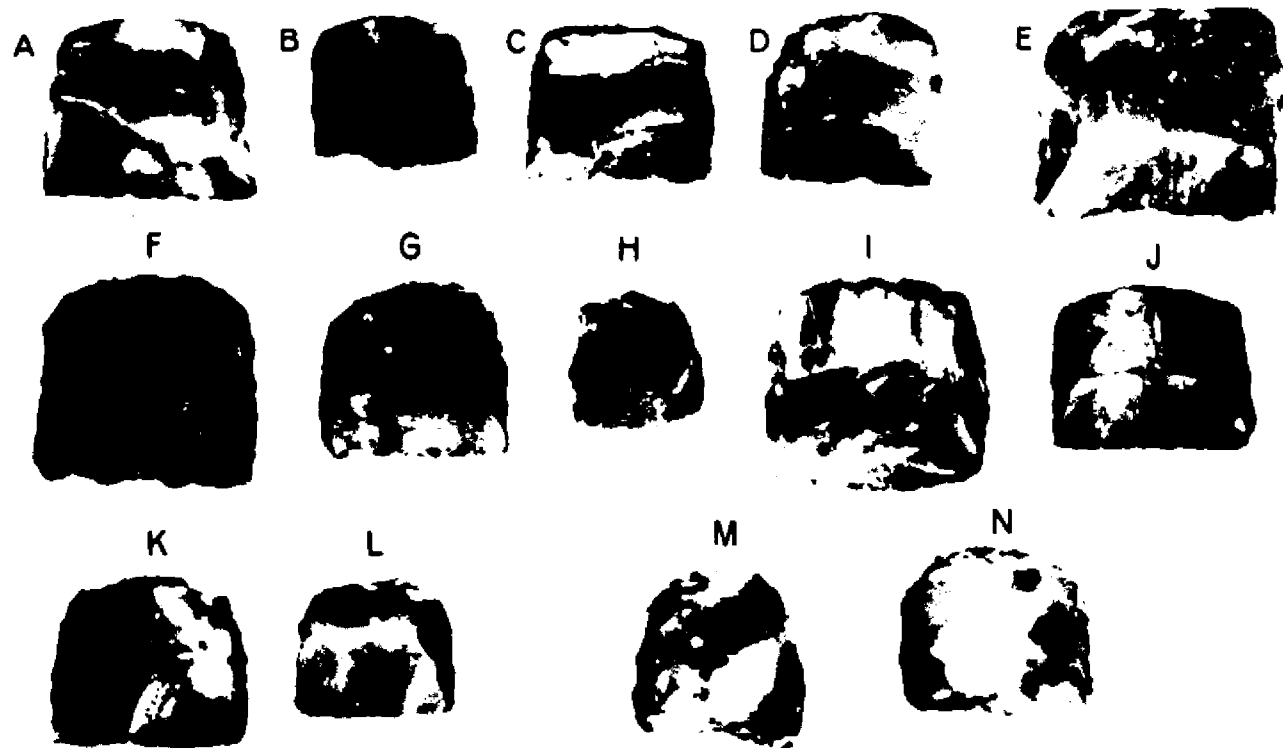


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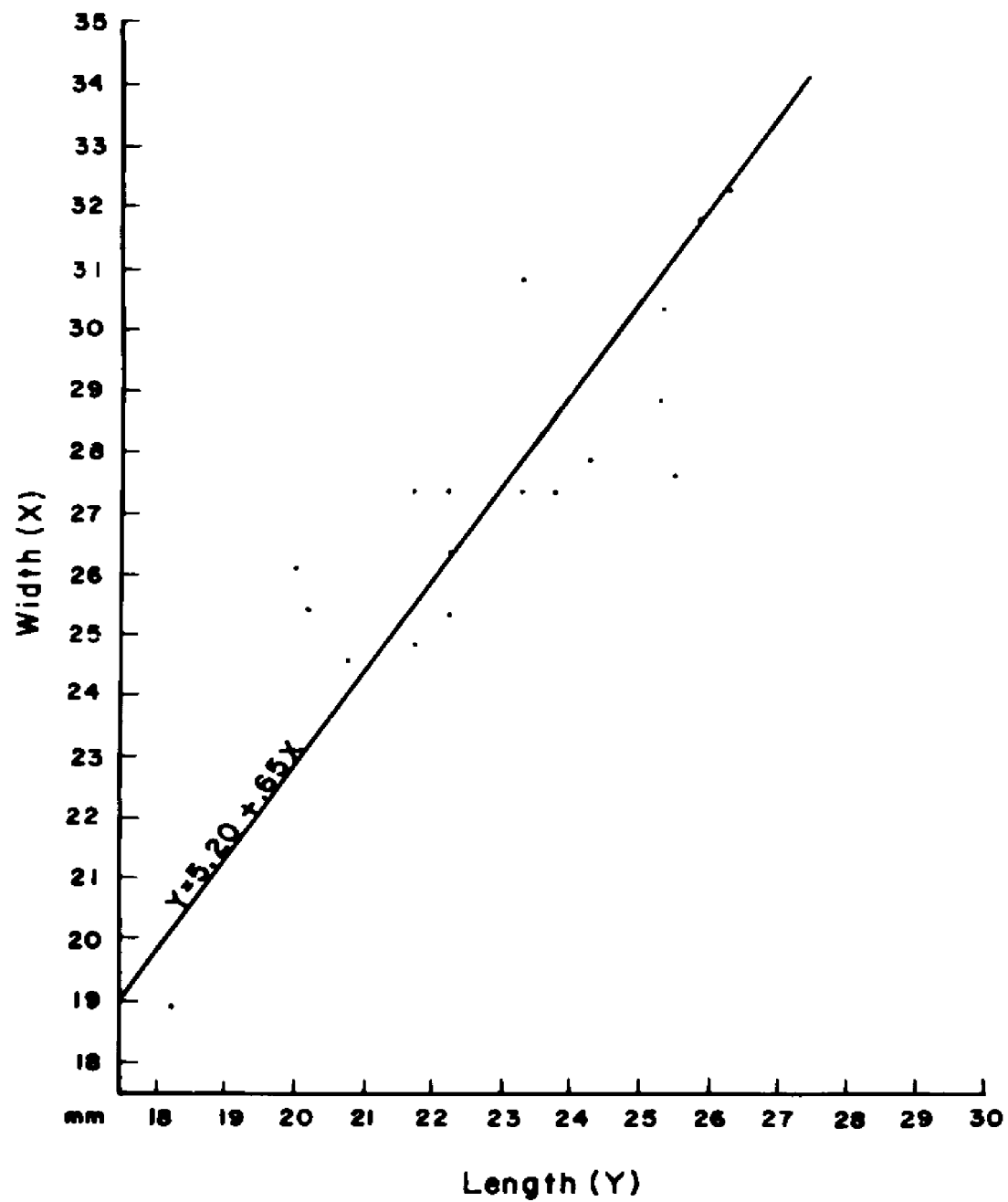


**Figure 63 Gunflints**

<b>Figure Designation</b>	<b>Taxonomic Designation</b>	<b>Catalog Number, I</b>
A	SA, T1	538
B	SA, T1	1
C	SA, T1	3199
D	SA, T1	2053
E	SA, T2	2122
F	SA, T2	2258
G	SA, T2	2317
H	SA, T2	967
I	SA, T3	219
J	SA, T3	2061
K	SA, T3	1985
L	SA, T3	659
M	SA, T4	112
N	SA, T4	2002
O	SA, Cat.1	2228
P	SA, Cat.1	2766
Q	SA, Cat.1	2717
R	SA, Cat.1	2648
S	SB	2056
T	SB	130
U	SB	3051



**Figure 64    Series A, Type 1, Gunflints,  
Dimensions of 18 Specimens**



**Figure 65    Series A, Type 2, Gunflints,  
Dimensions of 31 Specimens**



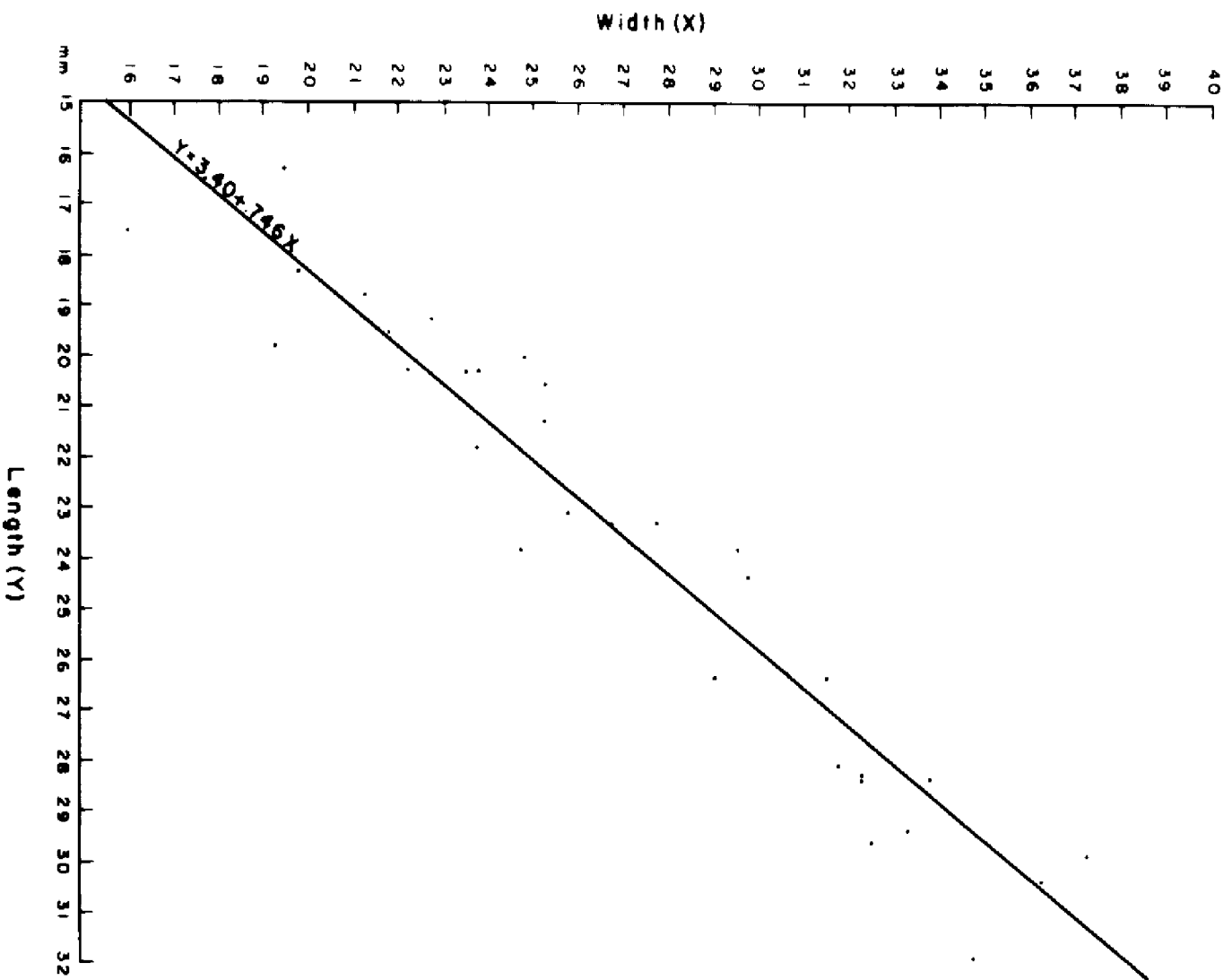
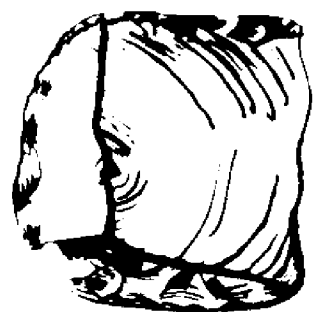


Figure 66 Gunflints (Actual Size)

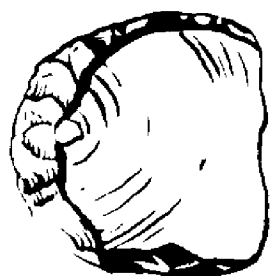
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C	SC, T1, Va	794
D	SC, T1, Va	2219
E	SC, T1, Va	379
F	SC, T1, Va	2084
G	SC, T1, Va	927
H	SC, T1, Va	2105
I	SC, T1, Vb	1357
J	SC, T1, Vb	290
K	SC, T1, Vc	1282



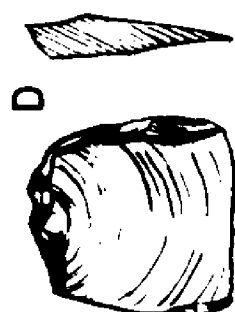
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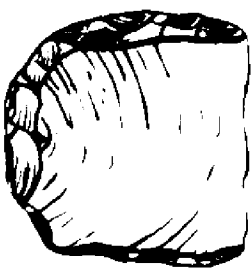
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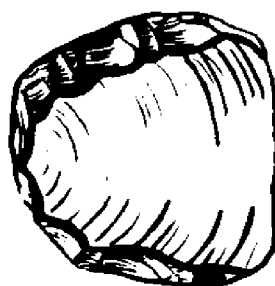
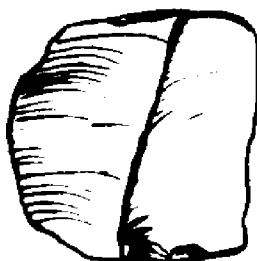
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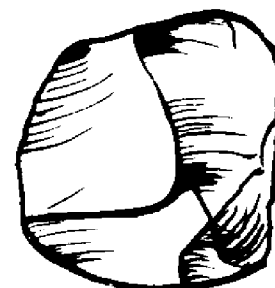
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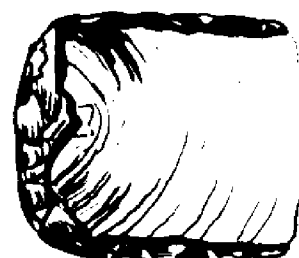
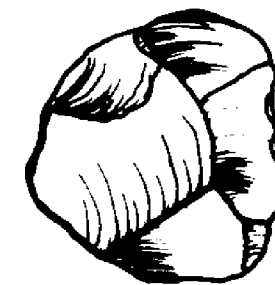
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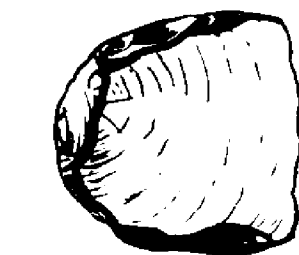
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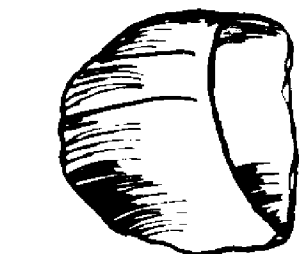
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N

