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ABSTRACT

AN ARCHAEOLOGICAL EVALUATION OF FORT ST. JOSEPH: AN EIGHTEENTH CENTURY MILITARY POST AND SETTLEMENT IN BERRIEN COUNTY, MICHIGAN

By

Charles A. Hulse

In 1691 a French military post was established on the St. Joseph River, approximately one mile south of the present city of Niles, Michigan. Shortly prior to that time a Jesuit mission was established in the vicinity in order to serve the Miami Indians and the few French traders residing in the area. The Military post, mission, and civilian village operated throughout the late seventeenth century and first three-quarters of the eighteenth century. In 1761 the French surrendered the fortification to the English who controlled it until the Pontiac uprising two years later. After one year of occupation by the Potawatomie, the fort was again reclaimed by the British. For the next thirty years both English soldiers and French civilians occupied Fort St. Joseph until its destruction by Spanish forces in 1781.

Although never excavated, this site was intensively surface collected during the closing years of the 19th

century, resulting in the accumulation of over 100,000 artifacts. These collections were donated to museum repositories in Niles, Michigan and South Bend, Indiana, and were intermittently displayed over the years.

This thesis consists of a concise description and analysis of the material culture from Fort St. Joseph. The analysis of artifacts from the site indicates three major periods of occupation extending from 1687 to approximately 1820. These periods are reviewed in terms of such characteristics as cultural affiliation, population density, and socio-economic function in order to provide a comprehensive overview of the site's cultural dynamics and its role in the European settlement of the Great Lakes area.

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JOSEPH: AN EIGHTEENTH CENTURY MILITARY
POST AND SETTLEMENT IN BERRIEN
COUNTY, MICHIGAN

By

Charles A. Hulse^{Allen}

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1977

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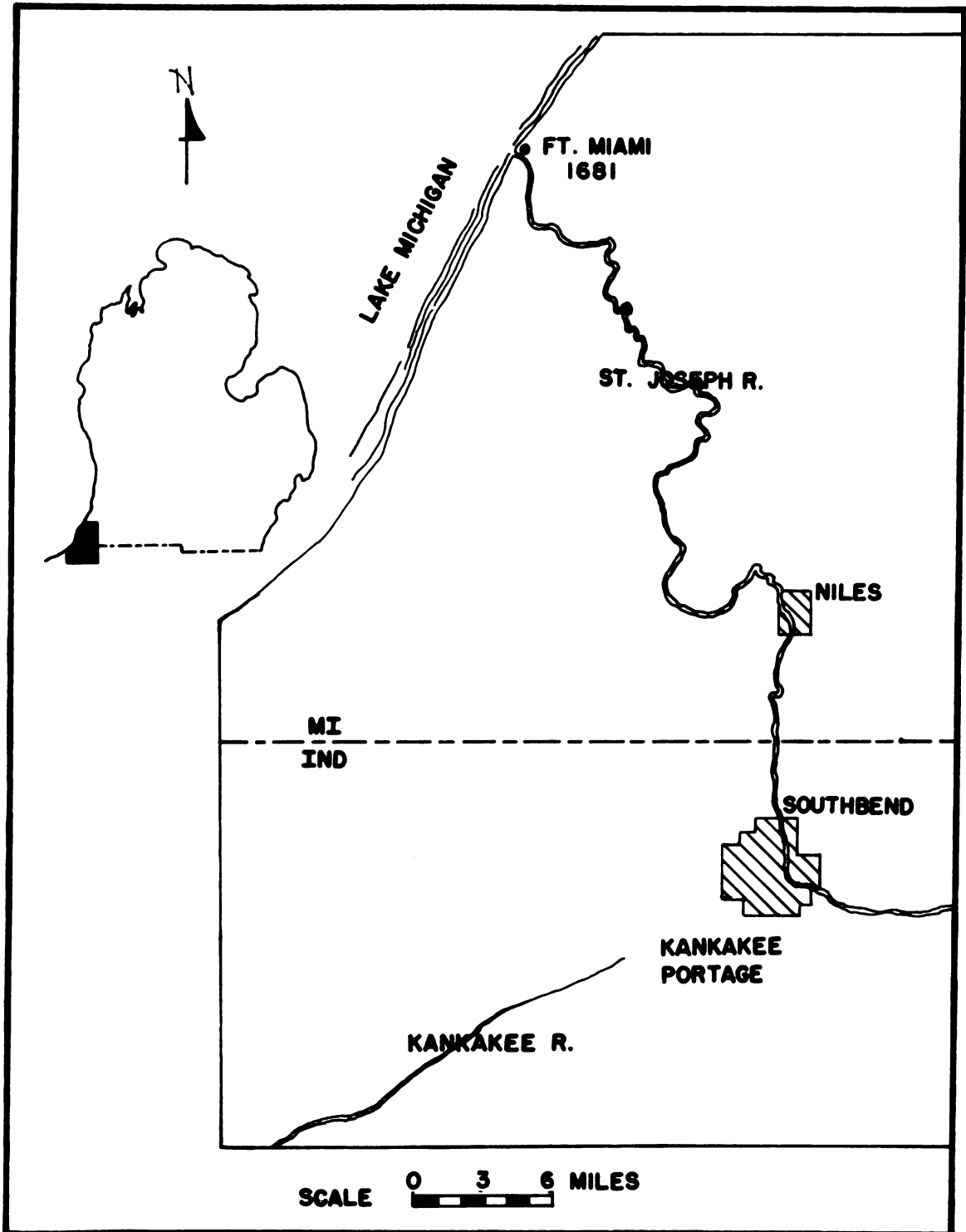
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CHAPTER I

HISTORY, DESCRIPTION, LOCATION

Fort St. Joseph was an eighteenth century military post located on the St. Joseph River approximately one mile south of the present day city of Niles, Michigan. The first European attempt at settlement in the area occurred in 1679 when LaSalle built a small fort at the mouth of the river while awaiting the return of the Griffon (Idle 1946: 3-8). Called Fort Miami after the early name of the St. Joseph River, this outpost had been occupied intermittently for about one year when, in 1680, it was destroyed by LaSalle's men, who had mutinied. The following year LaSalle returned to the area and re-established the post. However, this new post was also short lived and was probably abandoned within the next few years. LaSalle's Fort Miami at the present city of St. Joseph, and the later Fort St. Joseph at Niles, are often confused in the literature. Therefore, it must be stressed that there were two separate forts located sixty miles apart, with Fort Miami the earlier of the two. It was not until the mid 1680s that any European settlement was established up river near the present city of Niles (see Figure 1).

Figure 1 A Map Showing the Fort St. Joseph Area



In 1686 a land grant was made to Father D'Ablon and other missionaries of the Company of Jesus for the establishment of a mission on the Miami (St. Joseph) River. This grant consisted of a tract of land, twenty arpents (3600 feet) square, fronting on the river and issued by Sieurs de Denonville and de Champigny on October 1st of that year (Idle 1946: 20). Wiessert (1923: 38), however, quotes a later letter (1689) by Denonville and Champigny as granting an area only five arpents fronting on the river by five arpents in depth. There is the possibility that the size of the land in the original grant was later reduced to twenty-five square arpents within the first few years after the concession was made. The wording of the original grant indicates that a mission was not yet begun at the time of the issuance of the grant (Idle 1946: 20-21). He goes on to say that the most likely date for the founding of the mission was in 1687 or 1688. Father Claude Allouez is given credit for being the first missionary at the Mission near Niles, and is known to have worked among the Miami Indians for a number of years prior to the establishment of a permanent mission in the area. Upon his death in 1690, Allouez was buried near the mission and a wooden cross erected upon his grave. This wood cross was replaced by succeeding generations until 1918, when a granite cross was erected by the citizens of Niles on the

bluff overlooking the river about one mile south of the city.

Father Claude Aneneau succeeded Father Allouez at the mission in 1690, and continued his duties there until 1707. His presence at the mission at Niles, as well as that of his predecessors, is preserved in the Baptismal Register (see Mississippi Valley Historical Review, XIII, September, 1926). From this register (Idle 1946: 289-301) the following list of missionaries and their dates of service was compiled.

Claude Allouez	1687-1690
Claude Aneneau	1690-1707
Jean Mermet	1700-1702
Jean-Baptiste Chardon	1705, 1707-1712, 1729
Michel Guignas	1720-1721
Jean-Baptiste de Saint Pe	1721, 1734
Jean-Charles Guymoneau	1722-1723
Charles-Michel Mesaiger	1724-1731
Jean-Louis de la Pierre	1735
Pierre du Jaunay	1738, 1742, 1745, 1752
Jean Baptiste de la Morinie	1740-1741, 1743-1744, 1752-1760
Pierre Potier	1761

The mission was abandoned during the Fox Wars, and from 1712 through 1718 no missionary was in the area. After its re-establishment in 1718, the mission was served by the Jesuit Fathers continuously until 1731. Between that time and 1740 the mission was rarely visited by missionaries. Only annual visits were made by the Jesuit Fathers from 1740 through 1745, and from 1752 through 1761. Apparently the mission was not visited from 1745 to 1752.

Augustin Legardeur, Sieur de Courtenmanche was sent in 1691 to establish a military post near the mission on the St. Joseph River. This was part of a plan advanced by Frontenac, the Governor of New France to control the waterways from Canada to the Gulf of Mexico, and to gain the loyalty of the Indian tribes in the area (Eccles 1969: 126-130). Although trade at Fort St. Joseph was probably slight during the first few years after the post was established, it was still considerable enough to insure a healthy profit for Courtemanche and his junior officer, Jean-Baptiste Bissot, Sieur de Vincennes (Idle 1946: 290, 37). The profit motive cannot be overlooked in the settlement of Fort St. Joseph. According to Idle (1946: 37), the major reason for the establishment of a post at Niles was to undertake trade, and not to gain political control of the area. Peace and loyalty of the Indian tribes was also essential to the maintenance of trade, and large quantities of presents were given to insure their allegiance to France. The Miami Indians were the primary recipients of these goods, but were later displaced by a number of other tribes which moved into the area for trading purposes.

Louis XIV'sent a series of proclamations and ordinances in 1696 and 1697 which greatly influenced trade in the upper country (Innis 1956: 67-68). These orders called for a suppression of trade by the discontinuance of congés, or licenses of trade, and the restriction of numerous

outposts in the scope and extent of their trading activities. In particular, Forts Frontenac, Michilimackinac, and St. Joseph were not permitted any trade with the Indians. The reason for this abatement in trade was an oversupply of furs in France which was disrupting prices. That same year, Vincennes took command at the St. Joseph post and remained there until it was officially abandoned in 1699.

By 1704, the Potawatomie Indians had moved into the area of the mission and fort on the St. Joseph River. Just prior to the 1704 move the Miami vacated the area and moved to Detroit and to the Maumee River Valley. Cadillac, at that time, was attempting to concentrate the tribes at Detroit, which he did with some success. Although relations between the two tribes were strained, it is also probable that both the Miami and the Potawatomie located their villages in close proximity to one another while they were visiting the post. Illicit trade was common during the years 1696 to 1715 and both Courtemanche and Vincennes made occasional visits to the post at St. Joseph for that purpose, as well as in the interest of maintaining peace. Though officially abandoned, the post was inhabited continuously by French civilian traders who refused to leave the area.

Before his death in 1715, Louis XIV reinstated the trade and again allowed for the issuance of permits

to private traders. Fort St. Joseph was officially re-established in 1717 with a garrison of fourteen men and officers (Idle 1946: 124-125). One major reason for its re-commission was to draw the Miami back to the St. Joseph River. Captain Jean-Baptiste de St. Ours, Sieur Deschallions was the first commandant after its re-establishment, and was successful in reviving the trade at the fort. He served for two years before he was replaced by his second in command, Martin Remy, Sieur de Montimidy.

When Charlevoix visited the post at Niles in August of 1721 he wrote:

It was eight days yesterday since I arrived at this post, where we have a mission and where there is a commandant and a small garrison. The commandant's house, which is a very sorry one, is called the fort, from it being surrounded with an indifferent palisade, which is pretty nearly the case with all the rest, except the forts Champly and Catarocouy, which are real fortresses. There are, however, in almost every one of them some few cannons or pateraroes, which in case of necessity, are sufficient to hinder surprise and to keep the Indians in respect (Weissert 1923: 58-59).

He goes on to say that:

The Poutewatamies have occupied successively several posts here where they still are. Their village is on the same side with the fort, a little below it and on a very fine spot of ground. That of the Miamis is on the other side of the river (Wiessert 1923: 59).