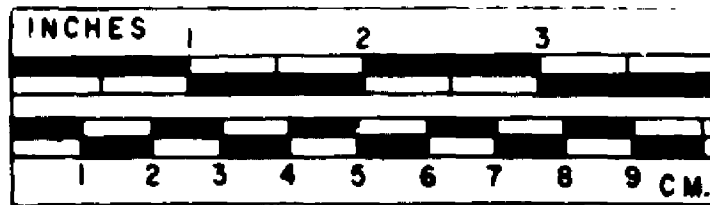
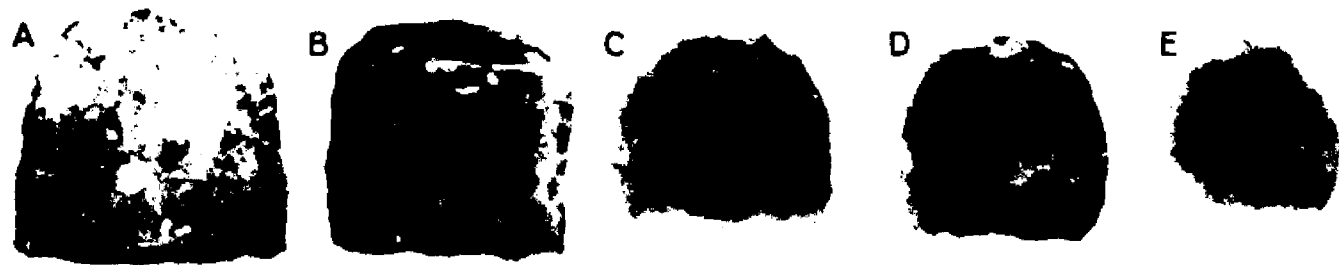


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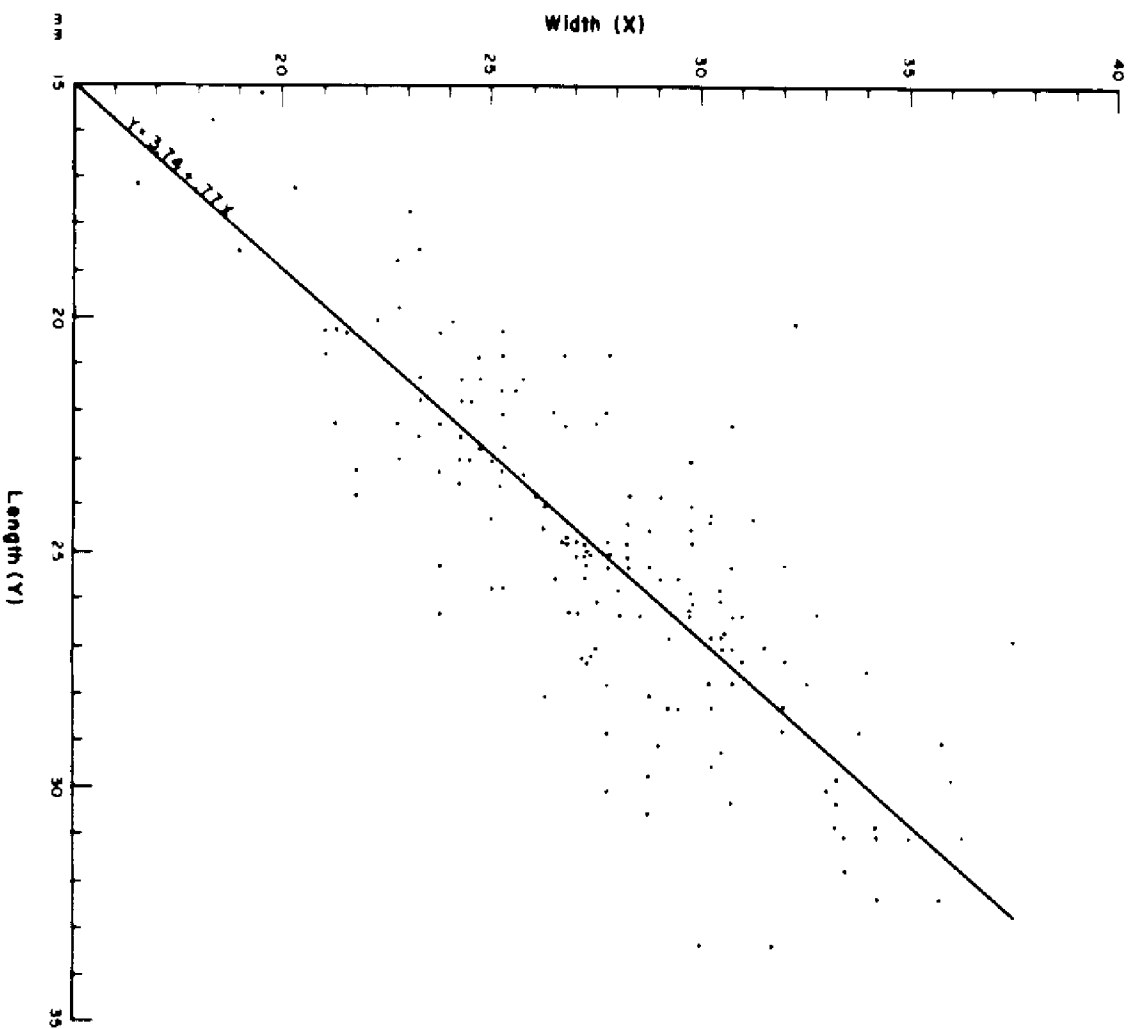


Figure 67 Gunflints

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>1</sup>
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G	SC, T1, Va	2219
H	SC, T1, Va	395
I	SC, T1, Va	2898
J	SC, T1, Va	1936
K	SC, T1, Va	2012
L	SC, T1, Va	379
M	SC, T1, Va	2105
N	SC, T1, Vb	2430
O	SC, T1, Vb	1359
P	SC, T1, Vb	2301
Q	SC, T1, Vb	290
R	SC, T1, Vc	1282
S	SC, T1, Va	2916
T	SC, T1, Va	3311
U	SC, T1, Va	1140
V	SC, T1, Va	345



**Figure 68    Series C, Type 1, Variety a,  
Gunflints, Dimensions of 177 Specimens**



**Figure 69    Series C, Type 1, Variety a, Gunflints**  
**Length and Width Relationship by Frequency**  
**of 177 Specimens**



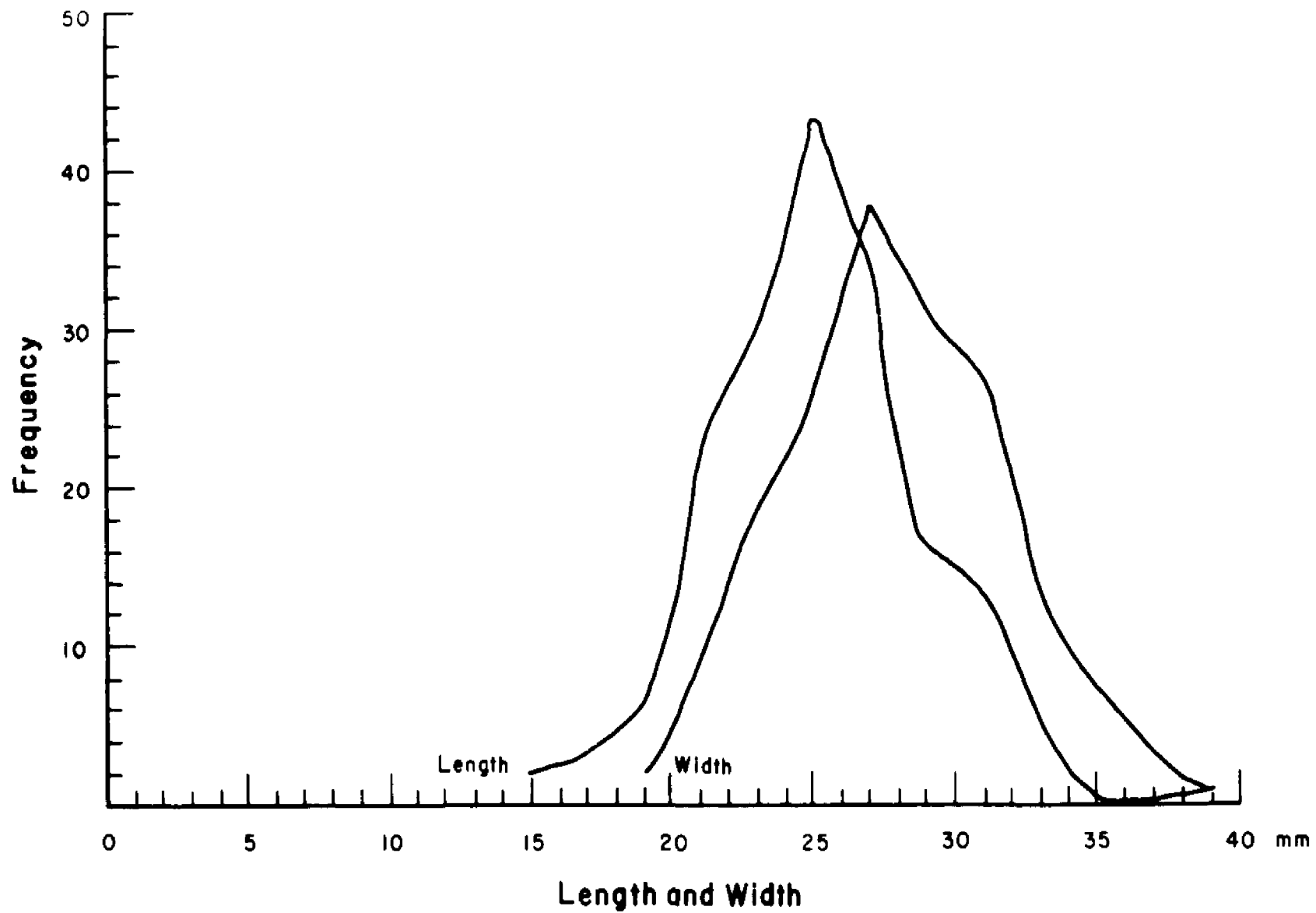


TABLE 48 Gunflint Metric Attributes in Millimeters

Taxonomic Designation	Frequency	Measured	Length		Width		Thickness Range	Length-Width $r^*$	Length-Width Ratio	Frequency, Chalk-Heels	Frequency, Burned	Frequency, Fire-steels	Frequency, Bottom Face Negative Flakes
			Range	Average	Range	Average							
SA													
T1	50	18	18.3-26.1	22.85	2.10	18.6-32.0	27.12	3.0	3.9-8.8	.85	1:1.19	4	2
T2	94	31	16.4-31.8	23.54	4.29	16.0-36.3	27.01	5.44	3.9-11.8	.95	1:1.15	9	2
T3	66	24	18.0-27.1	21.95	2.20	21.3-32.8	27.56	2.76	5.0-11.1	.77	1:1.25	6	2
T4	3	2											
SA													
Cat. 1	135												
SB	4	4											
SC													
T1													
Va	2032	177	15.9-38.2	25.11	3.71	18.3-36.4	27.85	3.98	4.0-10.4	.79	1:1.10	46	113
Vb	139	29	21.2-32.5	27.68	2.94	24.5-36.2	29.28	3.49	5.0-11.9	.70	1:1.06	14	16
Vc	4	3											12

\* $r$ , correlation coefficient.

TABLE 49 Frequency of Gunflints at Other Archaeological Sites

Site	Site Date	British	Series A	Indian	Series C	Total	Source
Kipp, N.D.	1826-	28				28	Woolworth & Wood 60:268
Gilbert, Tex.	1750-1775		13	69	32	114	Blaine 67:81-84
Posey, Okla.	1830-1840	57	7			66	Wyckoff & Barr 68:56
Alachua, Fla.	1750-1800				15	15	Goggin et al. 49:16
Santok, Conn.	1620-1750				3	3	Salwen 66:20
Woods Is., Ala.	1650-1715			8	5	13	Morrell 65:45
Ahumada, Tex.	1756-1771			4	4	8	Tunnell & Ambler 67:94
Alamo, Tex.	1740, late 19th c.	3	4	9	1	17	Greer 67:64-65
Longest, Okla.	1760-1820		3	9	5	17	Blain 67:177-178
Pearson, Tex.	1775-1830			8	1	9	Duffield & Jelks 61:56
Bell, Wis.	1680-1730			5	9	14	Wittry 63:30
Womack, Tex.	1700-1730		5	23	3	31	Harris et al. 65:341-343
Frederica, Ga.		6	74		149	229	Hamilton 64:55
Spokane House, Wash.	1810-1826	13				13	Combes 64:39

TABLE 50 Gunflint Feature Associations

Feature Number	SA T1	SA T2	SA T3	SA Cat.	SC Va	SC Vb	SA Total	SC Total
3					3			3
6					6			6
16					1			1
17					1			1
21		1		2	4	2	3	6
23					2			2
38					11			11
45					1			1
46					1			1
84				1			1	
85				1			1	
118					31	4		35
119				1			1	
133	1						1	
139					1			1
142					1			1
144					1			1
148					2			2
150			1				1	
152					1			1
209				1			1	
213			1			1	1	1
215				1	1	1	1	2
216	1	1					2	
220				1			1	
227					1			1
229					2			2
230		1			1		1	1
231					3			3
236					1			1
240						1		1
241						1		1
243					3			3
246					2			2
248					3	1		4
249					5			5
254		1			4		1	4
255		1			1		1	1
257	1				9		1	9
261	1	1					2	
262	1	1		2	17	2	4	19
265					11	1		12
267	1	1		2	23	4	4	27
259C				1	2		1	2

TABLE 50 (Cont.)

Feature Number	SA T1	SA T2	SA T3	SA Cat.	SC Va	SC Vb	SA Total	SC Total
260A				1	2		1	2
277				1			1	
279					2			2
281					4			4
293					1			1
296				1	47		1	47
297					18	1		19
299					6			6
306					1			1
310					5			5
314					2			2
315					1			1
325					2			2
328					1			1
338					1			1
348					1			1
358					11			11

## FISHHOOKS

The 1959 through 1966 excavations at Fort Michilimackinac produced a total of 219 fishhooks; 143 of these were complete specimens. Two different types of fishhooks are represented in this sample; they are distinguished by differences in the means of attaching the fishhook to the line. The most common type, secured by winding and tying the line around a flattened shank end, is represented by barbed and barbless varieties. Measurements presented in the following descriptions include length which is the distance from the shank end of attachment to the maximum point of shank curvature, and width which is the distance between the shank and the barbed hook end.

### Classification and Description:

#### Type 1    Flattened shank end

##### Variety a    Barbed.

Figure 70    A-P

217 specimens

Dimensions (141 specimens):    length range, 20.5-81.6; width range, 9.5-32.4.

T1, Va specimens have flattened shank ends. The line was attached by first winding the line around the flattened part; and then binding the line by wrapping and tying a second piece of string around the shank and line. All specimens have one barb on the hook end. Hook shafts are round in cross section; the shaft diameter varies directly in proportion to hook size. Two graphic techniques were used to study the presence of fishhook size categories: (1) a length and width scattergram, and (2) dimension-frequency graphs. Eight size categories are tentatively indicated on the scattergram; they are:

	<u>Length</u>	<u>Width</u>	<u>Frequency</u>
1.	20.5 - 26.2	9.5 - 12.6	7
2.	28.4 - 32.3	11.6 - 12.6	17
3.	33.8 - 38.0	13.4 - 18.0	13
4.	38.7 - 43.4	15.8 - 20.6	15
5.	43.4 - 47.4	18.9 - 22.1	13
6.	50.7 - 57.8	19.0 - 23.5	33
7.	58.7 - 64.9	19.9 - 26.3	35
8.	69.7 - 81.6	25.2 - 32.4	8

Several of the size categories defined, particularly in the width dimension, are not mutually exclusive. When considering both dimensions, however, these size categories do seem to be valid. The length and width frequency graphs defined a very similar set of size categories.

Variety b    No barb.

Figure 70 R

1 specimen

Dimensions (1 specimen): length, 104.6; width, 40.6.

This specimen lacks the barb which is characteristic of T1, Va fishhooks.

Type 2    Ring shank end

Variety a    No barb.

Figure 70 Q

1 specimen

Dimensions (1 specimen): length, 125.9; width, 33.2.

This specimen was produced by reshaping a large iron needle. The needle eye end has been bent to form a ring for line attachment. The hook portion of this specimen is triangular in cross section; the remainder of the shaft is round in cross section.

#### Associational Evidence:

Fishhooks are associated most frequently with the SSW and SW rowhouse units, the garden area between these units, the Priest's house area, and the French guardhouse (F. 60). Fishhooks are present, but less frequent, in the NW and NNW rowhouse units and in the British

soldier's barracks (F. 3). Specific feature associations (Table 51 ) support the above distributional evidence in indicating that fishhooks were in use throughout the period of site occupation; however, they were more frequently used during the middle to late periods of French control (ca. 1735-1760). This conclusion confirms, in part, the suggestion of Cleland (n.d.) that the subsistence of French inhabitants was based largely on non-domesticated animals such as deer, fish, and fowl.

#### Interpretations:

Fishhooks were used throughout the period of site occupation; a greater frequency of use was noted during the period between ca. 1735 and 1760. Fishhook size categories were defined, although no attempt was made to correlate these with present-day fishhook sizes.



Figure 70 Fishhooks

Figure Designation	Taxonomic Designation	Catalog Number, MS2
A	T1, Va	2570
B	T1, Va	2193
C	T1, Va	979
D	T1, Va	824
E	T1, Va	1
F	T1, Va	1335
G	T1, Va	2481
H	T1, Va	195
I	T1, Va	1150
J	T1, Va	2375
K	T1, Va	757
L	T1, Va	2314
M	T1, Va	274
N	T1, Va	3229
O	T1, Va	3437
P	T1, Va	3070
Q	T2, Va	228
R	T1, Vb	494

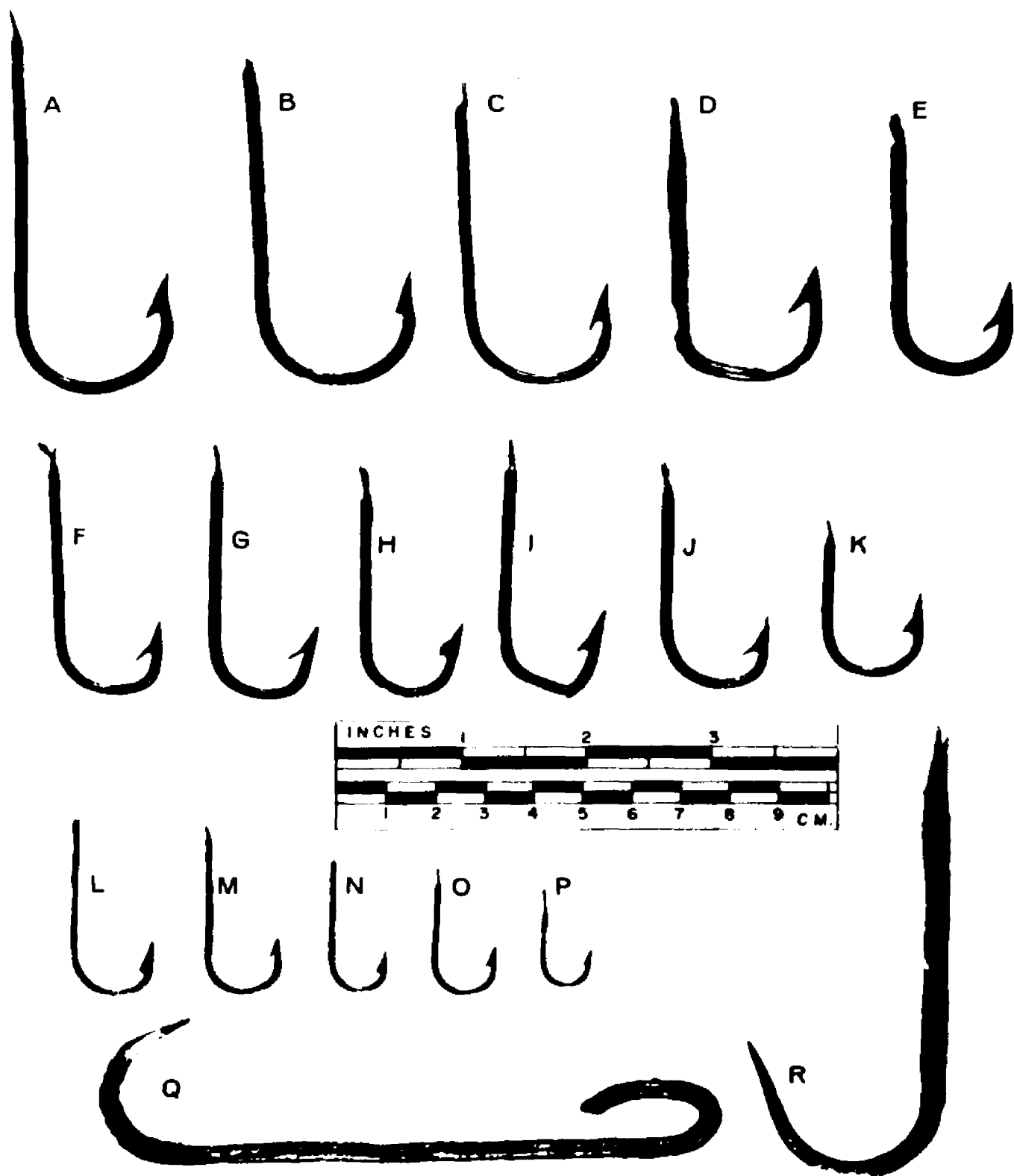


TABLE 51 Fishhook Feature Associations

Taxonomic Designation	Frequency	Feature
T1, Va	1	3
T1, Va	1	130
T1, Va	2	21
T1, Va	1	74
T1, Va	1	83
T1, Va	1	81
T1, Va	3	88
T1, Va	7	118
T1, Va	1	209
T1, Va	1	229
T1, Va	1	254
T1, Va	1	249
T1, Va	1	267
T1, Va	1	302
T1, Va	1	314
T1, Va	2	33
T1, Va	1	341

## BALE SEALS

### Classification and Description:

The bale seal is a small, circular, cast-lead object used to seal and identify the contents of packaged goods. The most common type of bale seal found at Fort Michilimackinac consists of two, thin, circular, lead disks which are connected by a narrow band of lead. A circular knob or post appears on the center of one disk and a corresponding hole is present on the other disk; two knobs and two holes are sometimes present. A seal of this type is attached to a bale or parcel of goods by first passing the knob through a hole in the parcel binder and then bending the seal so that the hole in one disk passes over the knob on the other. The seal is permanently fastened by pressing the two disks together, thereby flattening the knob and interlocking the disks. A mark is also pressed into one or both sides of the seal during this procedure. This mark may identify the manufacturer, country, or city of origin of the sealed goods. In cases where only one face is marked, the reverse side is usually incised at the same time with numbers which may signify the quality and/or quantity of contents. A second, less common, type of seal consists of a single lead disk through which wires are passed to secure the seal to a parcel. This type of seal is stamped, or cast, on both faces with manufacturer's marks. A third type of seal consists of a single lead disk to which a narrow lead band is attached. The band is bent over to join the disk and is then clamped; both faces of this type of seal are often marked.

Two attributes were recognized in the classification of bale seals: (1) type of attachment or form, and (2) decoration, which refers to any mark or symbol impressed or cast upon the lead seal. Three levels of taxonomic distinction were defined on the basis of these attributes: (1) the series--distinguished by major differences in means of attachment; (2) the type--distinguished by variations within specific means of attachment; and (3) the variety--distinguished by differences in decoration. Both series and type criteria were easily defined. Variety level distinctions, however, required the comparison of each specimen with each other specimen in order to find corresponding decorations.

In most cases, the descriptions of bale seals are supplemented with illustrations. "Obverse" refers to the mark-decorated face of a bale seal. "Reverse" refers to the opposite face which usually is incised with numbers. For purposes of reference, these distinctions are also made on seals which have marks on both faces. The description of decoration generally is brief since illustrations of most specimens are presented. The maximum diameter (Md.) of all specimens are given in millimeters. A - designates a letter or symbol which is present but which could not be identified. Comparative information and interpretations are presented after the descriptions of bale seals.

#### Series A Knob Method of Attachment

##### Type 1 Single knob attachment

Variety a Figure 71 A, 1 specimen, Md., 19.1.

Obverse: DI            Reverse: 1 fleur-de-lis  
           AMR  
           17

Variety b Figure 71 B, 1 specimen, Md., 20.6.

Obverse: 1 fleur-de-lis C, with crossed branches below  
Reverse: unidentifiable incised numbers

Variety c Figure 71 C-G, 5 specimens, distinguished on the basis of large, paired letters which appear on the obverse face.

1. Figure 71 C, Md., 23.4.  
Obverse: IL Reverse: unidentifiable incised numbers
2. Figure 71 D, Md., 22.5.  
Obverse: II, or possibly IL Reverse:  $\frac{12}{1}$
3. Figure 71 E, Md., 30.6.  
Obverse: H Reverse: unidentifiable incised numbers
4. Figure 71 F, Md., 26.3.  
Obverse: R.H Reverse:  $\frac{22}{30}$
5. Figure 71 G, Md., 24.8.  
Obverse:  $\frac{.I}{DON}$  Reverse:  $\frac{2}{24}$

Variety d Figure 71 H-K, 4 specimens, distinguished on the basis of the letters AN on the obverse face.

1. Figure 71 H, Md., 23.2.  
Obverse: A Reverse:  $\frac{1}{2}$
2. Figure 71 I, Md., 24.9.  
Obverse: AN Reverse:  $\frac{57}{24}$
3. Figure 71 J, Md., 24.2.  
Obverse: AN Reverse:  $\frac{3 \times 7}{232}$
4. Figure 71 K, Md., 26.1.  
Obverse: AN Reverse:  $\frac{654}{232}$

Variety e Figure 71 L, 1 specimen, Md., 21.6.

Obverse:	ROLL	Reverse:	VIALE
	A		-ES
	ONT		173

See also Series A, Type 2, Variety a for a similar mark.

Variety f Figure 71 M, 1 specimen, Md., 20.6.

Obverse:	3, 5-sided stars and 1 fleur-de-lis
Reverse:	162

Variety g Figure 72 A, 1 specimen, Md., 20.7.

Obverse:	ROV
	BAIX
Reverse:	circular quartered crest with 8 diamonds in diagonally opposite quarters, and 7 dots in diagonally opposite quarters; a row of 5 fleur-de-lis appears above the crest; a row of 3 diamonds appears at the side of the crest.

Variety h Figure 72 B, 1 specimen, Md., 22.0.

Obverse:	indistinguishable	Reverse:	10197
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Variety i Figure 72 C, 1 specimen, Md., 25.7.

Obverse:	cross symbol	Reverse:	$\frac{190}{22.2}$
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Variety j Figure 72 D-F, 3 specimens, distinguished on the basis of similar marks.