Throughout French control of the fort, from 1717 to 1761, numerous officers served as commandants at the

fort. According to Idle (1946: 294-297) the terms of each commandant is as follows:

1717-1720	Captain Jean-Baptiste de St. Ours, Sieur Deschallions
1720-1722	Second Ensign Martin Remy, Sieur de Montimidy
1722-1725	Captain Etienne de Villedonne
1725-1731	Lieutenant Nicholas-Antoine Coulan, Sieur de Villers
1731-1735	Second Ensign Jacques-Pierre Donaeu, Sieur de muy
1735-1738	Lieutenant Paul-Louis d'Asmard, Sieur de Lusignan
1738-1742	possibly Nicholas-Antoine Coulon, Sieur de Villers
1742-1745	Ensign Louis Coulon, Sieur de Villers
1745-1747	Ensign Jean-Baptiste Celoraon, Sieur de Plainville
1747-1750	Second Ensign Francois-Marie Picote, Sieur de Belestre
1750-1751	Captain Pierre-Jean-Baptiste-Francois-Xavier Regardeur, Sieur de Repentigmy
1751-1753	Lieutenant Pierre-Antoine de la Corne, Sieur de la Colombiere
1753-1754	Colombiere or Deschallions
1754-1756	Captain Roch de St. Ours, Sieur Deschallions
1756-1757	possibly Deschallions
1757-1759	Captain Jean Leverrier, Chevallier of St. Louis
1759-1760	no officer--maybe under nominal command of Leverrier

Until 1742, licenses for trade were controlled by the commandants and served as a source of revenue for themselves and the post. Later that year the policy was changed by the French government to a system by which territories were assigned to private traders or merchants. This new system proved ineffective and resulted in shortages of goods and supplies needed for both the fur trade and the military garrison. Due to the War of Austrian Succession (King George's War, 1743-1748) it was

increasingly difficult for private individuals to obtain the quantities of goods necessary to sustain a wilderness trading enterprise. As the close of the war neared, the military again took over administration to the conge system, which was reinstated in 1748 and lasted until 1755.

The population of the fort between 1717 and 1761 is difficult to ascertain. Except for the period between 1746-1751, the Baptismal Record was maintained by the missionaries or laymen, and shows that sixty-four French children were baptized. Thirty of them (fifteen boys, fifteen girls) were baptized in the last six years, perhaps indicating that this was the period of most intensive French occupation of the area. A census of 1736 lists one hundred Potawatomi, ten Miami and eight Illinois Kaskaskia as Indian residents at the Fort. The Kaskaskia were part of a fluctuating population at the post, which in addition, probably included Kickapoo, Mascouten, Wea, and Illinois as groups which occasionally traded at the fort (Idle 1946: 303, 149).

After the British victory at Quebec in 1760 all lands east of the Mississippi were ceded to Britain as the result of the Treaty of Paris in 1763. This included control of French military posts such as Fort St. Joseph. Though control of the fort was formally relinquished to the British in 1760, they did not occupy it until October

of 1761, when Captain Henry Balfour, a British officer, assumed control of the post with soldiers from the 60th and 80th regiments (Weissert 1923: 76). Balfour spent nearly two years as commandant. Despite British command, the French population of the area remained fairly stable and the two nationalities co-existed within the bounds of the fort. The size of the British military population at Fort St. Joseph is not specifically known. However, at best it was a modest force of perhaps ten officers and men.

Succeeding Balfour as commandant in 1763 was Ensign Francis Schlosser, a man purported to be of exceedingly poor competence in all areas. This incompetence is usually attributed to an "excess of the bottle," and a general dislike of all Frenchmen--a bad combination considering the circumstances. Schlosser's reign as commandant came to an abrupt halt on May 25, 1763 when during Pontiac's uprising the fort was forcibly taken by a force of 150 Potawatomie and 150 Ottawa warriors. In the process, ten of Schlosser's men were killed, and he along with the three surviving soldiers were taken prisoner. The four captives were later ransomed at Detroit (Cunningham 1961: 77). Upon a negotiated peace with Pontiac, Fort St. Joseph was returned to nominal British control in 1764, but the fort was never again regularly garrisoned with troops (Idle 1946: 284).

The role of Fort St. Joseph in the American Revolution was minimal. During that time it served as an occasional storage depot for British supplies, which were distributed to Indians for use against American forces. As was the case during the French regime, the fort served as a subsidiary post to the military forces at Michilimackinac and the supplies which reached the southern fort originated (or passed through) from the north. A plan for military action against Fort St. Joseph by the Americans was planned in 1779, but this campaign failed to materialize (Cunningham 1961: 77).

A detailed census of Fort St. Joseph exists for 1780. At that time the French population numbered forty-five individuals counting men, women, and children. Four Pawnee slaves were also included in this figure. The 1780 census notes that eight houses and seven shanties housed these individuals. Other than this reference, no detailed descriptions exist of any structures in or around the fort throughout the occupation period.

In December of 1780, the fort at Niles was attacked and defeated by Spanish forces from the Cahokia area of the Illinois. The December attack resulted in the capture of supplies and men. However, the invading forces were overtaken upon their return journey and all goods recovered. In this conflict between English and Spanish

forces, heavy casualties were suffered by the latter and only a few survivors managed their return to St. Louis.

Kinnaird (1933: 175-191) presents three reasons for the second attack by the Spanish on Fort St. Joseph, which occurred two months later in February of 1781.

First of all, the attack may have been a way of showing Spanish dominance of the west. Threatened by the increasing movement westward by the British (and Americans), Spain must have wished to demonstrate their military strength in the Mississippi Valley. Secondly, the attack may have been a simple matter of revenge for the Spanish defeat of the preceding month. A third reason which also must be considered is the desire for plunder. If the supplies at the fort were the target of the first attack, then there is a good possibility that they were important enough to provide some motivation for the second campaign. Perhaps a combination of these factors would be the most reasonable explanation for the action.

Whatever the cause, the result was disastrous for the fort. An attacking force composed of Spanish militia, volunteers, and Indians captured the fort in a bloodless battle. It was then looted of supplies and burned to the ground. According to Cunningham (1961: 79) the fort was completely destroyed except for the church, which was later removed to the settlement of Bertrand. Idle (1946:

287) and Cunningham (1961: 79) claim that the Spanish destroyed the fort a day or less after having captured it.

Apparently no subsequent attempt was made to rebuild Fort St. Joseph as it was abandoned early in 1781 (Idle 1946: 288). Two men, William Burnett and John Kinzie, prominent traders in the area in the closing years of the eighteenth century, established a trading post several miles upstream from the burned fort. This area became a new center for trade in this area after the turn of the century. The new post, called Kinzies Improvement or "Parc aux vaches," became a stopping place for travelers and traders.

As the first American settlers moved into the area in the 1820s, only a few references were made as to the location of the old fort, and none of these consistently placed it in one location. Likewise, maps of the French and British periods are of little help in determining the exact location of the fort. In these sources, as well as in the literature the major controversy is whether the fort was located on the east or west bank of the St. Joseph River. Although this will remain a point of contention until archaeological excavations confirm the location, it is most probable that the fort was located on the east bank of the river. This is in part indicated by high artifact concentrations found on the east bank. According to a local historian,

The site of the village, mission and Fort of St. Joseph was on the eastern side of the river, on the first terrace up from the river, in the southwest quarter of the southwest quarter of Section 35, Niles Township, Berrien County, the center of occupancy being somewhat south of the point where the north line of said southwest quarter of southwest quarter of Section 35 touches the east side of the river. The dam of the Niles Water Power Company across the river having raised the water about ten or twelve feet has brought up the water nearly up to the top of the terrace upon which was situated the old mission (Beeson 1898: 179).

A more recent account of the fort's location states that it is:

bounded on the north by a spur line of the Penn Central Railroad, on the west by the St. Joseph River, on the east by South Bond Street and on the south by the southern section line of Section 35, T7S, R17W (Lowery 1972).

This land is presently owned by the French Paper Company (Hogg 1975: 3), and between the 1920s and 1960s was used by the City of Niles as a site for landfill operations. This landfill project placed approximately eight feet of fill over the suspected site.

Although the site has not been destroyed by the landfill, there are, at present, no immediate plans for excavations. Therefore, the only material objects which can yield information on the fort are those which were collected by amateur archaeologists and relic hunters before the landfill was implemented. In the last few years of the nineteenth and first several of the twentieth centuries, a number of collectors gathered great quantities of artifacts from the site. The methods by which these

artifacts were collected is not definitely known, however most local sources comment that those objects were "combed" from the surface while the land was under cultivation. In addition, some artifacts were probably collected from the eroding banks of the river, or from the river itself.

The artifacts collected at the site are today housed in local museums in southwestern Michigan and northern Indiana. The most notable collection is at the Fort St. Joseph Historical museum at Niles, Michigan, which contains over 100,000 artifacts. Some objects contained at this museum are presently on loan to the Old Court House Museum in Berrien Springs, and can be viewed there, as a part of a traveling exhibit constructed for the Bicentennial. A small collection of artifacts is also present at the Northern Indiana Historical Society in South Bend, and contains quantities of trade silver and other artifacts which have high display value.

Approximately 95 percent of all artifacts in the Fort St. Joseph Museum are from a single collection compiled by Lewis H. Beeson, a local amateur archaeologist and historian who lived on land adjacent to the site of the fort through most of his life. The artifacts he collected were found within several acres of land described by him earlier in this chapter (see page 15). At the time he was collecting (at the turn of the century) he was positive that he had discovered the location of the

fort, and presented his views in speeches and articles. Numerous historians visited Beeson at the site, most notably McCoy (1907: 545) and Milo Quaife (1914: 490) who commented upon his large collection of artifacts. Sometime in the 1930s, Beeson's collection was donated to the Museum in Niles, and a similar though smaller collection was sold to the Northern Indiana Historical Society Museum in South Bend.

The remaining 5 percent of the collection at the Museum in Niles comes from contributions by Messrs. F. N. Bonine, Frank Line, and William Smith. These men collected artifacts at the same period as Beeson, but their collections are not nearly as extensive and are mostly composed of utilitarian items, thus presenting the possibility that showy items such as trade silver may have been selected out before the contributions were made. On the other hand, Beeson's collection contains almost every artifact category present in a systematically excavated site.

Since the collections were acquired by the Fort St. Joseph Museum, the artifacts have occasionally been displayed, but were for the most part placed into storage. Quimby (1966, 1939) had viewed the collections in Niles and has published various articles relating to specific artifact categories. Despite great interest among both local people and professional archaeologists in the

collections from Ft. St. Joseph, no systematic description or analysis of this resource has been compiled.

Appendix A provides an inventory and description of the artifacts from the several collections which have been preserved in the Museum repositories of the Ft. St. Joseph area.

CHAPTER II

SYNTHESIS AND INTERPRETATION

The artifacts described in Appendix A are the only known physical evidence from the site, and reflect the cultures of the people who deposited these materials. A discussion of Fort St. Joseph must be both microspective and macrospective; first focusing on the cultural area encompassing the Fort and nearby countryside, and then comparing and evaluating the role of the Fort in relation to surrounding settlements and trade centers. This chapter will focus on a presentation of both analytic viewpoints, and will rely on a combination of historical, archeological (artifactual), and comparative site data. The reasons for settlement, and the location of the Fort were discussed in Chapter I and will not be restated here. However, the time range of occupation and the cultural components of settlement will be further discussed and expanded based upon the artifactual evidence in the Fort St. Joseph collections.

The time range for the European occupation at Fort St. Joseph as it is known from historical documents spans the years 1687-1781, beginning with the establishment

of a mission, and ending with the destruction of the Fort by Spanish forces. The artifact collections, both in Niles and South Bend, confirm the original date of occupation, but discount the assumption that occupation at the Fort site ended in 1781. Large quantities of artifacts which post-date 1781 are present in the collections and include the categories of ceramics, trade silver, clay pipes, gunparts, and many others. In light of this evidence, there is a very good possibility that the Fort St. Joseph area (if not the Fort itself) remained an economic center of trade, and perhaps settlement, until the second decade of the nineteenth century. This does not mean that the Fort was not destroyed in 1781, but that the area may have been re-occupied at a later date for military and/or commercial trade purposes.

Within the period 1687 to 1820 three major occupational periods can be defined. These are: the French Period 1687-1761, the British Period 1761-1781, and the Post-1781 Period 1781-1820. This sequence of occupation has been defined through careful organization and analysis of the Fort St. Joseph collections, as well as through a combination of historical sources and comparative interpretations based upon the archeological investigations at Fort Michilimackinac and other sites of these periods.

French Period 1687-1761

During the French Period of occupation, three definable European groups cohabited in the Fort St. Joseph area: Missionaries, French traders and their families, as well as French military personnel. These groups, as well as a fluctuating Indian population constituted the bulk of the population at the site. Many artifacts dating from this period were probably used by members of all three groups, thereby making these objects difficult to affiliate with one specific group. Trade knives are one example of this type of artifact, and although originally distributed by traders may have been used by missionaries, Indians, and military personnel as well. It should be remembered, therefore, that some artifacts cross-cut cultural or sub-cultural groups. In contrast, other artifacts can be closely defined to affiliation to one of these specific groups and offer insights into the cultural lifestyle of the people.