1. Figure 72 D, Md., 21.5.

Obverse:	LLE	Reverse:	none
	AR_VE		
	ON_ROLE		
	BOISSEON		
	73		

2. Figure 72 E, Md., 22.7.

Obverse:	VISLI	Reverse:	none
	MAR_V		
	OL		

3. Figure 72 F, Md., 24.4.

Obverse:	BOISSEZO_ and 1 fleur-de-lis.
Reverse:	none

Variety k Figure 72 G-N, 8 specimens, distinguished on the basis of similar marks composed of a bird (cock) symbol and/or the name SAMET.

1. Figure 72 G, Md., 19.0.

Obverse: 4 fleur-de-lis

Reverse: cock symbol with 3 fleur-de-lis above

2. Figure 72 H, Md., 20.0.

Obverse: cock symbol with 3 fleur-de-lis above

Reverse: Z  
DE  
OROL  
OE  
AME

3. Figure 72 I, Md., 21.3.

Obverse: cock symbol with 3 fleur-de-lis above

Reverse: crossed branches on border, possibly 3 fleur-de-lis in center

4. Figure 72 J, Md., 20.7.

Obverse: none

Reverse: cock symbol with 3 fleur-de-lis above and letters MET on border

5. Figure 72 K, Md., 21.0.

Obverse: cock symbol with 3 fleur-de-lis above

Reverse: none

6. Figure 72 L, Md., 18.4.

Obverse: 3 fleur-de-lis

Reverse: cock symbol with 3 fleur-de-lis above

7. Figure 72 M, Md., 21.6.

Obverse: cock symbol with 3 fleur-de-lis above

Reverse: TROL  
DE  
SAME



## 8. Figure 72 N, Md., 22.0.


Obverse: none  
 Reverse: ITE  
           DE.  
           NTKOLLE  
           SAMET

Variety l Figure 72 O, 1 specimen, Md., 22.5E.

Obverse: dog or rampant lion symbol  
 Reverse: 2 fleur-de-lis

Variety m Figure 72 P-Q, Figure 73 A-B, 4 specimens, distinguished on the basis of numeral style.

## 1. Figure 72 P, Md., 20.8.

Obverse: I  D.E  
           SC  
 Reverse: 32.AV with 1 fleur-de-lis below.

## 2. Figure 72 Q, Md., 21.6.

Obverse: E  
           CI  
 Reverse: 1  2

## 3. Figure 73 A, Md., 21.8.

Obverse: DE  
           TOT  
 Reverse: 31.A  
           3  4

## 4. Figure 73 B, Md., 21.6.

Obverse: NIO  
           DE  
 Reverse: 32.A  
           1  2

Variety n Figure 73 C-G, 4 specimens, distinguished on the basis of similar marks.

## 1. Figure 73 C, Md., 18.7.

Obverse: 6 men in a boat, facing right, with 2 hearts with piercing arrow above  
 Reverse: 1492

## 2. Figure 73 D, Md., 22.6.

Obverse: 4 men in a boat, facing right, with 2 hearts  
with piercing arrow above

Reverse: 1163  
31

## 3. Figure 73 E, Md., 21.8.

Obverse: 3 men in a boat, facing right, with 2 hearts  
with piercing arrow above, and with 2, 5-pointed  
stars above, indistinguishable letters on por-  
tion of the border

Reverse: 2117

## 4. Figure 73 F, Md., 21.4.

Obverse: 4 men in a boat, third from left standing and  
facing front; probable pierced hearts above

Reverse: 3-1

## 5. Figure 73 G, Md., 24.4.

Obverse: 4 men in a boat, with 3 men on the left facing  
right, and one on the right facing left; 2  
hearts with piercing arrow above; 2 5-sided  
stars above

Reverse: none

Variety o Figure 73 H, 1 specimen, Md., 24.6.

Obverse: .THO  
WILSO  
& COM  
BO-

Reverse: 221  
23

Variety p Figure 73 I, 1 specimen, Md., 26.8.

Obverse: none      Reverse: cross symbol; the letters VRRE  
appear on the border

Variety q Figure 73 J, 1 specimen, Md., 24.3.

Obverse: symbol of stone tower with 3 five-sided stars above;  
letters E.ET. MARTIN A appear around border

Reverse: 313  
242

Variety r Figure 73 K-M, 3 specimens, distinguished on the basis of similar name marks.

1. Figure 73 K, Md., 25.5.

Obverse:	PACKE	Reverse:	$\frac{16}{22}$
	ONDO		

2. Figure 73 L, Md., 26.2.

Obverse:	PACKER	Reverse:	none
	LONDON		

3. Figure 73 M, Md., 24.6.

Obverse:	CK	Reverse:	$\frac{5}{212}$
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Variety s Figure 73 N, 1 specimen, Md., 19.8.

Obverse:	AD	Reverse:	T.V
			ASA

Variety t Figure 73 O, 1 specimen, Md., 20.6.

Obverse:	tree symbol with 1 five-pointed star on each side; letters GI on border
Reverse:	093

Variety u Figure 74 A-B, 2 specimens, distinguished on the basis of similarity in letters

1. Figure 74 A, Md., 18.8.

Obverse:	3 fleur-de-lis	Reverse:	3 fleur-de-lis in center, bordered by L.AVNE MAZAMET
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2. Figure 74 B, Md., 26.6.

Obverse:	2 fleur-de-lis in center, bordered by .E CARLA_E
Reverse:	none

Variety v Figure 74 C, 1 specimen, Md., 17.6.

Obverse:	lamb with staff symbol in center, 3 fleur-de-lis above and bordered by -EN. MANVYAC
Reverse:	none

Variety w Figure 74 D, 1 specimen, Md., 22.4.

Obverse: Symbol of bird on crossed branches

Reverse: 3891

Variety x Figure 74 E, 1 specimen, Md., 27.8.

Obverse: 2 fleur-de-lis, bordered by RCA\_\_ATI I...1733..ECB

Reverse: none

Variety y Figure 74 F, 1 specimen, Md., 38.6.

Obverse: Letters F M in the center with bar between letters which forms a W below the letters; the bar is crossed above the letters

Reverse: 
$$\begin{array}{r} 1 \\ 22 \overline{1} \\ 2 \end{array}$$

Variety z Figure 74 G, 1 specimen, Md., 27.5.

Obverse: DON      Reverse: 
$$\begin{array}{r} 31 \\ 43 \end{array}$$

Variety aa Figure 74 H, 1 specimen, Md., 26.4.

Obverse: LON      Reverse: none

Variety bb Figure 74 I, 1 specimen, Md., 28.2.

Obverse: none

Reverse: HONORE  
SCELLIER, with 1 fleur-de-lis above and below letters

Variety cc (Not illustrated) 1 specimen, Md., 25.8.

Obverse: ESCVRE  
T.OLIER  
EGOTIANS  
MONTAY  
BAN

Reverse:  $\angle$  17

Variety dd (Not illustrated) 1 specimen, Md., 30.3.

Obverse: large WA with bar between letters which forms a double loop below the letters

Reverse: 2415

Series A, Type 1, Category 1

This category consists of specimens which are represented by only one disk--the disk which bears the hole or ring. The 22 specimens are described individually. The obverse face is represented in all cases. In addition, there are 33 specimens which are not marked or on which marks appear but are indistinguishable.

1. Figure 74 J, Md., 23.5.

Symbol represented by elongate double loop

2. Figure 74 K, Md., 20.6.

ION  
N  
DUR  
U

3. Figure 74 L, Md., 24.3.

Symbol composed of superimposed Vs, 1 of which is upside down

4. Figure 74 M, Md., 23.4.

IAROV.DE.IDN around border

5. Figure 74 N, Md., 20.9.

AVDE and 1 fleur-de-lis around border

6. Figure 74 O, Md., 21.6.

GEOR LD. LONDON. around border

7. Figure 74 P, Md., 26.9.

P  
DON

8. Figure 74 Q, Md., 21.4.

E.MA around border

9. Figure 74 R, Md., 25.2.

Possible letter T

10. Figure 74 S, Md., 22.8.

Q E.D. CON

11. Figure 75 A, Md., 24.9.

99

12. Figure 75 B, Md., 29.2.

RIOVE DE ASSON around border

13. Figure 75 C, Md., 29.4.

E. INSPECTION D around outside border  
IDRE around inner border

14. Figure 75 D, Md., 21.4.

2 fleur-de-lis

15. Figure 75 E, Md., 22.2.

LE  
T

16. Figure 75 F, Md., 27.4.

unidentifiable symbols

17. Figure 75 G, Md., 23.5.

Symbols, see illustration

18. Figure 75 H, Md., 19.5.

RC  
VIL with 1 fleur-de-lis below letters  
RET

19. Figure 75 I, Md., 17.9.

CA  
NE  
SSO--- IS

20. Figure 75 J, Md., 23.1.

F BPIEV around border

21. Figure 75 K, Md., 24.8.

AUD AKEFIELD around border; probably Wakefield

22. (Not illustrated), Md., 33.4.

RICHARD & IOHN. -L- RS. IN WAKEFIELD around border; portion  
of crest in center of seal

Series A, Type 1, Category 2

This category consists of specimens which are represented by the disk which bears a knob. The 8 specimens are described individually. The reverse face is represented in all cases. In addition, there are 13 specimens which are unmarked or on which marks appear but are indistinguishable.

1. Figure 75 L, Md., 27.5.

$$\frac{9}{22}$$

2. Figure 75 M, Md., greater than 20.0.

Unknown marks

3. Figure 75 N, Md., 28.6.

$$\frac{36}{>7}$$

4. Figure 75 O, Md., 28.2.

$$\frac{340}{2 \text{ } \swarrow}$$

5. Figure 75 P, Md., 21.2.

$$19 \text{ } \swarrow 9$$

6. Figure 75 Q, Md., 23.7.

$$\frac{177}{2.3}$$

7. Figure 75 R, Md., 19.9.

$$\frac{497}{2 \text{ } \checkmark}$$

8. Figure 75 S, Md., 23.2.

$$\frac{11}{20}$$

Series AType 2 Double knob attachment

This type of seal is distinguished from Type 1 seals by the presence of 2 knobs on a disk, rather than 1. The principle of attachment is the same for both types.

Variety a Figure 75 T, 1 specimen, Md., 21.6.

Obverse: ROLL  
DE.  
FONTENAY

Reverse: 3 fleur-de-lis

Variety b Figure 75 U, 1 specimen, Md., 19.9.

Obverse: none

Reverse: ALMANO  
COMMUNE  
ONZE  
TAILLS

Variety c Figure 75 V, 1 specimen, Md., 17.5.

Obverse: none

Reverse: RAL  
D.E  
AZ ME

Variety d Figure 75 W, 1 specimen, Md., 23.7.

Obverse: ANU  
CI  
CO plus 12 unknown letters

Reverse: unknown design

Series B Disk-Band Method of Attachment

Series B bale seals consist of a single lead disk to which a narrow lead band is attached. The band is bent over to join the disk and is then clamped. Series B seals commonly exhibit marks on both faces. Type differences are not distinguishable within Series B bale seals. Obverse refers to the disk face against which the lead band is pressed although this is not recognizable in all cases.

Variety a Figure 76 A, 1 specimen, Md., 16.0.

Obverse: IV- LLEE F oriented in a circle about the center of the specimen

Reverse: 3 fleur-de-lis plus the letters ADAI-



Variety b Figure 76 B, 1 specimen, Md., 14.3.

Obverse: FRR O-RY around the border

A2

Reverse: FILS in the seal center, with 1 fleur-de-lis below  
indistinguishable mark

Variety c Figure 76 C, 1 specimen, Md., 13.2.

Obverse: DONLE- around border

A.2

Reverse: FIL in center  
3 fleur-de-lis

Variety d Figure 76 D, 1 specimen, Md., 12.9.

Obverse: -AN.CO around border, 3 fleur-de-lis in center  
Reverse: none

Variety e Figure 76 E, 1 specimen, Md., 15.3.

Obverse: possible symbol of a bird perched on a branch in  
center of seal; unidentified letters surround a  
portion of this symbol  
Reverse: 4 unidentified symbols

Variety f Figure 76 F, 1 specimen, Md., 16.8.

Obverse: symbol of crown  
Reverse: none

Variety g Figure 76 G-H, 2 specimens, distinguished on the  
basis of the same name.

1. Figure 76 G, Md., 12.1.

Obverse: ABR with 1 fleur-de-lis below  
Reverse: BAS  
FI- with 1 fleur-de-lis above

2. Figure 76 H, Md., 16.3.

Obverse: N-ABRIQVE around the border, with 1 fleur-de-lis  
in center  
Reverse: AS-  
FIL.DE with 1 fleur-de-lis above letters  
A

Variety h Figure 76 I-O.

Variety h is represented by 11 specimens which exhibit the same symbol: a circle encloses a palm tree and an alligator extends across the tree trunk. The letters COI appear on the left side of the tree, and the letters NE appear on the right. This symbol appears on seals which bear the marks of 5 different manufacturers. The first 3 illustrations (Figure 76 I, J-K) bear the same name. The following 3 (Figure 76 L-M) bear different names. Figure 76 N-O are 2 representative specimens of 6 seals which bear the same manufacturer's last name but different first names.

## 1. Figure 76 I, Md., 20.7.

Obverse: A.2

FILS in center; POUR LEST- around border; an  
additional A.2 is noted on one edge  
ILS

Reverse: palm symbol

## 2. Figure 76 J, Md., 15.3.

Obverse: A.2 in center, surrounded by POUR LESTRANGER  
FILS

Reverse: palm symbol

## 3. Figure 76 K, Md., 16.1.

Obverse: A.3 in center, surrounded by POUR -LSIRANGER  
FILS

Reverse: palm symbol

## 4. Figure 76 L, Md., 14.1.

Obverse: LOVE around center

Reverse: palm symbol

## 5. Figure 76 M, Md., 13.3.

Obverse: PIL around center, --- in center

Reverse: palm symbol

## 6. Figure 76 N, 3 specimens, Md., of 1 specimen, 16.2.

Obverse: A2 FIL in center, surrounded by HENRY LARGUIER  
& COMP

Reverse: palm symbol

## 7. Figure 76 O, 3 specimens, Md., of 1 specimen, 13.9.

Obverse: PIERRE LARGU--R around center, A2FILS in center

Reverse: palm symbol

Series C Wire Method of AttachmentType 1 Single wire

All Type 1 specimens exhibit a single perforation on a plane parallel to the seal diameter, presumably through which an attachment wire was passed.

Variety a Figure 76 P-R

Variety a is represented by 6 specimens which exhibit the same symbol. This symbol is identical in most cases to that defined for Series B, Type 1, Variety h specimens. The first 2 specimens (Figure 76 P-Q) represent different manufacturers. The remaining 4 specimens (Figure 76 R) represent the same manufacturer.

## 1. Figure 76 P, Md., 14.9.

Obverse: symbol of bird in center, with a C, and 2, 5-pointed stars above; ETVIAL- OLOMB around border

Reverse: palm symbol; this specimen differs from those noted above in that the letters COINE are represented by a C and an N on either side of the palm trunk; the letters DE NISME--ACT encircle the seal edge.

## 2. Figure 76 Q, Md., 14.9.

Obverse: POUR  
LESTRAN in center, surrounded by BODET ET IAL--  
GEP

Reverse: palm symbol

## 3. Figure 76 R, 4 specimens, Md. (1 specimen), 15.8.

Obverse: H.LARGUIER & COMPE. around center, with 1 fleur-de-lis in center

Reverse: palm symbol

See also Series B, Type 1, Variety h, no. 6; 1 other specimen is identical to the 1 described; 2 other specimens bear the letters FORS instead of a fleur-de-lis on the obverse face.

Variety b Figure 76 S, 1 specimen, Md., 10.1.

Obverse: RO  
--R

Reverse: A  
AM  
EN

Variety c Figure 76 T, 1 specimen, Md., 16.0.

Obverse: CORP Reverse: unidentifiable letters  
This specimen is nearly triangular in shape.

Variety d Figure 76 U, 1 specimen, Md., 13.2.

Obverse: leaf (?) motif symbol in center surrounded by  
HERENEE

Reverse: LYC in center, surrounded by (EB)? ---

Variety e Figure 76 V-X, 3 specimens, distinguished on the  
basis of similarity in mark design.

1. Figure 76 V, Md., 16.1.

Obverse: Rampant lion with 3 fleur-de-lis above

Reverse: -----  
--  
-----

2. Figure 76 W, Md., 13.2.

Obverse: rampant lion with 3 fleur-de-lis above

Reverse: ARD in center, 1 fleur-de-lis above

3. Figure 76 X, Md., 13.2.

Obverse: rampant lion Reverse: D

and 3 fleur-de-lis

-AND

Variety f Figure 76 Y, 1 specimen, Md., 13.0.

Obverse:	DE	Reverse:	AS
	VSSV		A
	I--D		--

Variety g Figure 76 Z, 1 specimen, Md., 12.1

Obverse: A2

FIL in center, surrounded by RLEAN

Reverse: R-RES. CORBERT around center, 3 symbols,  
possibly fleur-de-lis in center

Type 2 Double wire

Variety a Figure 77 A-C, 19 specimens, distinguished on the basis of the same design element.

1. Figure 77 A, Md., 16.3.

Obverse: crossed wreath around the letters C.D.I.

3 C

Reverse: crown symbol

2. Figure 77 B, Md., 11.8.

Same description as no. 1 above

3. Figure 77 C, Md., 16.8.

Same description as no. 1 above

Variety b Figure 77 D, 1 specimen, Md., 20.2.

Obverse: encircled 3 in center, surrounded by M.-

Reverse: none

Variety c Figure 77 E-G, 5 specimens; distinguished on the basis of the same mark; there are 2 styles of Variety c bale seals, the first (4 specimens) which exhibit the letters

M. C.

X

R. R.

and the second (1 specimen) which exhibits the letters

M. C.

R. R.

Two specimens of the first style and the single second style specimen are illustrated.

1. Figure 77 E, Md., 14.7.

Obverse: M. C.

Reverse: X

X

R. R.

## 2. Figure 77 F, Md., 16.1.

Obverse: same as no. 1

Reverse: X Note: the two other specimens of this  
95 style exhibit respectively, 26X  
and X on the reverse faces.

102

## 3. Figure 77 G, Md., 16.5.

Obverse: M. C.

Reverse: 24

R. R.

Variety d (Not illustrated), 1 specimen, Md., 19.8.

Obverse: none

Reverse: Q.B in center, with 1 fleur-de-lis and 2 stars  
superimposedBale Seal Category 1

This category includes 4 specimens which are questionable bale seals and which are described as follows:

## 1. Figure 77 H, 3 specimens, Md. (1 specimen), 10.1.

Obverse: .P.

Reverse: A.2

LE

FIL

ROY

Two additional specimens define the same style. These specimens are very thin disks with no attachments.

## 2. Figure 77 I, 1 specimen, Md., 19.7.

Obverse: crest (see illustration)

Reverse: none

This specimen exhibits a reverse face which is smaller in diameter than the obverse face.

### Discussion:

Three distinct series of bale seals have been distinguished on the basis of different types of attachment. Series A seals are represented by 136 specimens; of this total, 90 had marks or symbols. The remaining 46 seals have been placed in Series A, Categories 1 and 2: specimens which did not bear marks or symbols. Series B is represented by 19 specimens and Series C by 39 specimens. Four seals were assigned to a questionable bale seal category. From a total of 198 specimens, 152 exhibited marks or symbols; 104 of these could be assigned a specific country of origin (Table 53 ). The 83 specimens of French origin were identified by the presence of French symbols, such as the fleur-de-lis or words. The 21 British specimens were identified by the presence of English words. British seals were represented by only Series A specimens; French seals appear in all three formal categories.

Series A seals were produced by casting. A mark or symbol was stamped on the obverse face of a seal by a clamping device which also functioned as a die. The reverse face was hand incised with numbers in most cases. The majority of Series A seals exhibit cord or fabric-like impressions on their inner surfaces which is evidence of attachment to cloth or woolen goods. Series B seals were probably cast, although they could have been easily produced by cutting a circular disk from a sheet of lead. Series B seals were stamped on both faces with marks or symbols by a die-clamp. Series C seals were first cast and then clamped with a die which imparted a mark on both faces and which compressed the seal in order to secure the attached wire.

Several bale seal distribution maps were plotted as an aid in studying the significance of distributional variation between different formal types of bale seals and between seals identified as French or British. Series A seals do not occur in specific clusters at the site but are distributed in approximately equal densities in most areas where they are present. Series A specimens are nearly absent in the SW and NW rowhouse units and occur in low densities within the earliest French stockade (F. 5) and in British military structures. The absence of Series A specimens within the two rowhouse units is enigmatic. The two potential reasons for this absence (1. absence of commercial activities within the rowhouse units; and 2. absence of bale seals at the site during the period of rowhouse use) are not supported by other evidence. The limited sample of Series B seals appears to have a random distribution except for a small cluster at the west end of the garden area between the two south rowhouse units. Series C seals appear to have a random distribution south of the 220 grid line. Series C seals cluster in one area north of this line which is within and to the east of the northern section of the British barracks (F. 3). The association in this area is indefinite, however, since Feature 3 overlies an earlier French rowhouse unit, Feature 27. This latter association is the most reasonable.

French bale seals were noted in one major area of concentration which is within and between the western sections of the two south rowhouse units. French specimens are noticeably infrequent within the bounds of the original French stockade (F. 5) and appear randomly elsewhere. The distribution of the small sample of British seals is random.



Eighteen seals (17 French and 1 British) were found in feature contexts (see Table 52 for specific feature associations). The features represented are primarily of French association, although several exhibit mixed French and British assemblages.

The comparative evidence for bale seals is inadequate for specific dating purposes. Cotter and Hudson (1957: 95) report Series A, Type 1 seals from Jamestown, Va., although information on marks or symbols is not presented. Nystuen and Lindeman (1969: 26) also report Series A, Type 1 seals from Fort Renville, Minn. Calver and Bolton (1950: 26) describe two specimens from Fort Ticonderoga, N.Y., which resemble the single Series A, Type 1 specimen from Fort Michilimackinac. These seals identify the manufacturer as OLIER and the place of manufacture as MONTAUBAN.

#### Interpretations:

The majority of seals recovered at the site were identified as French, although the presence of British specimens and distributional evidence indicates that bale seals were in use during both the French and British periods of control. Significant distributional differences were not observed between specific seal forms through time or space. Bale seals did not occur in specific clusters which could be interpreted as loci of commercial activities.

TABLE 52 Bale Seal: Feature Associations

Taxonomic Designation	Frequency	Feature	Nationality of Use
SA, T1, Va	1	85	F
Vk	1	296	F
Vn	1	82	N
Vo	1	85	B
Vt	1	262	N
Vy	1	248	N
Cat. 1	1	102	N
Cat. 1	1	249	N
Cat. 1	1	88	N
Cat. 1	1	94	N
Cat. 1	1	72	F
Cat. 1	2	267	N
Cat. 1	1	83	N
SB, T1, Vh	1	88	F
SC, T1, Ve	1	249	F
Vg	1	3	F
T2, Va	1	267	F

TABLE 53 Bale Seal Interpretations

Taxonomic Designation		Nationality of Use	Taxonomic Designation		Nationality of Use
SA, Tl,	Va	F	Vm, No. 1		F
	Vb	F	No. 2		F
	Vc, No. 1	B	No. 3		F
	No. 2	B	No. 4		F
	No. 3	B	Vn, No. 1		N
	No. 4	B	No. 2		N
	No. 5	B	No. 3		N
	Vd, No. 1	B	No. 4		N
	No. 2	B	No. 5		N
	No. 3	B	Vo		B
	No. 4	B	Vp		N
	Ve	F	Vq		B
	Vf	F	Vr, No. 1		B
	Vg	F	No. 2		B
	Vh	N	No. 3		B
	Vi	N	Vs		N
	Vj, No. 1	F	Vt		N
	No. 2	F	Vu, No. 1		F
	No. 3	F	No. 2		F
	Vk, No. 1	F	Vv		F
	No. 2	F	Vw		N
	No. 3	F	Vx		F
	No. 4	F	Vy		N
	No. 5	F	Vz		B
	No. 6	F	Vaa		B
	No. 7	F	Vbb		B
	No. 8	F	Vcc		F
	Vl	F	Vdd		N

TABLE 53 (Cont.)

Taxonomic Designation		Nationality of Use	Taxonomic Designation		Nationality of Use
SA, T1, Cat. 1,	No. 1	N	T2,	Va	F
	No. 2	N		Vb	F
	No. 3	N		Vc	F
	No. 4	N		Vd	N
	No. 5	F	SB, T1,	Va	F
	No. 6	B		Vb	F
	No. 7	B		Vc	F
	No. 8	N		Vd	F
	No. 9	N		Ve	N
	No. 10	N		Vf	N
	No. 11	N		Vg, No. 1	F
	No. 12	F		No. 2	F
	No. 13	B		Vh, No. 1	F
	No. 14	F		No. 2	F
	No. 15	N		No. 3	F
	No. 16	N		No. 4	F
	No. 17	N		No. 5	F
	No. 18	F		No. 6	F
	No. 19	N		No. 6	F
	No. 20	N		No. 6	F
	No. 21	B		No. 7	F
	No. 22	B		No. 7	F
SA, T1, Cat. 2,	No. 1	N	SC, T1,	No. 7	F
	No. 2	N		Va, No. 1	F
	No. 3	N		No. 2	F
	No. 4	N		No. 3	F
	No. 5	N		No. 3	F
	No. 6	N		No. 3	F
	No. 7	N		No. 3	F
	No. 8	N		Vb	N

TABLE 53 (Cont.)

Taxonomic Designation	Nationality of Use
Vc	N
Vd	N
Ve, No. 1	F
No. 2	F
No. 3	F
Vf	N
Vg	F
T2, Va, No. 1	F
No. 2	F
No. 3	F
Vb	N
Vc, No. 1	N
No. 2	N
No. 2	N
No. 2	N
No. 3	N
Vd	F
Cat. 1, No. 1	F
No. 1	F
No. 1	F
No. 2	N

Figure 71 Bale Seals (Actual Size)

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	SA, T1, Va	1416
B	Vb	2994
C	Vc No. 1	2027
D	Vc No. 2	1332
E	Vc No. 3	2739
F	Vc No. 4	1706
G	Vc No. 5	988
H	SA, T1, Vd No. 1	1
I	Vd No. 2	349
J	Vd No. 3	647
K	Vd No. 4	126
L	Ve	1558
M	Vf	1218