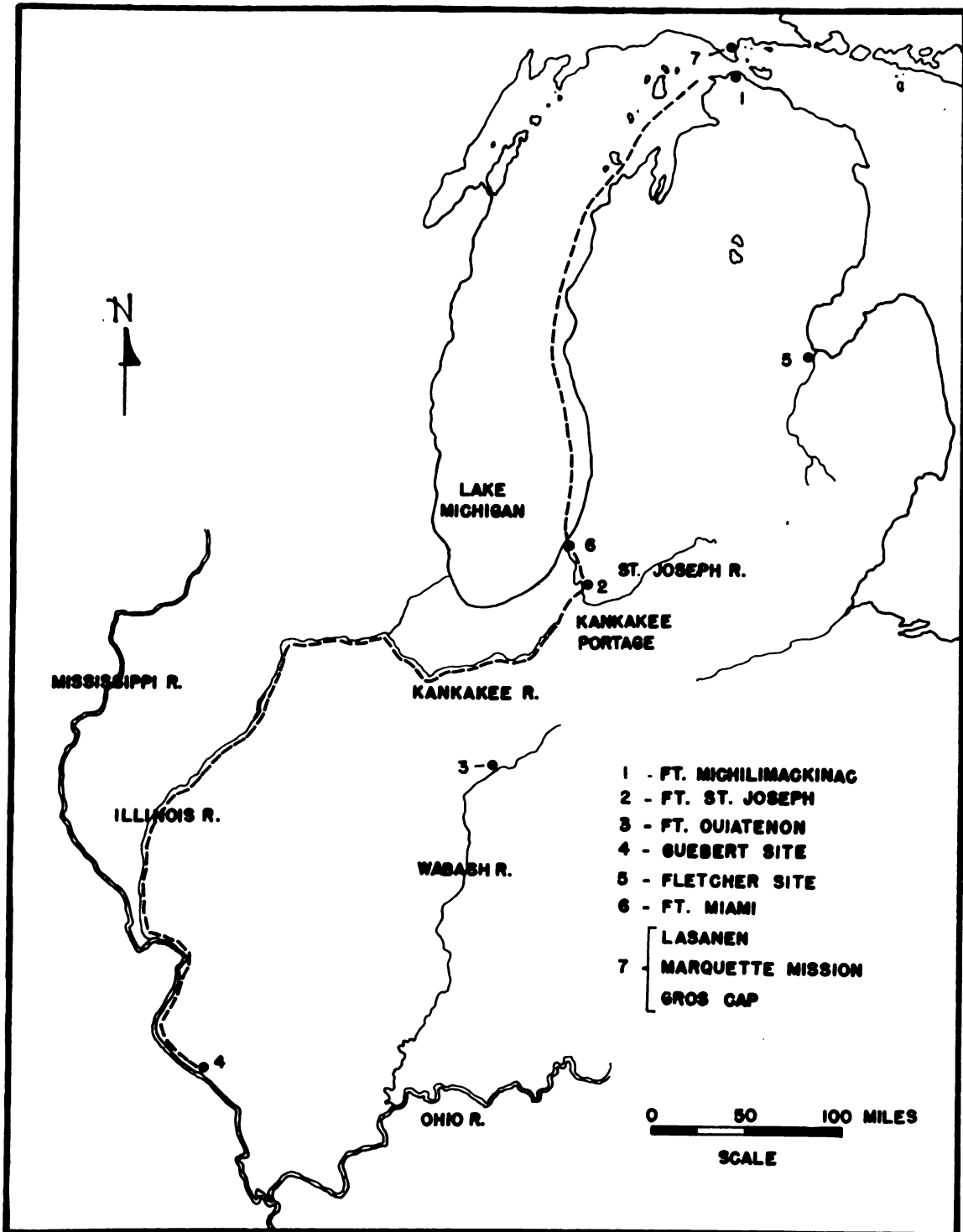
The first Europeans to occupy the Fort St. Joseph area were the Jesuit Fathers. Serving almost continuously from 1687 to 1731, the mission was rarely visited after that time. Traces of Jesuit activity present in the artifact collections consist of Jesuit rings, religious medallions, cast crucifixes, and rosary beads. The foremost two categories are the most important in terms of chronologically evaluating the Jesuit activity at the

site. According to Cleland (1972: 202) Jesuit rings with "cast designs on round or oval bezels date between 1624 and 1700." The ring sample from the St. Joseph collections contains forty-nine Jesuit rings; 37 percent of which are of the type suggested by Cleland to predate 1700. In addition, several religious medallions are present which are similar to those found at the Lasanen Site (Cleland 1971) and the Marquette Mission Site (Stone 1972) both of which date from the late seventeenth or very early eighteenth centuries. Based upon this evidence, the major period of mission activity appears to have been during the pre-1700 period. The similarity of the remaining medallions and rings to those found at Michilimackinac and the Guebert Site in southern Illinois (Good 1972: 81) additionally suggests that some missionary activities were ongoing during the first half of the eighteenth century.

The traders which settled near Fort St. Joseph were the second group to occupy the site during the French Period. During the closing years of the seventeenth century, French traders and their families established relations with the Miami Indians along the St. Joseph River. The geographical location of the subsequent mission, post, and trade center maximized transportation and trade routes, and combined the waterway of the St. Joseph River with the numerous land trails which crisscrossed the area. Although geographically isolated, the residents of Fort

St. Joseph were primarily traders who led a highly mobile life. Those goods which could easily be transported by canoe flowed quickly in a southwest direction along the northern waterways of New France. Transportation of goods to Fort Michilimackinac was accomplished by way of the St. Lawrence and the Great Lakes through a chain of forts and settlements including Louisbourg, Quebec, and Montreal. Once arriving at Michilimackinac, the goods were transported southward by numerous traders living in the area (see Figure 2). Among these traders were men from the Fort St. Joseph area, or other individuals with trading ties to St. Joseph. By canoe the supplies traveled along the western shore of Michigan to the mouth of the St. Joseph River, and from there to the Fort. As the gateway to the Illinois country, Fort St. Joseph was strategically located as to form a link in the chain of fortifications extending from Nova Scotia to the Gulf of Mexico. As goods arrived at St. Joseph they were traded and transported to the Illinois River by way of the Kankakee Portage, and from there southward (see Figure 2). Kaskaskia Indian villages, such as the Guebert Site in Illinois received some trade goods from the north, probably originating from Michilimackinac (Good 1972: 162). Archeologically this transportation network can be seen through a comparison of several artifact categories found at Michilimackinac, St. Joseph, and the Guebert Site. Two groups of artifacts

**Figure 2 A Map Showing the Location of Comparative Sites
and the Trade Route Between Fort Michilimackinac
and the Mississippi Valley**



from the French Period--beads and iron knife blades, are particularly demonstrative of this trade pattern. Makers marks found on iron knives from these three sites illustrate that contact (either direct or indirect) between these sites did take place. Identical makers marks were found on knives from Michilimackinac, Fort St. Joseph, and the Guebert Site indicating the flow of goods to the south.

This is also true of comparisons of bead types and frequencies at the sites. Approximately 90 percent of the glass bead types found at St. Joseph were also found at Michilimackinac. Similarly, the large majority of beads appearing from the Guebert Site were found at both Michilimackinac and St. Joseph. One bead type, the simple construction milk white or "porcelain" bead was found in proportionately similar ratios and was the most frequent necklace bead found at each of the three sites.

This evidence demonstrated the link between Fort Michilimackinac and the Illinois country, and shows the role which Fort St. Joseph played as a secondary distributional center. Both iron knife blades and beads show the southward flow of goods from Michilimackinac, and suggests that other trade goods as well followed this same route.

The men which transported and traded these goods composed the bulk of the Fort's population until the end

of the French and Indian War in 1760 when the British assumed control of the post. Even after British takeover, these French traders remained at the post. The time period of trade at the Fort probably began in 1691 with the establishment of the military post, and continued throughout the eighteenth century. Trade during the post-1760 period would have been shared between English and French entrepreneurs with the latter being gradually driven-out of, or incorporated in, the English or perhaps Indian way of life.

Many artifacts normally associated with trade are present in the Fort St. Joseph collections. These include such items as beads, rings, various forms of ornamentation, bells, mouth harps, awls, needles, scissors, pins, thimbles, kettles, strike-a-lites, fishhooks, harpoons, metal projectile points, axes, and knives--to mention only a few. The fact that many of these artifacts are not good chronological indicators makes any division within the 1691-1760 time range very difficult. Considering the larger trading population at Fort Michilimackinac, one would expect to find fairly wide variations in artifact frequencies between the two sites. This is not, however, always the case. In two instances, metal projectile points and C-shaped wire bracelets; the Fort St. Joseph sample was more frequent in both number and type. One explanation for this phenomena is that these goods were more extensively distributed

during the pre-1715 period. Similar bracelets and points have been found at the Lasanen Site 1670-1715, suggesting that this premise may be correct. In addition, the same might be said for spearheads which are found at Fort St. Joseph but do not occur at Michilimackinac.

The fact that similar goods occur at both Fort St. Joseph and Fort Michilimackinac is important in that it demonstrates the dependence of Fort St. Joseph's economy upon trade and upon Fort Michilimackinac for its supply of trade goods. Trade was the bread and butter of the Fort's existence. The large amount of trade goods which have been collected from the site, as compared to the smaller number of clearly identifiable personal goods, may also suggest a small European population engaged in a great deal of trade.

It is very difficult to estimate the population of a site based solely upon the frequency of artifacts, and any conclusions must be viewed cautiously. The extent to which the French assimilated Indian customs and dress is one major factor of consideration in determining population density. In Louisbourg, Quebec, and Montreal the French culture was firmly implanted into the new world and was merely a continuation of the French society. This however was not necessarily the case at the frontier outposts such as Fort Michilimackinac or Fort St. Joseph where interaction with the Native peoples was greatly

intensified through trade, alliances and the necessities of survival. At these frontier sites the French often adopted the modes of dress and material culture of their Indian counterparts. In relation to the question of population density at Fort St. Joseph, the fact that relatively few personal items of dress such as buttons and buckles are represented in comparison to Fort Michilimackinac may reflect either a smaller and/or culturally different population. It is quite possible that the low frequencies of these artifacts from Fort St. Joseph may be a result of the degree to which its inhabitants adopted the Indian lifestyle.

The third group known to have occupied the site is the French military. With the establishment of the post in 1691, French military personnel occupied the Fort until 1699 when it was officially abandoned. Reinstated in 1717, and garrisoned until 1760, the Fort served the purpose of regulating trade and asserting French dominance in the area. The artifactual traces of these fifty-one years of military presence is very scanty. Buttons, and possibly gunparts, and musket balls provide the only evidence of a French military occupational period. This low frequency of military related artifacts demonstrates the nonmilitary orientation of the Fort. Charlevoix's 1721 description of the "sorry . . . indifferent palisade" also attests to the lack of interest in traditional military

concerns. Rather, the military personnel at the Fort probably were concerned mostly with trade and profit rather than with defense. An isolated post such as St. Joseph may have garrisoned military personnel without traditional uniforms or arms, thereby accounting for the extremely low frequency of military artifacts. In addition, so small a garrison as ten men may not have been of sufficient size to create a great deal of deposition. Without archeologically excavated features and materials, very little can be inferred about the military population at the site, except that it was low and not prominent in the affairs of the site.

Artifacts from the period 1687 to 1760 were therefore the result of deposition by Jesuit Missionaries, French traders, and the French military. The primary function of the Fort was to carry-on trade with nearby Indian groups and to maintain Indian loyalty to France through gift giving and alliances. These French people were mostly low status individuals more concerned with survival than with surrounding themselves with the fineries of life. Very few artifacts of the French Period point towards the presence of high status individuals or groups among the general population of traders, soldiers, and craftsmen. At Michilimackinac, many more artifacts were recovered which indicated the presence of high status individuals. At that northern site, high status

individuals included military officers, volume traders and their families.

British Period 1761-1781

During the British Period of occupation at Fort St. Joseph, two new groups--the British military, and the British trader--were included in the Fort's population. With the French military surrender of Fort St. Joseph in October of 1761, British soldiers from the 60th and 80th Regiments assumed control of the post (Weissert 1923: 76). Although the French military removed themselves from the Fort at that time, the French trading population probably remained at the Fort for at least the early portion of the British Period.

Artifacts identifiable with the British military occupation of the Fort consist primarily of Regimental buttons and gunparts from Brown Bess muskets. Although Fort St. Joseph was never regularly garrisoned after Pontiac's uprising of 1763, one button from the King's 8th Regiment is present in the collections. This regiment reportedly did not serve at Fort St. Joseph, but was stationed at Fort Michilimackinac from 1774 to 1781 (Stone 1974: 49). This indicates that contact between the two sites likely took place during that period, and that the possibility does exist that some British military personnel lived at Fort St. Joseph throughout the British Period.