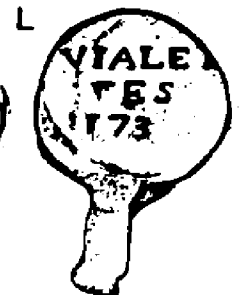
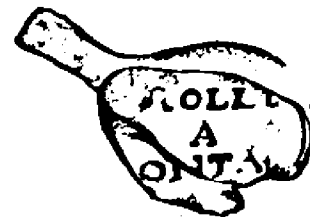
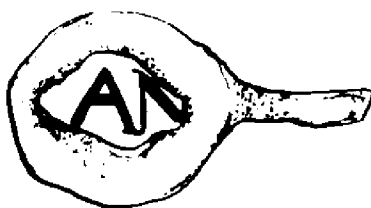
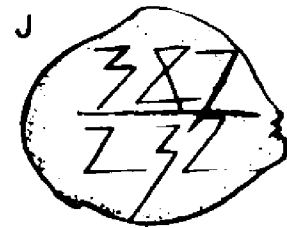
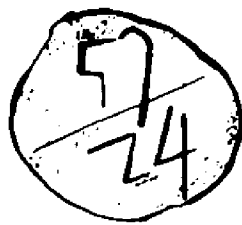
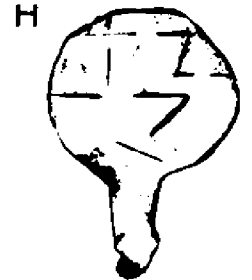
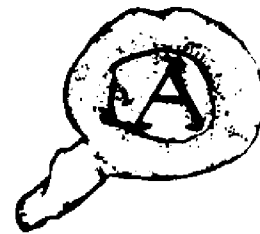
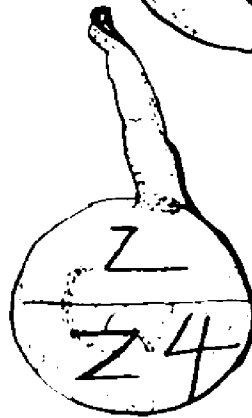
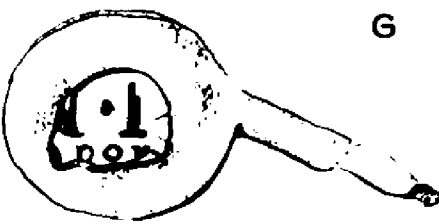
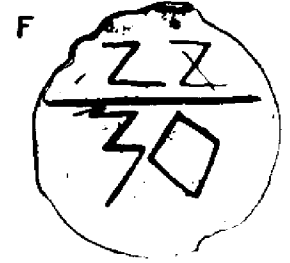
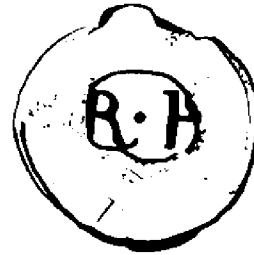
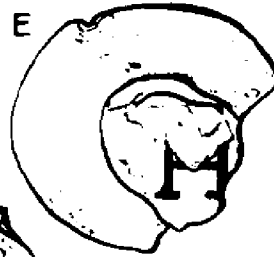
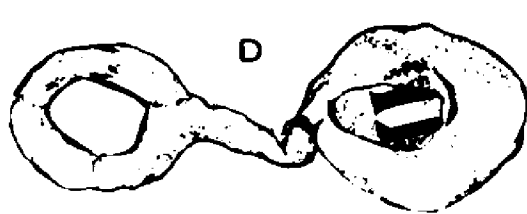
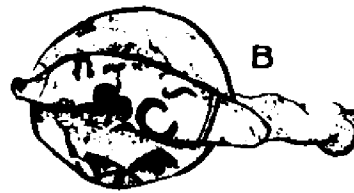
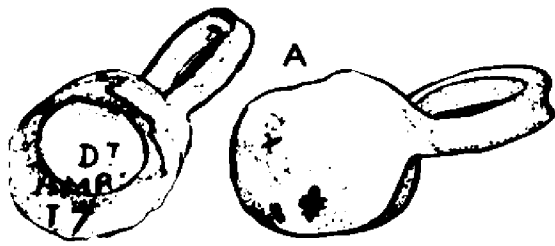
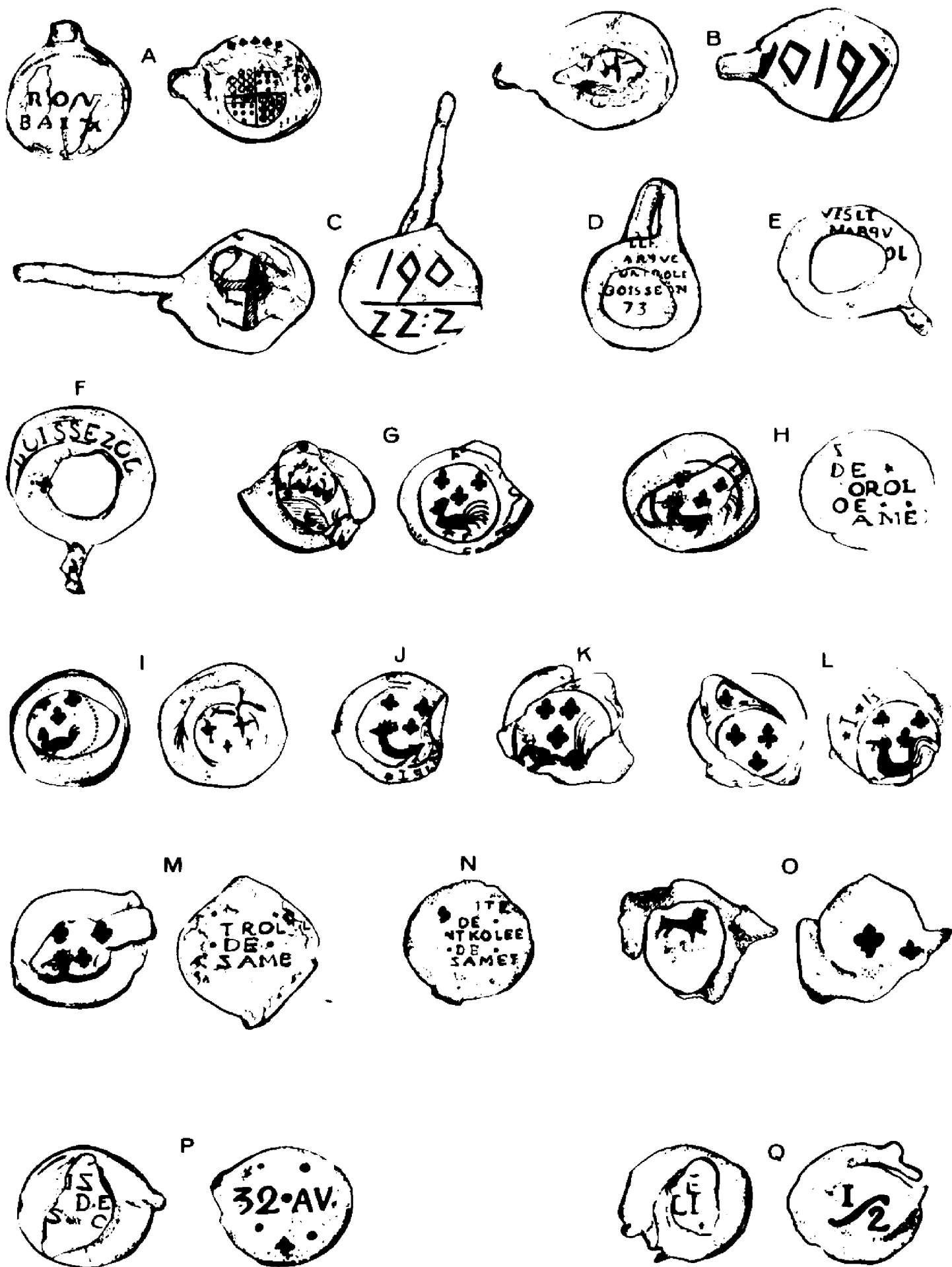


Figure 72 Bale Seals (Actual Size)

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	SA, Tl, Vg	1705
B	Vh	1
C	Vi	3131
D	Vj No. 1	2363
E	Vj No. 2	2043
F	Vj No. 3	2043
G	Vk No. 1	2247
H	Vk No. 2	76
I	Vk No. 3	2790
J	Vk No. 4	2834
K	Vk No. 5	2788
L	Vk No. 6	79
M	Vk No. 7	80
N	Vk No. 8	3302
O	Vl	938
P	Vm No. 1	896
Q	Vm No. 2	325





**Figure 73 Bale Seals (Actual Size)**

<b>Figure Designation</b>	<b>Taxonomic Designation</b>	<b>Catalog Number, MS<sup>2</sup></b>
A	SA, T1, Vm No. 3	2971
B	Vm No. 4	1082
C	Vn No. 1	1961
D	Vn No. 2	2479
E	Vn No. 3	304
F	Vn No. 4	1
G	Vn No. 5	1
H	Vo	1
I	Vp	2736
J	Vq	1
K	Vr No. 1	1144
L	Vr No. 2	2832
M	Vr No. 3	845
N	Vs	1427
O	Vt	2445

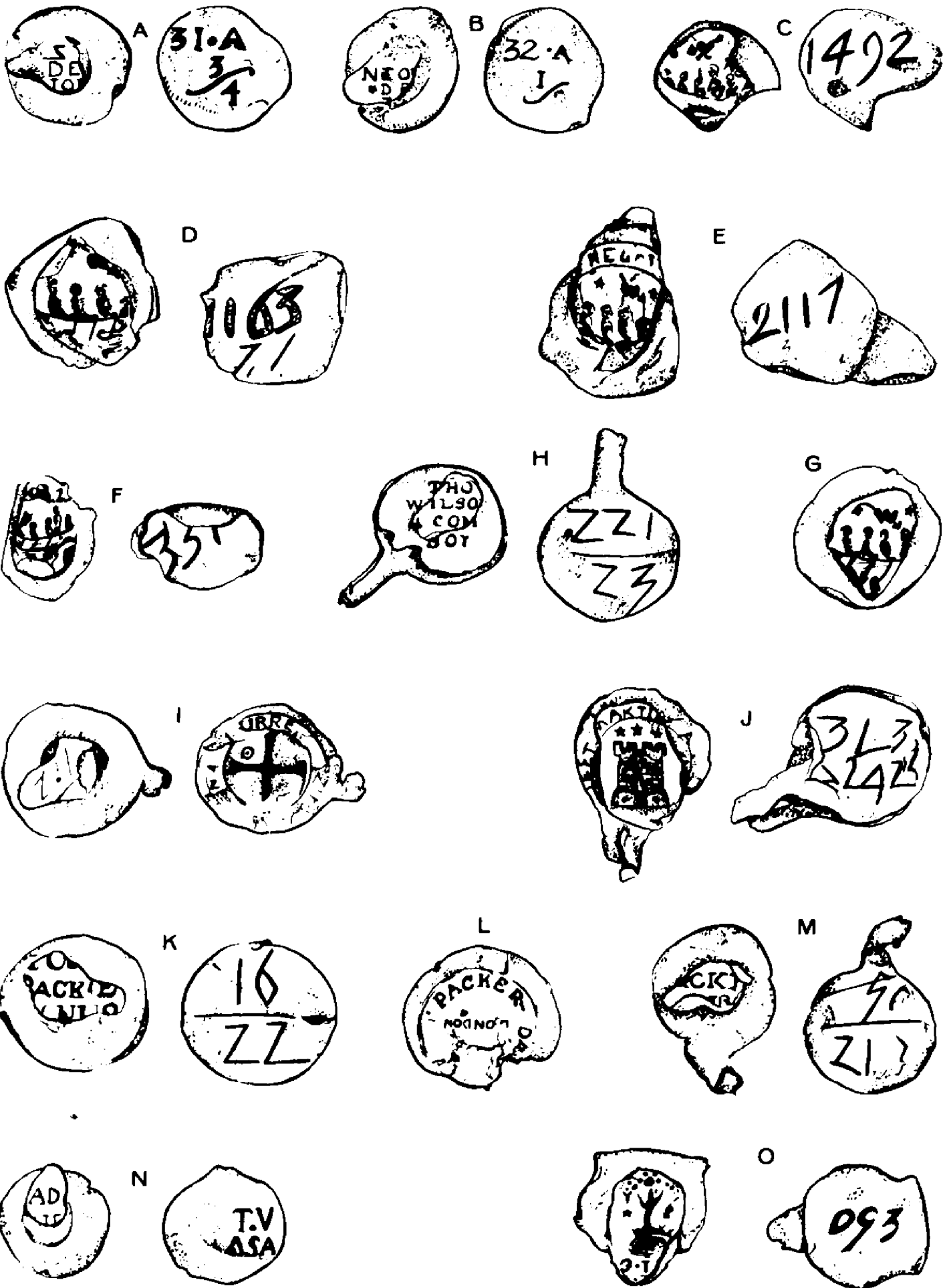


Figure 74 Bale Seals (Actual Size)

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	SA, Tl, Vu No. 1	1344
B	Vu No. 2	2012
C	Vv	972
D	Vw	1976
E	Vx	116
F	Vy	2041
G	Vz	144
H	Vaa	2686
I	Vbb	353
J	SA, Tl, Cat. 1 No. 1	258
K	No. 2	3466
L	No. 3	1353
M	No. 4	2371
N	No. 5	448
O	No. 6	1542
P	No. 7	2027
Q	No. 8	2388
R	No. 9	1
S	No. 10	2775

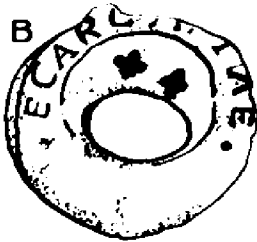
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A



B



C



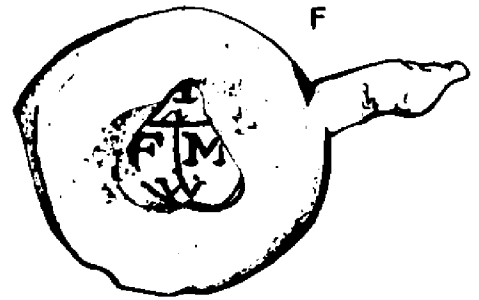
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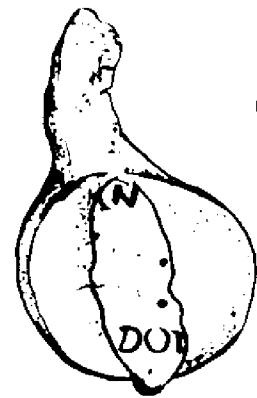
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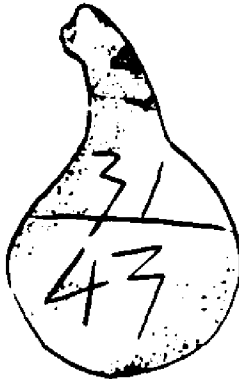
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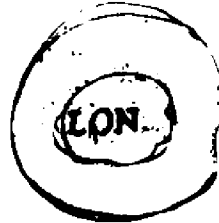
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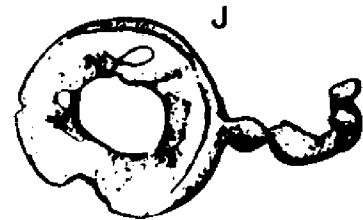
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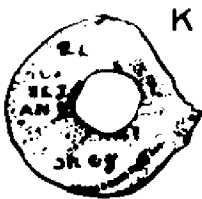
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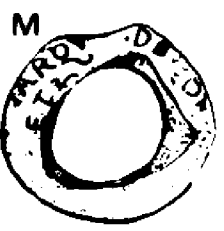
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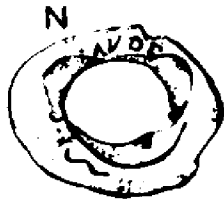
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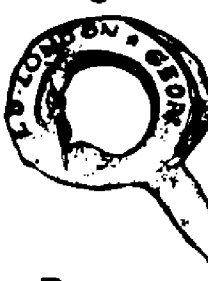
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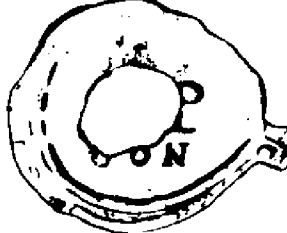
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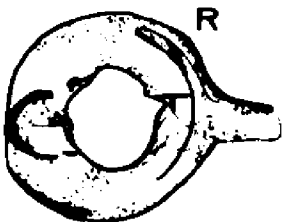
P



Q



R



S

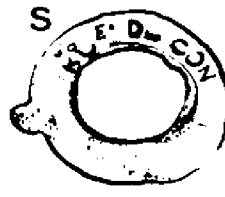


Figure 75 Bale Seals (Actual Size)

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	SA, T1, Cat. 1 No. 11	1468
B	No. 12	2736
C	No. 13	2460
D	No. 14	582
E	N . 15	2388
F	No. 16	2181
G	No. 17	1405
H	No. 18	1235
I	No. 19	673
J	No. 20	2501
K	No. 21	1110
L	SA, T1, Cat. 2 No. 1	2619
M	No. 2	845
N	No. 3	1761
O	No. 4	2018
P	No. 5	1
Q	No. 6	2110
R	No. 7	688
S	No. 8	2060
T	SA, T2, Va	2609
U	Vb	1221
V	Vc	2642
W	Vd	3-9

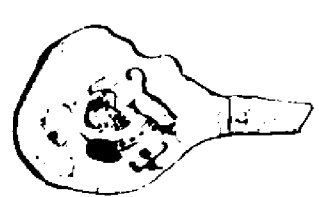
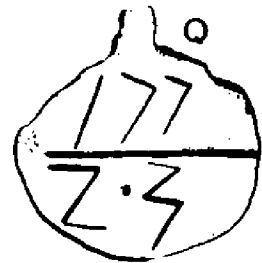
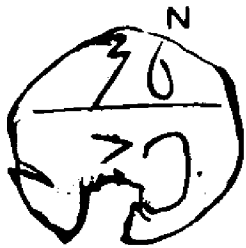
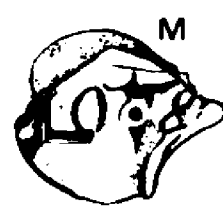
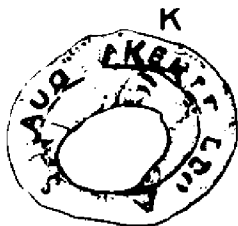
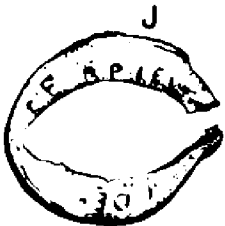
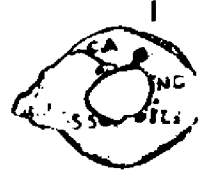
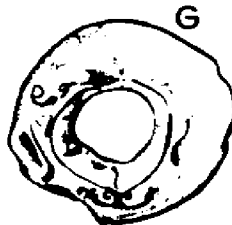
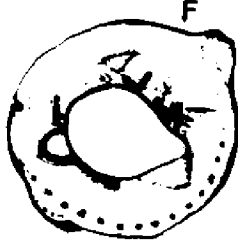
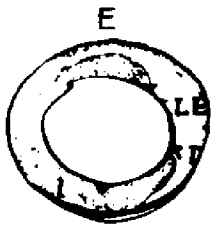
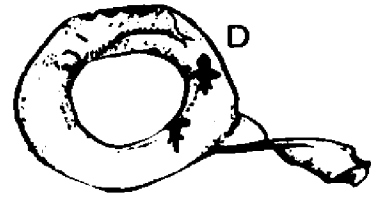
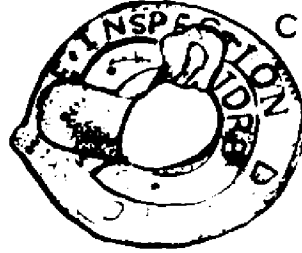
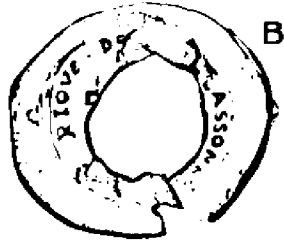
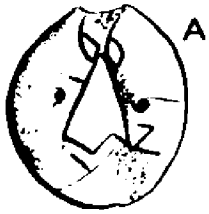


Figure 76 Bale Seals (Actual Size)

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	SB, T1, Va	1924
B	Vb	1
C	Vc	2993
D	Vd	374
E	Ve	578
F	Vf	274
G	Vg No. 1	1962
H	Vg No. 2	650
I	Vh No. 1	2150
J	Vh No. 2	1
K	Vh No. 3	1468
L	Vh No. 4	1269
M	Vh No. 5	471
N	Vh No. 6	237
O	Vh No. 7	1345
P	SC, T1, Va No. 1	1795
Q	Va No. 2	2851
R	Va No. 3	1
S	Vb	1378
T	Vc	1388
U	Vd	2181
V	Ve No. 1	311
W	Ve No. 2	2388
X	Ve No. 3	1730
Y	Vf	1198
Z	Vg	133



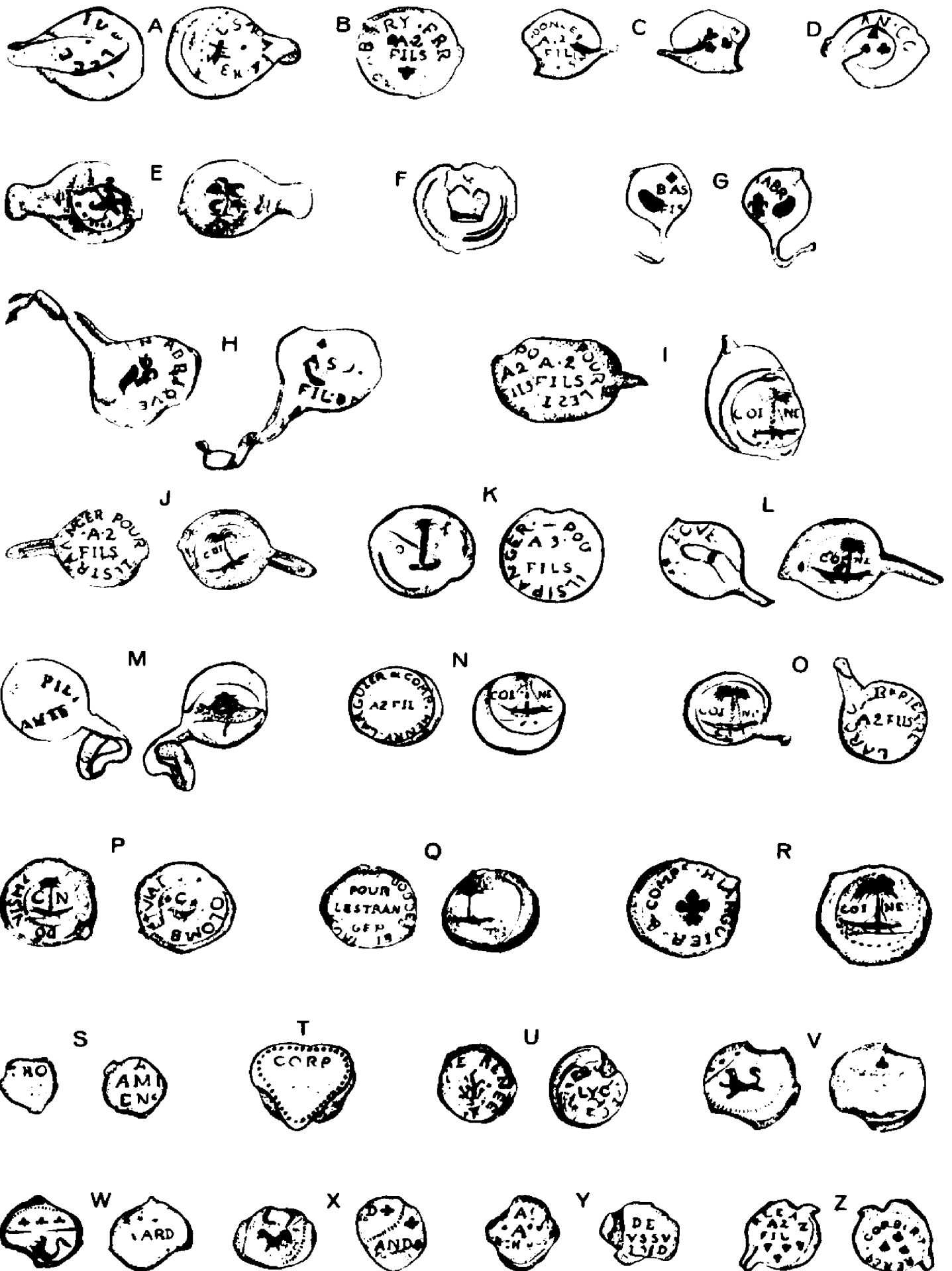
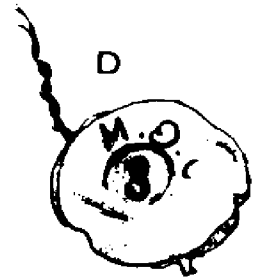
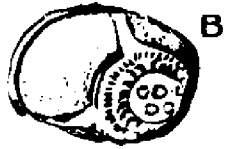


Figure 77      Bale Seals (Actual Size)

Figure Designation	Taxonomic Designation	Catalog Number, MS <sup>2</sup>
A	SC, T2, Va No. 1	2170
B	Va No. 2	2653
C	Va No. 3	1448
D	Vb	166
E	Vc No. 1	1499
F	Vc No. 2	603
G	Vc No. 3	1652
H	Bale Seal Cat. 1 No. 1	2283
I	Bale Seal Cat. 1 No. 2	85

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**APPENDIX B, PART II:**  
**BRIEF ARTIFACT DESCRIPTIONS**

## PERSONAL CONTEXT OF UTILIZATION

### Clothing and Clothing Accoutrements

Textiles (86 specimens). The majority of textile fragments represent uniform braid or decoration consisting of thin, copper-sheet wrapped, silk-core yarn. The yarn is either woven or braided into long and narrow segments which serve as uniform or clothing ornamentation. Several specimens of carbonized cloth fabric also have been recovered. Interpretation: 1750-1780, primarily British use.

Hooks and Eyes (153 specimens). Seventy-six hooks and 77 eyes have been recovered, the large majority of which are iron; the remaining specimens are copper. The majority of hooks vary in length between 36 mm and 41 mm and in width between 18 mm and 24 mm. Eyes exhibit one predominant width size, between 8 mm and 14 mm, and one predominant length size, between 12 mm and 16 mm. Interpretation: 1740-1780, primarily British use.

Shoe Heel Plates (33 specimens; 28 brass and 5 iron). Heel plates were either flat (29 specimens) or had a lip at the back edge which fit over the shoe heel. All specimens have 3 drilled holes for attachment. Interpretation: 1730-1780, possibly more common during French period.

Ice Creepers (5 specimens). Ice creepers consist of an elongate, flat, iron bar on each end of which are 2 iron spurs or prongs, bent down, and 1 flange or eyelet for attachment, bent up. The 5 specimens vary in length between 71.5 and 103.4 mm. Interpretation: none.

Ice Skate (1 specimen). The single specimen consists of a thin, end-curved iron bar with a lip for shoe-toe attachment and a drilled flange on the opposite end for heel attachment. The specimen is 303.2 mm in total length. Interpretation: none.

### Adornment

Hawk Bells (117 specimens). Hawk bells consist of a brass crown, back, and eye, and an iron clanker. The eye is expanded on the inside and brazed to the back; the back is brazed to the crown. The crown has a slit with round holes at each end. Seventeen specimens have crowns with impressed marks, such as a D or a 4, and crown symbols. Size: diameter range, 11.0-27.0 mm; possibly 5 size categories; 13.5-14.5; 15.5-16.5; 19.5-20.5; 21.5-22.5; and 26.0. Interpretation: 1730-1770, primary use during French period.

Religious Medallions and Crucifixes (27 specimens; 7 medallions and 20 crucifixes). All medallions and crucifixes are brass. Three medallions were octagonal, and 4 were round. The face of each medallion and crucifix bears raised, religious symbols. Interpretation: probably French use.

Jewelry

- Bracelets (7 specimens). Six bracelets are made of round or rectangular brass rods. One specimen is made of twisted brass wire. Interpretation: none.
- Earrings (13 specimens). Five silver specimens each with a single suspended bob and 7, two-part brass specimens with glass sets. Interpretation: possibly French, 1730-1760.
- Pendants (5 specimens). These include brass and silver frames with enclosed glass sets. Interpretation: none.
- Brooches (38 specimens; 26 silver-plated brass and 12 pewter). Brass specimens consist of a circular ring with attached, movable tongue. Pewter specimens consist of a cast, circular ring with a stationary cross bar. Interpretation: 1760-1780, British.
- Chain (17 specimens; 15 brass, 2 iron). Interpretation: none.
- Hat Pin (1 specimen).
- Spacers (17 specimens; 3 brass, 14 catlinite).
- Bangles (6 specimens; 4 silver, 2 glass). All specimens are triangular-shaped. Glass specimens consist of blue or blue and white glass.

Grooming

Combs (46 specimens). Combs are double-edged, fine-toothed, and made of bone or ivory. Interpretation: 1740-1780, French and British.

Hair Brush (1 specimen). One ivory hair brush was recovered; it was 143.6 mm in length. The specimen has 2 rows of 12 holes each for insertion of brush material or hair. Interpretation: none.