Throughout the French and British Periods of occupation several Indian groups lived and traded in close proximity to the Fort. Among these groups are Miami, Potawatomi, Ottawa, Kaskaskia, Kickapoo, Mascouten, and Wea; the foremost two of which were permanent residents of the Fort area--the Miami until 1704, and the Potawatomi from that time throughout the Fort's occupation. Artifacts of Indian manufacture consist of beads, harpoons, tinkling cones, stone pipes as well as other assorted artifacts fashioned from bone, stone, and shell. Dating these locally manufactured aboriginal elements is not possible, nor is it possible to assign cultural origins to specific items. Trade goods from the British Period are also abundant in the Fort St. Joseph collections.

With the coming of British military personnel to the Fort, so also came the British trader. Many of the trade goods brought to the site such as kettles, strike-a-lites, awls and mouth harps were traded during both the French and British Periods. Other artifacts of various categories probably ended with the coming of the British in the 1760s. Conversely, several new types of artifacts were introduced during the British Period of the site's occupation. Trade silver and glass-inset jewelry are two such artifact groups used primarily by British traders. The Northwest Gun was also introduced to the Indians at

this time and continued to be the primary trade musket in the area until about 1820 (Hanson 1956: 20).

A wide variety of nontrade artifacts also date from the British Period, among which are silver spoons, pewter porringers, and ceramics (creamware, Elersware, saltglazed stoneware, Chinese export porcelain, transfer printed wares, etc.). Some of these items suggest a standard of living much higher than during the previous French Period.

During the French Period of occupation, Fort St. Joseph was primarily oriented towards trade and subsistence. Status differences, as seen through the artifact collections, are not highly differentiated for that period. The following British Period is however marked with artifacts of a higher order, reflecting a greater emphasis on status directed goods.

British traders and soldiers were culturally very different than their French predecessors. English society, and especially the military, were highly structured and differentiated based upon social position and status. In contrast, English traders and soldiers were rigid in respect to retaining their European identity. The presence and frequency of imported goods dating from the English occupational period reflects the difference in orientation between the two cultures. This was also found to be the case at Fort Michilimackinac, where Stone (1974: 354) notes that British and French material possessions

"differed not only in degree but in kind." He goes on to conclude that the diversity of British possessions reflected "not only a difference in the degree of social complexity between the two societies but also a difference in cultural norms which characterized the French and British occupations" (Stone 1974: 354). These cultural differences appear to have manifested themselves at Fort St. Joseph as well, although not to the same degree as at Michilimackinac, due to variations in population density and complexity.

Post-1781 Period

In February of 1781, Fort St. Joseph was attacked and destroyed by Spanish forces from the Cahokia area of Illinois. The attacking force composed of Spanish militia, volunteers, and Indians captured and occupied the Fort for less than a day (Idle 1946: 287). The Fort was then looted of supplies and burned to the ground--being completely destroyed except for the church (Cunningham 1961: 79).

No artifacts are present in the Fort St. Joseph collections which are identifiably Spanish in origin. Therefore, there is no evidence other than historical documentation for the Spanish occupation of the Fort.

In addition, although the fort was supposedly destroyed by fire, only two types of artifacts appear visibly burned--glass and nails. The first of these

categories consists of blue-green bottle glass which has been melted to a slag-like form. Since these fragments date to the French Period they were probably not in use in 1781. The possibility of a previous fire at the Fort does remain, although no mention is made in the historical literature. Nails constitute the second artifact group which bear visible signs of burning, however only 10 to 15 percent of the sample have actually been burned. This percentage is not large enough to suggest total destruction by fire. In addition, the practice of reclaiming iron nails through burning unused timbers was common through the eighteenth century and this alone could account for the number of burned nails. The artifact collections therefore do not discount the possibility of a large fire at the Fort, but also do not completely confirm the "destruction through fire" hypothesis.

Further examination of the nail sample from Fort St. Joseph and its comparison to that of Fort Michilimackinac reveal a great deal of similarity, and may suggest that at least some of the house types at St. Joseph may have been similar to those of the northern fort. Structural hardware such as locks, pintles, hinges, staples, door latch catches, door and shutter hooks, keys, and key hole escutcheons are also quite similar in occurrence but vary in frequencies of specimens and types. The fact that identical specimens (locks, keyhole escutcheons) are found

at both sites suggests that both were supplied by a common source. That source may have been located at Fort Michilimackinac or may have been European. A total overview of the structural artifacts from Fort St. Joseph reveals that they are predominantly of French origin, as they are at Fort Michilimackinac. French house types and structures built during the 1691 to 1760 French Period would have therefore been utilized by later British and perhaps American occupants.

The house forms built by the French consisted of box-like structures formed from upright posts set into a footing trench. This method of construction was used on most French Period structures at Michilimackinac and Ouatonenon. Chimneys and hearths were probably of stone, wattle and daub construction, and roofs were shingled or barked. Although no window glass was found in the St. Joseph collections, comparison to other sites suggests the probability that windows were glassed. At Michilimackinac where the population was large and the emphasis more military than at Fort St. Joseph, house types were probably larger and better constructed. In contrast, the house forms at St. Joseph were probably smaller as they have been found to be at other isolated outposts such as Ouatonenon (Tordoff 1976). There is also the possibility that aboriginal house forms were also utilized at the site, such as those used by the nearby Miami and Potawatomi

groups. These structures consisted of round or ovoid wood frames covered with bark or reed mats (Kinietz 1972: 170, 314). A roughly constructed palisade or stockade is known to have been in use in 1721 and this was probably expanded several times with increased population and structures.

The sequence of events which took place at Fort St. Joseph after the attack in 1781 is not known, however the sequence is well documented for northern Michigan. Throughout the history of Fort St. Joseph, Fort Michilimackinac to the north had played a large role in directing and supplying the inhabitants of that southern post. In 1780 and 1781 Fort Michilimackinac was moved to the safety of Mackinac Island and there renamed, Fort Mackinac. This fort served the British until 1796 when it was relinquished to American control. During the period 1812-1815 the British again resumed control of the fort due to the war. After the War of 1812, Americans re-garrisoned the fort until its abandonment late in the nineteenth century. British and American settlement in northern Michigan may have been responsible for similar settlement and trade in the Fort St. Joseph area.

The post-1781 population at Fort St. Joseph was probably a broad mixture of groups including British soldiers and traders, American military personnel, Indian groups, and perhaps a lingering French population. Artifacts in the Fort St. Joseph collections indicative of the

post-1781 period consist of buttons with embossed backs, trade silver, late TD and other decorated Kaolin pipes, transfer-printed earthenwares, and Northwest Trade Gun parts. These artifacts could have been used or traded by any of the aforementioned groups. In addition, one "frog legged eagle" button from Wayne's Legion is also present which dates from 1792 to 1798 (Campbell 1965). This American military company served at Fort Mackinac after the American takeover in 1796. It is therefore quite probable that some American forces either visited or were stationed at Fort St. Joseph shortly prior to the War of 1812.

The low frequency of artifacts from the post-1781 Period, in comparison to the earlier French and British Periods, suggests that no more than intermittent visitors or a small fluctuating permanent population occupied the Fort in the 1781 to 1820 period.

These primary occupational periods at Fort St. Joseph span the years 1687 to 1820. Although geographically an isolated post, Fort St. Joseph grew to become a major center of trade for European expansion into the Illinois country. Until archaeological excavations confirm the precise location of the post and mission the history of Fort St. Joseph and the culture of its inhabitants will remain a mystery. This study has shed some light onto the story of Fort St. Joseph and its people, however, a great deal more remains to be discovered about this fort of four flags.

APPENDICES

APPENDIX A

DESCRIPTION OF ARTIFACTUAL MATERIAL

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DESCRIPTION OF ARTIFACTUAL MATERIAL

Artifacts recovered from the Fort St. Joseph area are placed into sixty distinct artifact categories. Some of those groups are quite broad in scope, such as beads or trade silver, while others are artifact specific and refer to single items like a hammer or spontoon. Within each category a description is provided which is organized into either a formally or informally structured format. Where the artifact sample is generally small and homogeneous, the informal method of presentation is normally used. This consists of a description of the group in paragraph form, stating artifact frequency, physical characteristics, and comparative information. Complex typological studies of small artifact samples only serve to confuse the reader rather than to provide useful comparative descriptions. Concise descriptions often coupled with photographic illustrations will therefore be used to informally present a number of artifact categories.

Where the artifact sample is larger and/or more complex, a formalized description will be provided. The formal classificatory guidelines for artifact presentation

have been outlined by Stone (1970: 90-102) and are used in relation to many of the Fort St. Joseph categories. These are:

- (1) Compare all specimens within a given artifact category and note the physical properties which they possess.
- (2) Evaluate the properties identified and decide which will be used as classificatory attributes and which will be used as descriptive measures.
- (3) Rank the attributes in terms of their relative formal importance. This step is especially subjective since the observer must decide which attributes are of primary importance, and which should be relegated to lower levels of the classification. Depending upon the background and focus of the observer, the ranking of attributes may vary considerably from person to person.
- (4) Name the different ranked levels and describe the attributes upon which the distinctions are based.
- (5) Sort the artifacts according to the defined attributes and assign them to specific levels based upon three rules:
 - (a) Only one basis of attribution can be used on each level unless a functional relationship can be demonstrated.
 - (b) Each level must place the artifacts into mutually exclusive groupings.
 - (c) All classes of artifacts must be exhaustive and must be flexible enough to permit the introduction of new specimens without extensive revision.

These five steps allow for the classification of artifact samples into cohesive groups unbiased by any specific interpretive problem. Although the construction of formal classifications is highly dependent upon the observer, an effort should be made by individuals to be internally consistent in their construction of typological formats, and to provide enough descriptive information so that

comparative studies are facilitated. Artifact measurements, photographs, distributional data, and temporal considerations should be provided in each classification whenever possible or practical.

Many of the formal classes constructed by Stone (1974) have been applied to the artifact samples from Fort St. Joseph, although most have been partially modified and expanded in order to better accommodate this set of data. This has been done to facilitate comparisons of artifact types and frequencies between Forts Michilimackinac and St. Joseph, which are closely related sites in cultural and temporal dimensions. On the other hand, some descriptions used in this monograph have been constructed specifically for the St. Joseph material. This is necessary because in some cases the Fort St. Joseph sample included categories of artifacts poorly represented at Fort Michilimackinac such as C-shaped bracelets, trade silver, or metal projectile points while other categories such as gunparts or stone pipes were not considered by Stone.

Stone (1974) divided the artifact sample from Fort Michilimackinac into broad sections such as personal, structural, household, and craft or activity contexts. Although this method of division has merit, the contexts defined by Stone are not necessarily mutually exclusive and to some extent bias or confuse the reader. To avoid

this situation the artifact categories from Fort St. Joseph are presented in alphabetical order, in the hope that a convenient and unbiased access to the artifact descriptive information can be obtained. Although the categories are for the most part exclusive of one another, some overlap may occur when a broad artifact group such as trade silver cross-cuts other categories such as bracelets, pendants, tinkling cones, etc. In cases where overlap occurs, a cross reference is provided.

Since the Fort St. Joseph collections were the result of surface collections, little contextual information is available. Comparison with geographically, culturally, and chronologically similar sites is therefore essential for dating and interpreting the St. Joseph material. Because Fort Michilimackinac acted as the supply depot for supplies traveling to Fort St. Joseph, that northern site is of primary importance in the comparative scheme and forms the basis for interpreting similar artifactual materials. Numerous other historic sites in Michigan, Illinois, and Indiana were also quite similar to Fort St. Joseph in one aspect or another and are referred to in this monograph. These sites are listed in Table 1.

Table 1.--List of Comparative Historical Sites.

Site	Time Range	Sources
Ft. Michilimackinac, MI	1715-1781	Stone (1974), Brown (1971), Miller and Stone (1970), Hamilton (1976, Maxwell and Binford (1962)
Ft. Ouiatenon, IND	1717-1791	Tordoff (1976)
Fletcher Site, MI	1750-1780	Mainfort (1976)
Lasanen Site, MI	1670-1715	Cleland (1971)
Marquette Mission, MI	1671-1705	Stone (1972)
Guebert Site, IL	1719-1833	Good (1972)
Ft. Ligonier, PENN	1758-1776	Grimm (1970)
Gros Cap, MI	1670-1705	Quimby (1963), Nern and Cleland (1974)

AWLS

Awls were a common trade good during both French and British occupation in North America. The awl itself is a shaft usually of iron, tapered on one or both ends and generally square in cross section, which is used as a punch for working in leather, wood, or other pliable materials. Awls were meant to be hafted into handles of bone or wood in order to facilitate use.

In the Fort St. Joseph collections at Niles, forty-seven specimens are present. These can be divided into two types based upon differences in hafting mechanisms.

Type 1 Straight shaft

Variety a Proportionately tapered

Figure 3 A through J, L, M, N

44 specimens

These specimens exhibit straight shafts, square in cross section, which taper evenly from the center to both ends. Due to the fragmentary condition of many specimens, size categories are not definable within such a small sample. Length range 11.7 to 5.2 cm. (mean 8.8 cm.)

Variety b Disproportionately tapered

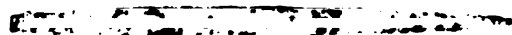
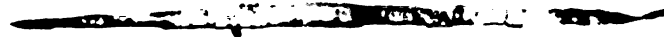
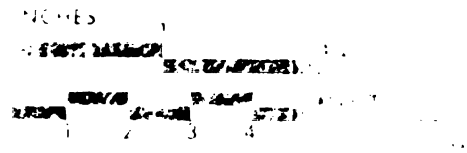
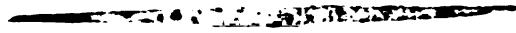
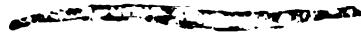
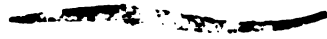
Not illustrated

1 specimen

This specimen exhibits a straight shaft which tapers evenly from the center to one tip, while the other side tapers sharply and then proceeds with a

Figure 3 Awls

Figure Designation	Taxonomic Designation
A thru J	T1, Va
K	T2, Va
L thru N	T1, Va



nontapered shaft. This latter half of the awl is markedly thinner than the other half. The half which is thinnest is probably inserted into the handle, thereby providing a more secure haft for the awl.

Type 2 Offset shaft

Variety a Proportionately tapered

Figure 3 K

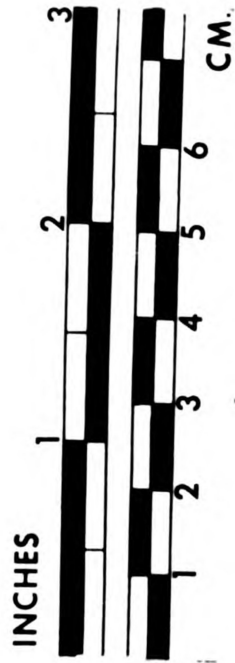
2 specimens

These specimens exhibit shafts round at the ends and becoming square at the centers. The shaft tapers evenly from the center to the tips, however the shaft is not straight, but is offset approximately five mm. in the center. Strong pressure through use often forced an awl deeper into the handle thereby splitting it or causing injury to the user. An offset shaft would on the other hand, produce a stop between the center of the awl and the handle, thereby eliminating this problem.

Two T1 Va specimens are present in the collections of the Northern Indiana Historical Society Museum in South Bend. These specimens have been hafted into bone handles which are 6.8 cm. (Figure 4A) and 8.3 cm. (Figure 4B) in length. The awl shafts themselves are approximately 7 to 10 cm. in total length.

At Fort Michilimackinac, 327 awls were recovered and were grouped by Stone (1974: 155-159) into types based upon variations in handle attachment. Of this total, 45 specimens had offset shafts, 252 had straight shafts, and the remaining were unusual knobbed or notched specimens. Based upon associated data, Stone dates offset shaft awls between 1735 and 1781, while the straight shafted specimens date throughout Michilimackinac's occupation; 1715-1781 (Stone 1974: 154).

Figure 4 Awls with Handles

**A****B**

AXES

Seven axe heads are represented in the Fort St. Joseph collections in Niles. Of the seven, six are the "trade style" axes with round polls and straight upper blade edges. The seventh specimen is a square polled axe with pronounced side ears. Neumann (1973: 264) attributed this style to late eighteenth century English manufacture

Type 1 Iron with a steel inset blade

Specimen #1

Figure 5A

This specimen has a length of 14.6 cm., and a blade width of 6.9 cm. Its overall weight is 1.0 pound or 453.6 grams. The small size and light weight of this specimen suggests use as a belt axe rather than that of a felling or camp axe.

Type 2 Iron with no steel blade inset

Speciman #1

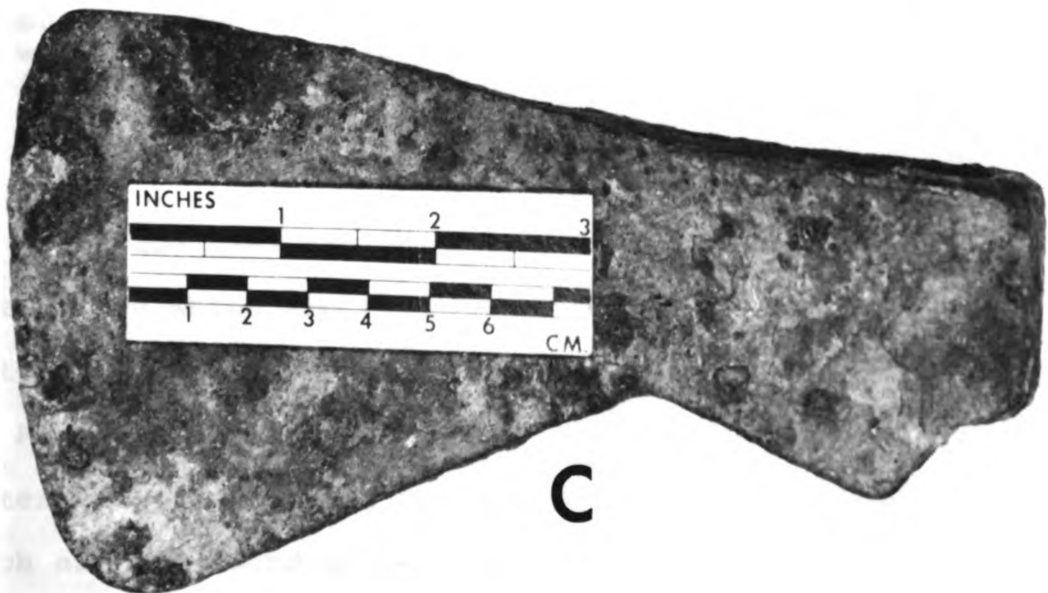
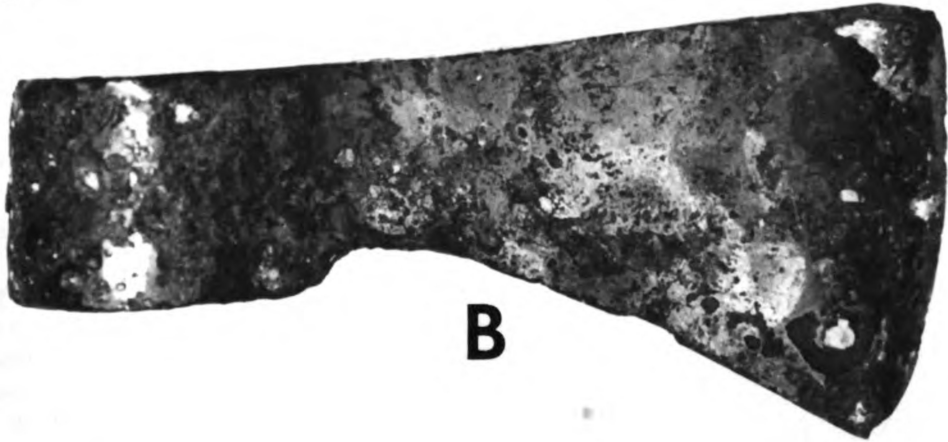
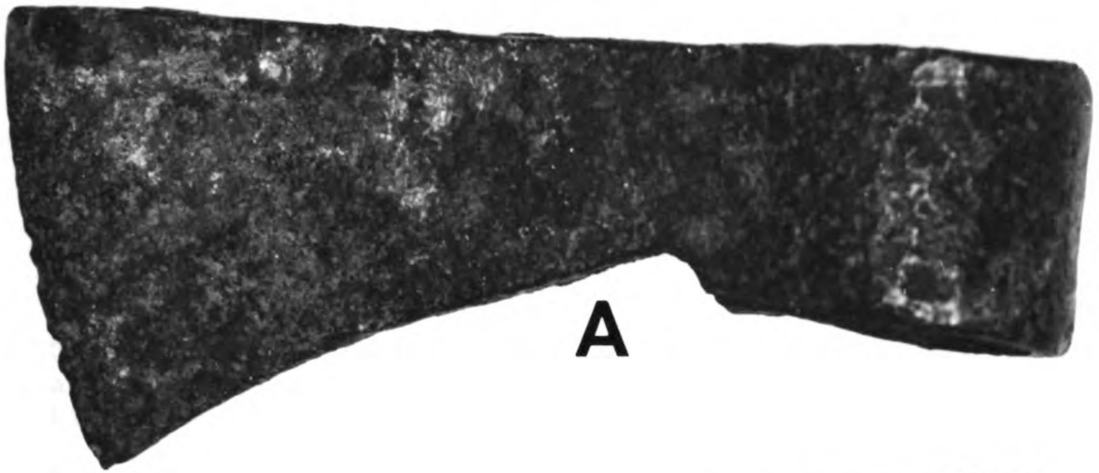
This specimen has an overall length of 14.3 cm., and a blade width of 5.6 cm. Weight is 15.5 ounces or 439.4 grams. It was probably utilized as a belt axe.

Specimen #2

This specimen has a broken eye which makes measurements of length and weight difficult. Length is approximately 15.0 cm., blade width is 6.7 m. Utilization as a belt axe or small camp axe is possible.

Figure 5 Axes

Figure Designation	Taxonomic Designation
A	Specimen #1
B	Specimen #5
C	Specimen #7



Specimen #3

This specimen has an overall length of 15.3 cm., however the blade has been severely blunted and could have been longer when new. Blade width is 7.8 cm., weight is 1.0 pound 6.5 ounces or 637.9 grams. The greater weight of this specimen as well as its thickened neck suggests use as a heavy belt axe or as a camp axe.

Specimen #4

Figure 5B

Overall length is 17.5 cm., blade width is 7.5 cm., and the weight is 1.0 pound 9.3 ounces or 718.2 grams. Probable use: heavy belt axe or camp axe.

Specimen #5

Overall length is 19.1 cm., blade width 10.5 cm. The weight is 3.0 pounds 11 ounces or 1672.6 grams. The large size and heavy weight suggests use as a felling axe.

Specimen #6

Figure 5C

This specimen exhibits a curved top blade edge and round blade tips. In addition, pronounced ears, and a square poll is present. The construction of this axe is similar to that of the trade axe styles with folded bands forming the poll and eye. Neumann (1973: 264) suggests English affiliation for similar specimens within a late eighteenth century time range. Length is 16.5 cm., blade width 9.5 cm., weight 1.0 pound 3 ounces or 538.69 grams. Probable use as a household axe or light felling axe is likely.

Trade axes are documented from numerous historic sites among which are Fort Ouiatenon (Tordoff n.d.), Fletcher Site (Mainfort n.d.), the Guebert Site (Good 1972), and Fort Michilimackinac (Stone 1974: 155-158). At the latter site twenty-five specimens were recovered all of which are the round polled trade axe style similar to those found at Fort St. Joseph (Stone 1974: 297-298).

BALE SEALS

Bale seals are lead discs which were attached to bundles of commercial goods for purposes of identification. The seals identified the manufacturer, consigner, or merchant and oftentimes the place and/or date of origin. These seals were made in one or two pieces and were marked with cast or embossed designs and characters. Two-piece seals consisted of a frontpiece with an open center which was joined to a backpiece with a corresponding knob or knobs by means of a thin strap-like band. When the seal was applied to a package, the back knobs engaged the holes in the front piece and through pressing the protruding knobs, were flattened--thereby joining the two halves permanently together. During the pressing procedure, an embossed design was left on one or both sides of the discs. In those cases where only one side was embossed, the blank side was used to display a scratched tally number or quality designation.

In contrast, the one piece seals were more often cast on both faces, and were joined to a package by means of a wire(s) passed longitudinally through the body of the seal. The collections from Fort St. Joseph contain a

total of thirty-one bale seals, twenty-eight of which are two-piece knob attached, with the remainder being wire attached. These specimens can be classified and described as follows:

Series A Knob method of attachment

Type 1 Single knob

21 specimens

The halves of these specimens were joined through the pressing of a single protruding knob.