Razors (6 specimens). Hollow-ground steel blades from straight edge razors have been recovered; 3 of these have unidentifiable, impressed, maker's marks. Blades range in length from 129 mm to 136 mm. Interpretation: none.

ActivitiesRecreation

- Chess Piece (1 specimen). Ivory chess pawn. Interpretation: none.
- Cup and Pin (?) (8 specimens). Hollow, cone-shaped, bone objects, possibly the cups for a "cup and pin" game. Specimens vary in length from 26.8 mm to 30.3 mm and in maximum diameter from 14.6 mm to 16.6 mm. Interpretation: probably French, 1730-1760.
- Gaming Pieces (?) (14 specimens). Bone or ivory circular disks, often with incised linear or circular decoration on both faces; specimens vary in diameter from 11.1 mm to 20.9 mm. Interpretation: probably French, 1730-1760.
- Dice (3 specimens). Square, bone objects with series of impressed dots on each of 6 faces to represent numbers 1 through 6. Interpretation: none.

- Whizzer (12 specimens). Round, lead disks with toothed edges and 2 center holes through which cord was passed. Interpretation: possibly French, 1715-1760.
- Marbles (20 specimens). Colored clay or stone objects which vary in diameter from 12.3 mm to 18.2 mm. Interpretation: none.

### Writing

- Lead Pencils (25 specimens). Round or rectangular lead bars, often tapered to a point on both ends. Interpretation: 1750-1781; probably locally manufactured and primarily of British use.
- Letter Seal (1 specimen). Brass with impressed crest. Interpretation: none.

## HOUSEHOLD CONTEXT OF UTILIZATION

### Maintenance and Repair

Pins (781 specimens). All pins are made of silver-plated, brass wire with a spiral coil wire-head soldered to the shaft. Pins vary in length from 21 mm to 41 mm; the majority are between 31 mm and 36 mm long.

Needles (56 specimens). Needles were found in the following forms, sizes and materials.

- Steel, diamond-shaped point, slit eye; (9 specimens); length range, 108 mm to 138 mm.
- Steel, triangular-shaped point, slit eye; (17 specimens); length range, 96 mm to 229 mm; 2 specimens stamped with manufacturer's mark of the letter P superimposed by a crown symbol.
- Steel, round, slit or drilled eye; (23 specimens); length range, 38 mm to 208 mm, most common, 40 mm-45 mm.
- Steel or brass, round shaft with double prongs on each end (netting needle); (3 specimens).
- Bone, single- or double-ended with drilled hole at shaft center or end.

Interpretation: 1730-1770, primarily French use.

Thimbles (41 specimens). All specimens are brass with slightly tapered sides and slightly convex tops. All exterior surfaces are patterned with small, round or square impressions. Thimbles range in maximum diameter from 13.3 mm to 19.2 mm, with an average of 15.9 mm; and in length from 14.6 mm to 19.8 mm, with an average of 17.7 mm. Interpretation: British, 1760-1780.

Scissors (26 specimens). Twenty-three specimens are iron with either equal-sized round or oval finger rings or with oblong rings of unequal size. The 3 brass specimens are handle fragments, 2 of which bear incised decoration. Interpretation: 1715-1781, French and British, greatest use between 1730 and 1760.

### Preparation and Consumption of Food

Kettle Hooks (5 specimens). S-curved iron bars from which a kettle is suspended. Interpretation: none.

Kettle Handles (7 specimens). Curved iron rod with curled ends which are looped through kettle or vessel lugs. Projected vessel diameter range based on handle length between ends, 170 mm-260 mm. Interpretation: none.

Kettle Lugs (72 specimens). Square-shaped lugs from copper kettles. All brass specimens (65 specimens) are riveted to kettle fragments, have a single hole for handle attachment, and have folded corners on the lug end nearest the handle. Brass lugs range in length between 47.4 mm and 122.2 mm, with an average of 75.5 mm; and in width between 35.1 mm and 100.6 mm, with an average of 70.5 mm. There is a very high, positive correlation between length and width. The most frequent form of iron lug (5 specimens) consists of a curved iron plate with a down-curved hook for handle attachment. A second form (2 specimens) is U-shaped with flanged ends for vessel attachment. Interpretation: 1730-1765, primarily French use, manufactured or repaired locally.

Kettles, Cast Iron (59 specimens). All specimens are fragments (feet, rims, and body sherds) of large, cast-iron kettles. Interpretation: 1740-1780, primarily British use.

Porringer Handle (1 specimen). Perforated, pewter handle for porringer bowl. Interpretation: none.

Plate, Pewter (1 specimen). Pewter dinner plate, 229.1 mm in diameter, 2 sets of marks on back side; the letters C.P enclosed in circle at plate center, and the letters (S) RD engraved on the rim. Interpretation: none.

Spigots (27 specimens, including spigot keys and key fittings). All spigots are made of brass and consist of a tube, movable cock, and cock-stop which projects from the tube surface. Keys and key fittings for spigots have also been recovered. Interpretation: 1730-1780, French and British use.

Ceramics, Non-European (781 sherds). Aboriginal ceramics (late pre-historic and historic) occur at the site either in association with French features or in contexts which predate the site's establishment. Interpretation: associated with the pre-site occupation of the Straits' area and with the early periods of French occupation, ca. 1715-1740.



### Furnishings

Hasp Locks (79 specimens). Iron trunk locks consisting of a hinge element and a lock element. Two forms of hasps are represented in the Fort Michilimackinac sample; these consist of (1) a two-part hinge element with a closed loop attached to one part (46 specimens) which is inserted into a receiving slit on a separate hasp-lock mechanism (20 specimens); and (2) a single iron bar with a slit on one end (10 specimens) which is passed over a receiving loop (3 specimens) and which is secured by passing a third element between the two. With the first form, the lock mechanism was mounted on the trunk body while the hinge element was attached to the lid edge. Interpretation: specimens were recovered from both French and British contexts.

Drawer-Pull Knobs (10 specimens). Small brass knobs apparently used as drawer pulls. Interpretation: none.

Drawer Handles (16 specimens). Curved iron rods attached to drawers with cotter-key-like pins. Interpretation: none.

Hinges, Furniture (30 specimens). Small brass or silver-plated brass, two-part hinges. Interpretation: probably French.

Tacks (59 specimens). Decorated and plain furniture upholstery tacks of brass (55 specimens) or pewter (4 specimens). One of the brass tacks was double-shanked. Interpretation: 1740-1770, primarily French use.

Candle Holders (7 specimens). All specimens are made of brass. Three of the 4 complete specimens have octagonal-shaped bases, the remaining specimen is round. Interpretation: 2 specimens are associated with French features.

Candle Snuffer (1 specimen). Iron. Interpretation: none.

Fire Tongs or "Smoker's Companion" (1 specimen). Iron. Interpretation: none.

### Storage

Barrel Hoops (462 specimens). Iron straps used to secure barrel stays. The majority of specimens were fastened with 1 iron rivet. Fragments of 4 brass specimens were recovered; each was impressed with a "King's Broad Arrow." Interpretation: 1750-1780, primarily British use.

## STRUCTURAL CONTEXT OF UTILIZATION

Structural Hardware and Parts

Nails. Nails from the site have not been counted. The "rose-head" type, with either a drawn or flattened point, is the most common style. Drawn-point rose-head nails taper on all 4 sides; flattened point rose-head nails taper on only 2 sides. The second most common type is the "L-head," with either a drawn or flattened point. Other types include the "double-shank box nail," the "offset-head nail" and a "rose-head" nail with large head and short shank. A large number of "T-head spikes" have also been recovered.

Hinges (150 specimens). Iron hinges of two forms were found: (1) single unit, two-part hinge (36 specimens); and (2) hinge bars used with a pintle. The latter form are either strap- or square-shaped. Seven of the strap, hinge bars have flared ends. All specimens were secured with screws or nails. Interpretation: 1730-1780, French and British.

Screws (19 specimens). Iron, vary in length from 19.1 mm to 44.2 mm. The number of grooves per 10 mm varies between 3.5 and 4.5. Interpretation: 1760-1780, British.

Bolts (1 specimen); Nuts (6 specimens); and Washers (5 specimens). All specimens are made of iron; all nuts are square. Interpretation: possibly British use.

Staples (52 specimens). Square- and round- (U-shaped) ended iron staples which vary in length from 19.4 mm to 79.1 mm and in width from 28.9 mm to 69.3 mm. Interpretation: 1740-1780, primarily French use.

Keys (39 specimens). Iron door and cabinet lock keys, solid and hollow shank forms. Interpretation: common during both French and British periods of control.

Locks (70 specimens including 52 lock parts). Iron rim locks (14 specimens) and padlocks (4 specimens). Interpretation: the majority of specimens were associated with buildings constructed during the French period of control but which were occupied throughout the British period.

Door, Gate, or Shutter Hooks (14 specimens). L-shaped iron hooks, stapled to permanent support and looped over receiving ring on movable door, gate, or shutter.

Door-Latch Hardware (30 specimens). Including 4 iron, sliding, latch bolts; 8 iron-lift, latch bars, horizontally mounted on the door and rotated on 1 nail through the bar end; 2 iron thumb lifts, or lifters for latch bars; these objects are hinged at the center and extend through the door to permit lifting the latch from the opposite door side; and 16 iron latch bar catches, notched U- or V-shaped objects

which are driven into the door frame. Interpretation: associated with French structures but in use throughout the period of site occupation.

Keyhole Plates (19 specimens). Brass and iron specimens were found; several iron specimens are ornamental. Interpretation: probably French.

#### CRAFT OR ACTIVITY CONTEXT OF UTILIZATION

##### Offense and Defense and/or Acquisition of Subsistence Resources

Traps (3 specimens). Fragments of iron trap springs. Interpretation: none.

Projectile Points (43 metal specimens). Iron (19 specimens) and brass (24 specimens) projectile points represented by 4 shapes: leaf-shaped and stemmed; triangular stemmed; basal-notched stemmed; and triangular. Interpretation: 1720-1760, French, probably distributed as trade goods.

Scythes (4 specimens). Iron scythe blade and attachment element fragments. Interpretation: none.

Harpoons (10 specimens). Six bone, 3 iron, and 1 brass specimen. Bone harpoons vary in length between 98.4 mm and 241.3 mm and have between 1 and 5 barbs. All bone specimens bear a drilled hole near the proximal barb. Interpretation: none.

Sword Parts (18 specimens). Sword parts consist of 5 brass, hand guards; 1 brass handle; 1 steel, sword-blade fragment; 1 iron pommel; and 11 scabbard clips or sword frogs (10 brass and 1 iron). Five of the brass clips have 2 attachment rivets on an offset shank projecting from the back face. The remaining clips are U-shaped; 3 of these bear impressed or raised designs. Interpretation: rivet style scabbard clips are probably British, the remainder appear in French contexts.

##### Special Skills and/or Crafts

###### Woodworking Tools

--Files (37 specimens). Rectangular, round, triangular, convexo-flat, and convexo-concave (cross section) iron files. The majority of files have tapered rather than offset tangs and fine double-cut teeth. Several specimens have rasp teeth. Interpretation: 1740-1780, primarily French use.

--Saws (12 blade fragments). All saw blades are small and are either brass (2 specimens) or iron (10 specimens). Blades vary in width between 14.1 mm and 30.1 mm. Interpretation: none.

- Axes (23 specimens, 4 complete). All specimens are of iron and of the well-known trade axe style. One specimen bears an impressed "three rivers" set of marks. Interpretation: French and British.
- Planes (2 specimens). Iron plane blades, 1 of which bears an unidentifiable maker's mark. Interpretation: none.
- Wedges (6 specimens). Iron. Interpretation: none.
- Chisels (15 specimens). Steel. Interpretation: none.
- Gouges (7 specimens). Steel, all specimens have handle shafts. Interpretation: none.
- Drill Bits (10 specimens). Steel. Interpretation: none.
- Punches (9 specimens). Steel. Interpretation: none.
- Gimlets (4 specimens). Steel. Interpretation: none.

#### Other Tools

- Hammers (5 specimens). Iron. Interpretation: none.
- Vice (1 specimen). Iron vice jaw. Interpretation: none.

#### Measuring

Dividers (3 specimens). Steel. Interpretation: none.

Weights (9 specimens). Seven brass, nested apothecary weights (1.8-15.2 grams weight range, 10.8 mm to 25.6 mm diameter range); 1 small, rectangular, brass weight marked 1/2 DRAM and 1 large lead weight with an iron hook. Interpretation: none.

Compass (5 specimens). Four brass compass backs and 1 bone compass plate. Interpretation: none.

Clock Part (1 specimen). Brass clock gear. Interpretation: none.

Telescope (1 specimen). Three-part (or tier) iron telescope with 2 eyepieces. Length, 215.9 mm. Interpretation: French.

#### Commercial

Coins (28 specimens). Of the 15 identifiable specimens, 7 were British (George I and George II), 7 were French (Louis XIV and Louis XV), and 1 was a Spanish bit.

#### MISCELLANEOUS OR GENERALIZED CONTEXT OF UTILIZATION

Rivets (310 specimens, 100 finished and 210 blanks). Rivet blanks are made from diamond-shaped, thin, copper sheet which range in length from 14.0 mm to 48.3 mm and in width from 11.0 mm to 18.9 mm. Blanks are rolled into a tapering tube and then hammered to produce a flattened head. Interpretation: 1730-1750, French.

Harness Buckles (10 specimens). Square or round iron frames with a movable iron tongue attached. Interpretation: none.

Strike-A-Lites (60 specimens). Three types of steel strike-a-lites (fire-steels) have been recovered: (1) steel bar with shanks extending from each end of the striking edge to form a handle (4 specimens); (2) steel bar with 1 shank extending from 1 end of an elongate striking edge to form a handle (9 specimens); and (3) oval-shaped with a center hole through which fingers are passed for grasping the object (47 specimens). The third type varies in length from 62.8 mm to 99.0 mm and in width from 31.0 mm to 39.9 mm. Interpretation: 1730-1780, greater use during French period of control.

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