Variety a

Figure 6A

Obverse: the central motif consists of a canoe scene with five people, one of whom is standing. Three paddles extend from the canoe to the water, while a five-pointed star hovers over the heads of the passengers. On the border surrounding the central design are the letters (W)EAN · MA-----ETTE
Reverse: the numbers 3903 scratched into the seal

Variety b

Figure 6B

Obverse: a large number 5 surrounded by a beaded border design, and the letters BUCK--ER SHAW·
HALIFAX
Reverse: '4' stamped into the knob

Variety c

Figure 6C

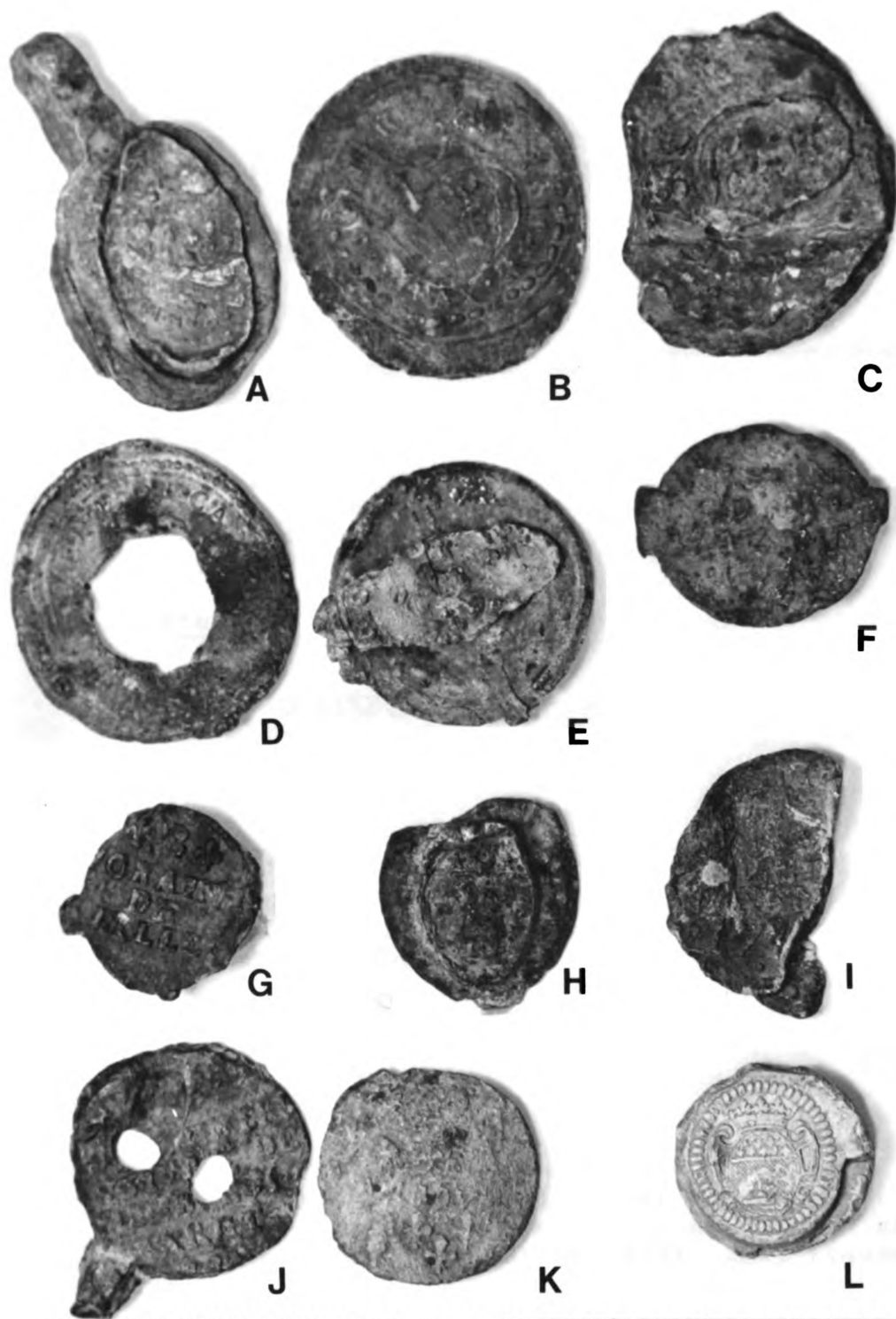
Obverse: the script letters LEW surrounded by the block letters FSEYME + CO
Reverse: scratched 65

401

Comments: on the reverse of this specimen and several others, the top digits are deeply impressed while the lower ones are more crudely scratched. This suggests that some, if not all of the seals, were inspected or graded by more than one individual at more than one time.

Figure 6 Bale Seals

Figure Designation	Taxonomic Designation
A	SA, T1, Va
B	Vb
C	Vc
D	Vd
E	Vd
F	Ve
G	Vf
H	Vg
I	Vh
J	SA, T2, Va
K	SA, T1, Vi
L	SB, T1, Va



Variety d

Figure 6D,E (composite from two specimens)

Obverse: the central motif consists of a fleur de lis with a 'D' and 'B' on its left and right sides respectively, and the letters ---RAP overhead.

The border of the seal contains the letters RJOVE
DE·CARCA

Reverse: none

Variety e

Figure 6F

Obverse: -----N with a small fleur de lis below the letter 'M'

·DE·

-AZAMET

Reverse: not distinguishable

Comment: a similar specimen is reported from Michilimackinac, although it has two-knob attachment. See Stone (1974: 290, Figure 177V).

Variety f

Figure 6G

Obverse: ORAINE

DE

LILLE

Reverse: none

Variety g

Figure 6H

Obverse: star-crescent moon-star over a lion rampant and with the letters R,P on each side

Reverse: 28 - 1/4
2294

Variety h

Figure 6I

Obverse: DE MASAM 174- -SIT-

Reverse: three fleur de lis over bird motif

Comments: similar specimens have been found at Michilimackinac. See Stone (1974: 284, figure 174 G,M).

Variety i

Figure 6K

Obverse: E surrounded by six fleur de lis
AM(I)OUN in two groups of three each

Reverse: not distinguishable

Variety j

Not illustrated

Obverse: ---NDON

Reverse: none

Variety k

Not illustrated

Obverse: -TR-RE
NE(S)N

Reverse: 976 scratched

Type 1 Comments:

An additional 13 Series A, Type 1 specimens are present but cannot be described due to lack of design and to their fragmentary nature. Two of the specimens exhibit reverses with 388 and T scratched into them, while the

L4

6

23

obverse of one specimen exhibits a single distinguishable fleur de lis. Pairs of letters such as AN, LL, NE, ME can be also distinguished on some obverses but cannot be further identified.

Type 2 Double knob

5 specimens

These specimens exhibit two knobs or two openings in their disc segments.

Variety a

Figure 6J

Obverse: EMER
S·IV-R DE
-----·B -----
ARET

Reverse: none

Variety b

Not illustrated
 Obverse: ---INOI---
 Reverse: none

Variety c

Not illustrated
 Obverse: --74--
 Reverse: none

Type 2 Comments:

Two additional Type 2 specimens are present but cannot be described due to their fragmentary nature.

Series B Wire method of attachmentType 1 Double wire attachmentVariety a

Figure 6L
 2 specimens
 Obverse: coat of arms (crown on shield) with beaded rim.
 Reverse: letters CDI inside wreath
 -C
 Comment: this type of seal has also been found at Fort Michilimackinac. See Stone (1974: 294, figure 179C).

GLASS BEADS

The manufacture of glass trade beads has been widely discussed in the literature (Stone 1974: 88-89; Kidd and Kidd 1970: 46-50; Sleen 1967: 22-27) and will therefore not be reiterated here in any great detail. The 70,000 glass beads found in the collections of Fort St. Joseph have been divided into two major divisions--necklace beads and seed beads. Although in general these two groups are divided on the basis of size, they can also be viewed as functionally distinct entities. Necklace beads, as their name suggests, were worn primarily around the neck as adornment, while seed beads were multi-purpose and could not only be worn around the neck but also sewn onto clothes. Since size is the primary distinguishing factor for the division between necklace and seed beads, a question arises as to the cut-off point between the two--that is, what size constitutes the necklace/seed bead division. Stone (1974: 88) states that

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.

Two primary methods of manufacture were used in the production of glass beads. These methods are the Hollow Cane and Mandrel Wound processes, and comprise the criteria for division into two major classes of beads. The Hollow Cane method consists of the production of a stretched glass tube which upon cooling is broken into desirable lengths and then polished or tumbled into a variety of shapes. On the other hand, the Mandrel Wound method produces beads by winding solid tubes of molten glass onto a metal core. After several twists around the core the glass is allowed to cool and the bead removed, to be tumbled in a similar manner to the hollow cane beads. This latter method can be visually distinguished from the former by the presence of circular striations in the body of the bead caused by the winding process.

Within the two broad classes of beads, four types of composition or construction are defined. They are simple construction, compound construction, complex construction, and composite construction. These types of construction are dependent upon the number of layers of glass and the presence of glass insets, so that simple construction refers to beads with only one layer of glass while compound distinguishes those beads with two or more

layers of glass of the same or different color. Complex beads are those which exhibit glass insets in the form of stripes, dots, etc., and composite refers to those beads which are both compound and complex having more than one layer of glass plus the presence of insets. These four types of construction are regarded as Series A, B, C and D respectively.

The next level of differentiation is dependent upon the overall shape of the bead. Shapes such as convex, convexoelongate, round, barrel, tubular, conical, doughnut, etc. are used to describe the most common shape of a bead grouping. These shape designations have been assigned to the level of "Type" while variations in color and clarity have been relegated to the lowest taxonomic level of "variety."

This formal classification of beads is based upon one proposed and used by Stone (1974) in the treatment of beads from Michilimackinac. Although other well respected typologies are available (Kidd and Kidd 1970), Stone's typology was used in order to facilitate close comparison within a relatively close geographical and socio-cultural region.

Bead colors are presented in two different manners. First, the beads are described in common terms of the combinations and divisions of the primary colors. In addition the Munsell System of color notation has been

used to provide precise comparisons within standardized colors. The Munsell System is based upon three attributes of color known as HUE, VALUE, and CHROMA. "Hue" refers to a color's relationship to red, yellow, green, blue or purple; while the "value" indicates the lightness of the color. The "chroma" designates the strength of the color--i.e., its relationship to neutral.

The symbol designation for the Munsell System is written with the hue first, and then followed by the value and chroma written in fractional form so that the value is the numerator and the chroma the denominator. A color therefore, which is 7.5 red in color, six in value and 10 in chroma is written as 7.5R 6/10.

As electric lighting distorts the true color and natural lighting enhances the color, all beads have been photographed in natural light.

Necklace Beads

Class I Hollow-Cane (Drawn)

Series A Simple construction

Type 1 Convex shape

Variety a Clear, translucent

Figure 7, Row A 1,2

5 specimens

Shape: convex to almost barrel

Length range 11.0-13.1 mm., width range 7.1-9.9 mm.

Variety b Blue-green (Munsell: greenish-blue, 2.5B 4/8), translucent

Figure 7, Row A 3,4

4 specimens

Length range 7.0-16.3mm., width range 5.5-11.9 mm.

Variety c Black, opaque

Figure 7, Row A 5,6

8 specimens

French 1710-1750

Length range 9.1-11.9 mm., width range 7.0-9.0 mm.

Variety d White, opaque

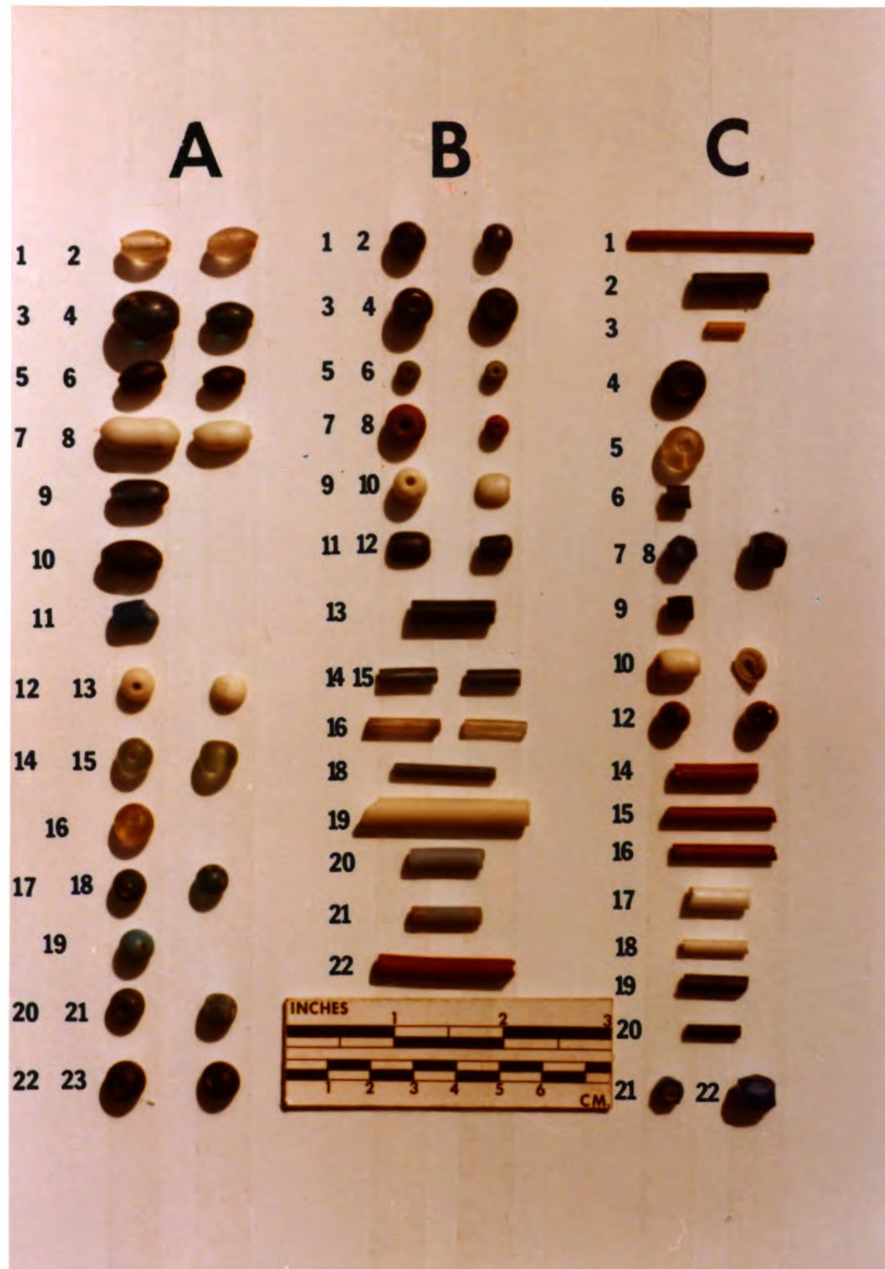
Figure 7, Row A 7,8

178 specimens (125 complete, 53 fragments)

Shape: convex to olive and through convexo-elongate to globular. This bead variety is widely distributed in North America, and has been found in large quantities at numerous sites, including Fort Michilimackinac in Michigan, and at the Guebert Site (Good 1972: 118-119) in Illinois. Based upon distributional

Figure 7 Necklace Beads

Figure	Designation	Taxonomic Designation
Row A	1,2	CI, SA, T1, Va
	3,4	Vb
	5,6	Vc
	7,8	Vd
	9	Ve
	10	Vf
	11	T2, Va
	12,13	T3, Va
	14,15	Vc
	16	Vb
	17,18	Vd
	19	Ve
	20,21	Vf
	22,23	Vg
Row B	1,2	Vh
	3,4	Vi
	5,6	Vj
	7,8	Vk
	9,10	T4, Va
	11,12	Vb
	13	T5, Va
	14,15	Va
	16,17	Vb
	18	Vc
	19	Vd
	20	Ve
	21	Ve
	22	Vf
Row C	1	Vf
	2	Vg
	3	Vh
	4	T6, Va
	5	Vb
	6	T7, Va
	7,8	Vb
	9	Vc
	10,11	SB, T1, Va
	12,13	T2, Va
	14	T3, Va, sub V 1
	15	sub V 2
	16	sub V 3
	17	Vb
	18	Vb
	19	Vc
	20	Vc
	21,22	T4, Va



evidence, Stone (1974: 90) concludes these beads to be of French origin within a 1710-1750 time range. The shape of these beads are not uniform and cover a wide spectrum of sizes and shapes. Many beads exhibit ends which have been cut or snapped. Approximately 40 percent of these beads appear compound in construction although they are not. It has been suggested that this is caused by changes in density while the beads are heated during the tumbling stage.

Length range 7.9-19.0, width range 6.5-9.9 mm.

Variety e Blue (Munsell: Purple-blue 5.0PB 3/12), translucent

Figure 7, Row A 9

1 specimen

Shape: convex to convexo-elongate

Length 14.1 mm., width 7.2 mm.

Variety f Royal Blue (Munsell: purplish Purple-blue 7.5PB 2/8), semi-translucent

Figure 7, Row A 10

1 specimen

Length 14.5 mm., width 8.6 mm.

Type 2 Convexo-elongate

Variety a Turquoise (Munsell: Blue purple-blue 10.0B 3/12), semi-translucent

Figure 7, Row A 11

1 specimen

This specimen is fragmentary, however it is complete enough to illustrate a distinct type.

Length 14.0 mm (estimated), width 7.0 mm.

Type 3 Round

Variety a White, opaque

Figure 7, Row A 12,13

90 specimens (44 complete, 46 fragments)

The distribution and affiliation of the bead type is identical to that of the previous

Type 1 Variety d specimens.

Diameter range 5.2-8.0 mm.

Variety b Clear, translucent

Figure 7, Row A 16
 6 specimens
 Diameter range 7.5-9.8 mm.

Variety c Clear to light green

Figure 7, Row A 14,15
 18 specimens (16 complete, 2 fragments)
 Diameter range 8.8-9.9 mm.

Variety d Blue-green (Munsell: greenish-blue 2.5B 4/8), translucent

Figure 7, Row A 17,18
 12 specimens
 Diameter range 4.5-8.5 mm. (8.0 average)

Variety e Turquoise (Munsell: greenish-blue 2.5B 5/6), opaque

Figure 7, Row A 19
 1 specimen
 This bead is completely hollow and consists only of a thin shell of glass with two holes.
 Diameter 8.0 mm.

Variety f Turquoise, opaque

Figure 7, Row A 20,21
 29 specimens (23 complete, 6 fragments)
 Shape: round to almost barrel
 Unlike Variety 'e', these beads are solid.
 Most of the beads have longitudinal striations and slight patination. The color is not uniform and varies in chroma and value.
 Diameter range 5.9-8.8 mm.

Variety g Green (Munsell: greenish-blue 2.5B 3/6), translucent

Figure 7, Row A 22,23
 10 specimens
 Diameter range 6.3-9.5 mm.

Variety h Royal Blue (Munsell: purplish purple-blue 7.5PB 2/8), translucent

Figure 7, Row B 1,2
 35 specimens (23 complete, 12 fragments)

Shape: round to almost barrel
Diameter range 5.5-9.0 mm.

Variety i Black, opaque

Figure 7, Row B 3,4
145 specimens (117 complete, 28 fragmentary)
Shape: round to almost barrel and occasionally doughnut or globular
These beads are quite irregular in size and shape, but are for the most part round. Several specimens (9) show intentionally flattened ends. Many appear to be compound in construction, but are not. Stone (1974: 93) assigns a 1710-1750 time range on these beads and suggests a French origin. Relatively low frequencies of these beads have been found at Fort Michilimackinac and at the Guebert Site. In outward appearance, these beads greatly resemble the previous Type 1 Variety d specimens, the only major difference being color. Diameter range 6.5-13.0 mm. Average 10 mm.

Variety j Light green, opaque

Figure 7, Row B 5,6
6 specimens (4 complete, 2 fragments)
Heavily striated, rough surface appearance similar to Variety f.
Diameter range 5.1-6.0 mm.

Variety k Red (Munsell: 5.0R 3/8), opaque

Figure 7, Row B 7,8
37 specimens
Although many specimens appear to be compound, they are actually of simple construction. Their composition is of swirled red glass layered almost in layers, and may represent changes in bead density during the tumbling process. No specimens similar to these beads have been found at Fort Michilimackinac, while seventeen were found at the Guebert Site.
Diameter range 6.0-10.0 mm.

Type 4 Barrel

Variety a White, opaque

Figure 7, Row B 9,10
25 specimens (16 complete, 9 fragments)

French, 1710-1750

Length range 6.0-8.1 mm., width range 6.0-8.0 mm.

Variety b Blue (Munsell: purple-blue 5.0PB 3/12), translucent

Figure 7, Row B 11,12

3 specimens

Length range 7.5-10.5 mm., width range 6.1-8.0 mm.

Type 5 Tubular

Variety a Blue (Munsell: Purple-blue 5.0PB 3/10), translucent

Figure 7, Row B 13,14

47 specimens

Of these examples, thirty-six beads are tumbled-nonfibrous, and eleven are nontumbled, fibrous.

There is a wide variation in color between specimens, with the hue fairly constant and with changes in value and chroma. The diameters of the beads are also quite variable, ranging from 3.9 to 6.0 mm., with a mean average of 4.5 mm.

Length range from 10.1 to 19.0 mm., with an average at 14.4 mm.

Variety b Clear, translucent

Figure 7, Row B 16,17

4 specimens

Of these examples, two beads are tumbled, non-fibrous and two are nontumbled, fibrous.

Diameter 3.3-3.6 mm. Average length 15.1 mm.

Variety c Blue-grey (Munsell: bluish purple-blue 2.5PB 4.5/4), opaque

Figure 7, Row B 18

1 specimen

This example is untumbled and exhibits fibrous striations.

Diameter 3.7 mm. Length 24.0 mm.

Variety d White, opaque

Figure 7, Row B 19

1 specimen

This example has been tumbled and exhibits no fibrous striations.

Diameter 6.9 mm., length 39.0 mm.

Variety e Grey-blue (Munsell: bluish purple-blue 2.5PB 6/3), opaque

Figure 7, Row B 20,21

8 specimens

Of these examples, five beads are tumbled, non-fibrous, and three are nontumbled, fibrous.

Diameter range 4.0-5.9 mm. Length range 10.0-19.0 mm.

Variety f Red (Munsell: 5.0R 3/8), opaque

Figure 7, Row B 22, C 1

8 specimens

Of these specimens, six are tumbled, nonfibrous, and two are nontumbled, fibrous.

Diameter range 3.9-6.0 mm. Length range 10.1-43.0 mm.

Variety g Amber (Munsell: yellowish red 7.5R 4.5/8), semi-translucent

Figure 7, Row C 2

3 specimens

Two specimens are tumbled nonfibrous, while the third is nontumbled, nonfibrous. All three examples appear black in color under normal light, but reveal their amber color under intense light.

Diameter 5.0 mm. Length range 17.4-19.0 mm.

Variety h Yellow (Munsell: 5.0Y 6/6), semi-translucent

Figure 7, Row C3

1 specimen

This example is tumbled and nonfibrous.

Diameter 3.0 mm. Length 9.1 mm.

Type 6 Doughnut shape

Variety a Black, opaque

Figure 7, Row C 4

8 specimens

Diameter range 7.0-12.3 mm.

Variety b Clear, translucent

Figure 7, Row C 5
 1 specimen
 Diameter 10.0 mm.

Type 7 Round to oblong - multi-facetedVariety a Blue (Munsell: purplish purple-blue 7.5PB 3/7), translucent

Figure 7, Row C 6
 1 specimen
 This example is hexagonal in cross section with six parallel facets running the length of the tubular-like bead.
 Length 5.8 mm. Width 5.0 mm.

Variety b Royal blue (Munsell: purplish purple-blue 7.5PB 2/9), translucent

Figure 7, Row C 7,8
 5 specimens
 These examples exhibit eighteen to twenty-eight irregular facets on a convex-shaped body. The facets are generally placed in three rows and appear to have been ground.
 Diameter range 5.9-8.0 mm.

Variety c Amethyst (Munsell: reddish purple 7.5P 4/9), translucent

Figure 7, Row C 9
 1 specimen
 This example exhibits sixteen irregular facets on a tubular to slightly convex body. Under normal light the specimen appears very dark red to black, but intense light reveals the amethyst color.
 Diameter 5.9 mm. Length 6.0 mm.

Series B Compound constructionType 1 Convex to elongateVariety a White, opaque

Figure 7, Row C 10,11
 8 specimens
 White inner core covered by an additional layer of white glass. In outward appearance these beads resemble Series A, Type 1, Variety 'd'

specimens, however, they are definitely of compound construction.
Length range 8.7-13.0 mm. Width range 6.4-8.0 mm.

Type 2 Round to barrel

Variety a Red (Munsell: yellowish red 7.5R 3/6), opaque

Figure 7, Row C 12,13
11 specimens (9 complete, 2 fragments)
Green (Munsell: greenish green yellow 8.0GY 6.5/10) translucent core covered by a layer of red opaque glass, and then covered overall by an additional layer of clear glass. This bead variety is commonly referred to as Cornaline D'Aleppo and has been found in numerous sites in North America. According to Good (1972: 122), the large sized beads of this type do not appear until around 1740.
Diameter range 5.0-8.2 mm.

Variety b White, opaque

Not illustrated
57 specimens (53 complete, 4 fragments)
White body covered by a thin layer of clear glass.
Diameter range 4.0-20.0 mm. Average diameter 5.9 mm.

Type 3 Tubular

Variety a Red (Munsell: yellowish red 7.5R 4/6), opaque

Figure 7, Row C 14-16
78 specimens
These specimens are all basically the same in outward appearance--having a dark inner core and a red outer covering. However, upon close observation three variants of the basic style are apparent.

Variant 1 Green core, red layer, clear layer
Row C 14
66 specimens
Of these examples thirty are untumbled, nonfibrous; twenty-nine are tumbled, nonfibrous;

- and seven are untumbled and fibrous.
 Diameter range 3.1-5.0 mm.
- Variant 2 Green core, red layer, green layer, red layer
 Row C 15
 4 specimens
 All specimens are nontumbled and nonfibrous.
 Diameter range 3.0-4.3 mm.
- Variant 3 Red core, green layer, red layer
 Row C 16
 1 specimen
 This example is nontumbled, non-fibrous.
 Diameter range 3.9 mm. Length 25.1 mm.

Variety b White, opaque

Figure 7, Row C 17,18
 112 specimens

White core covered by a thin layer of clear glass. Of these specimens, eight are tumbled and the remaining untumbled. Only one untumbled specimen is fibrous although several of the beads exhibit a crazing of the outer glass veneer.

Diameter range 4.0-5.2 mm. Length range 3.6-14.7 mm. Average 4.5 mm.

Variety c Blue (Munsell: purplish purple-blue 7.5PB 2/8), opaque

Figure 7, Row C 19,20
 12 specimens

Blue core, white layer, blue outer layer. All specimens are untumbled-fibrous.

Diameter range 3.5-4.1 mm. Length range 10.0-15.9 mm.

Type 4 Convex to oblong-multifaceted

Variety a Blue (Munsell: purplish purple-blue 7.5PB 3/7), semi-translucent

Figure 7, Row C 21,22
 6 specimens

White or light blue inner core covered by a faceted blue layer. The facets are irregular and range from 18 to 31 per bead. This variety

is similar in appearance to Series A, Type 7, Variety a specimens.
Diameter range 6.5-8.2 mm. Length range 4.2-9.2 mm.

Series C Complex construction

Type 1 Convex shape

Variety a Blue (Munsell: purplish purple-blue 7.5PB), semi-translucent; 8 White striped insets.

Figure 8, Row D 1,2

6 specimens

Shape: convex to convexo-elongate

The insets run parallel from end to end.

Length range 9.1-9.4 mm. Width range 7.2-8.1 mm.

Variety b White opaque; 3 sets of 3 striped insets alternating red-blue-red

Figure 8, Row D 3

1 specimen

Red stripes (Munsell: 5.0R 4/10), Blue stripes (Munsell: 2.5PB 4.5/10). Stripes run end to end.

Length 13.1 mm. Width 8.0 mm.

Variety c Blue-grey (Munsell: purple-blue 5.0 PB 4/4), opaque; 3 sets of 3 striped insets alternating white-red-white.

Figure 8, Row D 4

7 specimens

Red stripes (Munsell: 5.0R 4/10)

Stripes run end to end

Length range 10.0-15.2 mm. Width range 6.1-7.5 mm.

Variety d Black opaque; 3 sets of 3 striped insets alternating white-red-white

Figure 8, Row D 5

3 specimens

Red stripes (Munsell 5.0R 4/10)

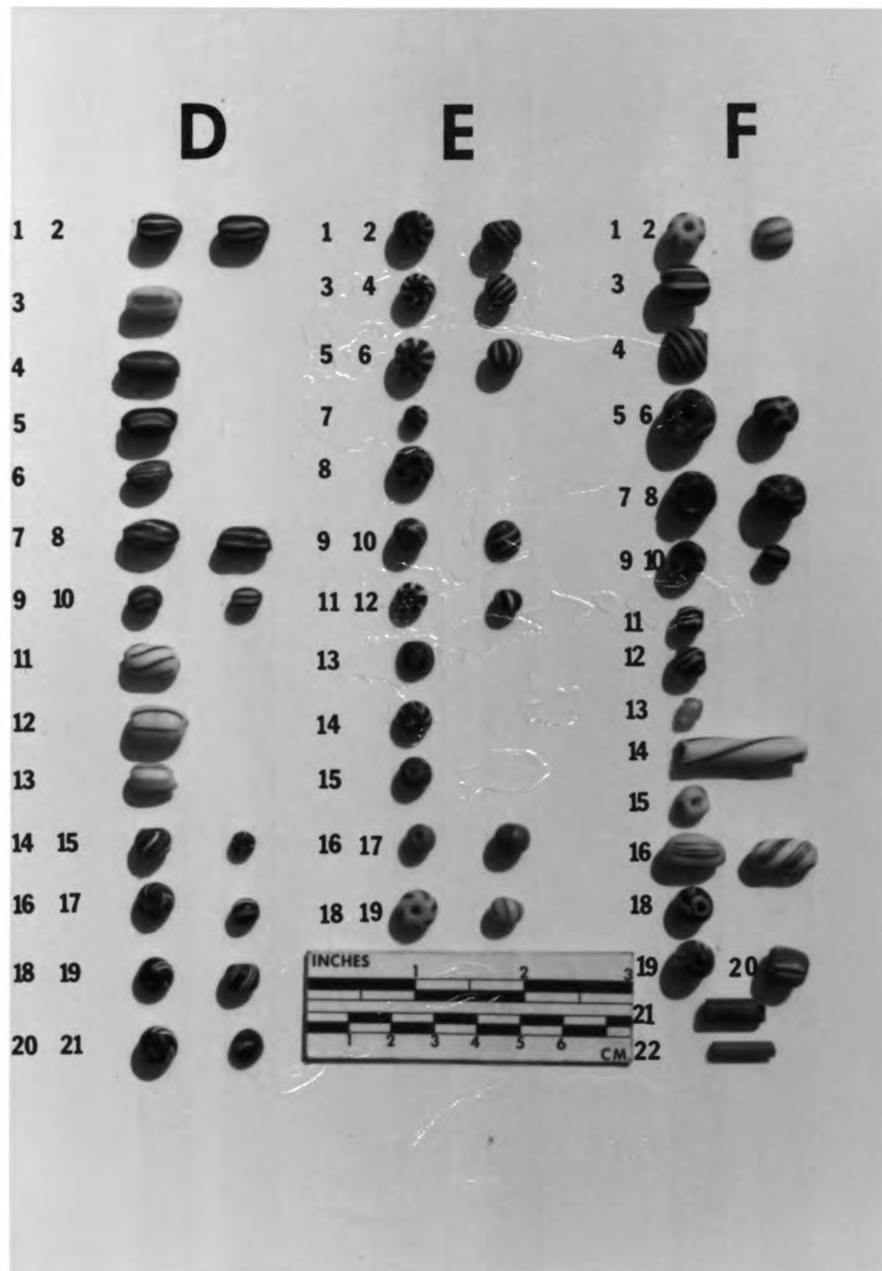
Shape: convex to convexo-elongate

The sets of stripes run the length of the bead.

Length range 10.3-16.8 mm. Width range 6.2-7.1 mm.

Figure 8 Necklace Beads

Figure Designation		Taxonomic Designation
Row D	1,2	SC, T1, Va
	3	Vb
	4	Vc
	5	Vd
	6	Ve
	7,8	Vf
	9,10	Vg
	11	Vh
	12	Vi
	13	Vj
	14,15	T2, Va
	16,17	Vb
	18,19	Vc
	20,21	Vd
Row E	1,2	Ve
	3,4	Vf
	5,6	Vf
	7	Vh
	8	Vg
	9,10	Vi
	11,12	Vi
	13	Vj
	14	Vk
	15	Vl
	16,17	Vm
	18,19	Vn
Row E	1,2	T3, Va
	3	Vb
	4	Vb
	5,6	Vc
	7,8	Vd
	9,10	Ve
	11	Vf
	12	Vg
	13	Vh
	14	T4, Va
	15	T5, Va
	16,17	SD, T1, Va
	18	T2, Va
	19,20	T3, Va
	21	T4, Va
	22	Vc



Variety e Light brown (Munsell: Yellow-Red Yellow 10.0YR 4/4), opaque; 8 white striped insets

Figure 8, Row D 6

4 specimens

The stripes run the length of the bead. On one specimen, the stripes are slightly swirled. Length range 9.2-11.0 mm. Width range 7.1-8.0 mm.

Variety f Grey to black, opaque; 8 white striped insets

Figure 8, Row D 7,8

33 specimens

The stripes run the length of the bead and are straight or slightly swirled. This variety is very similar to the previous variety e except for a variance in color. This bead type is not present at Fort Michilimackinac and only one fragmentary specimen is represented in the Guebert Site sample.

Length range 7.2-17.2 mm. (13.0 average)

Width range 5.0-9.9 mm. (7.0 average)

Variety g Light Blue (Munsell: 2.5PB 4/6), semi-translucent; 8 white striped insets

Figure 8, Row D 9,10

3 specimens

The stripes run the length of the bead and are straight and wide.

Length range 7.0-7.8 mm. Width range 5.4-6.7 mm.

Variety h White, opaque; 6 reddish brown striped insets

Figure 8, Row D 11

1 specimen

Reddish brown stripes (Munsell: reddish Yellow-Red 2.5YR 3/6). The stripes spiral the length of the bead and are of various widths.

Length 13.3mm. Width 7.0 mm.

French 1700-1750 (Stone 1974: 98).

Variety i White, opaque: 6 striped insets in a 2-1-2-1 pattern alternating green and yellows, red, blue and green, red.

Figure 8, Row D 12

1 specimen

Stripes: green (Munsell: 4.0 G 7/6). Yellow (Munsell 10.0 YR 7/10), red (Munsell: 7.5 R 3/8), blue (Munsell: 5.0 PB 5/10). The stripes run the length of the bead and are straight. Length 13.9 mm. Width 8.3 mm.

Variety j White, opaque; 6 striped insets alternating red, green, blue

Figure 8, Row D 13

1 specimen

Stripes: red (Munsell 7.5 R 3/8), green (Munsell: 2.5 G 6/6), blue (Munsell: 10.0 B 4/6) Length 11.0 mm. Width 7.0 mm.

Type 2 Round

Variety a Black, opaque; 8 striped insets alternating red and white

Figure 8, Row D 14,15

7 specimens

Red striped (Munsell: 5.0 R 4/6)

Two of the seven specimens have stripes which spiral the length of the bead, while the remaining examples have straight insets which run end to end.

Diameter range 6.0-8.9 mm.

Variety b Black, opaque; 6 striped insets alternating red and white

Figure 8, Row D 16,17

12 specimens (9 complete, 3 fragments)

Two of the 12 specimens have stripes which spiral the length of the bead, while the remaining 10 examples have straight insets which run end to end.

Diameter range 6.2-9.0 mm.

Coloring same as Variety a

Variety c Black opaque; 4 sets of 3 striped insets alternating white-red-white

Figure 8, Row D 18,19

3 specimens

Red stripes (Munsell: 5.0 R 4/6)

The stripes spiral the length of the bead on all three specimens.

Diameter range 4.6-9.3 mm.

Variety d Blue (Munsell: purplish Purple-Blue 7.5 PB 2/8), semi-translucent; 4 sets of 3 striped insets alternating white-red-white

Figure 8, Row D 20,21

2 specimens

In outward appearance this variety is identical to the previous variety c, with the same style and coloring of insets. However, under more intense light the royal blue color is revealed.

Diameter range 8.1-9.4 mm.

Variety e Black, opaque; 9 white striped insets

Figure 8, Row E 1,2

4 specimens

The insets spiral the length of the bead.

Diameter range 7.4-10.0 mm.

French 1700-1740 (Stone 1974: 98-99)

Variety f Black, opaque; 8 white striped insets

Figure 8, Row E 3,4,5,6

27 specimens (23 complete, 4 fragments)

Of these specimens, 20 have their spiraled insets while the remaining 7 have thicker straight insets.

Diameter range 6.0-11.0 mm. (9.8 mm. average)

French 1700-1740

Variety g Black, opaque; 6 white striped insets

Figure 8, Row E 8

6 specimens

Of these specimens 4 beads have spiraled insets while the remaining 2 have straight insets.

Diameter range 9.3-11.1 mm.
French 1700-1740

Variety h Black, opaque; 7 white striped insets

Figure 8, Row E 7
1 specimen

The insets are straight, and run the length of the bead.

Diameter 6.1 mm.
French 1700-1740

Variety i Blue (Munsell: purplish Purple-Blue 7.5 PB 2/10), semi-translucent; 6 white striped insets

Figure 8, Row E 9,10,11,12
22 specimens (18 complete, 4 fragments)
Of these beads, 2 specimens have their spiraled insets while the remaining 20 examples have thicker straight insets.
Diameter range 6.5-8.0 mm.

Variety j Blue (Munsell: purplish Purple-Blue 7.5 PB 2/10), semi-translucent; 4 white striped insets

Figure 8, Row E 13
1 specimen (fragmentary)
This specimen consists of half a bead with 2 straight white insets. From this fragment, and the position of the insets, the complete specimen would most likely have had 4 insets.
Diameter 8.7 mm.

Variety k Blue-green (Munsell: greenish Blue 2.5 B 5/6), translucent; 8 white striped insets

Figure 8, Row E 14
1 specimen
The stripes spiral the length of the bead.
Diameter 8.5 mm.
French 1700-1760 (Stone 1974: 99)

Variety l Blue-green (Munsell: greenish Blue 2.5 B 5/6), translucent; 7 white striped insets.

Figure 8, Row E 15
1 specimen

The stripes are straight and run the length of the bead.

Diameter 8.0 mm.

Variety m Turquoise (Munsell: Blue-green Blue 10.0 BG 5/4), opaque; 1 red striped inset

Figure 8, Row E 16,17

2 specimens

A single straight red inset runs the length of the bead.

Diameter range 7.0-8.7 mm.

Variety n White, opaque; 6 striped insets alternating red, green, blue

Figure 8, Row E 18,19

10 specimens (6 complete, 4 fragments)

Stripes: red (Munsell: 7.5 R 4/6), green (Munsell: 2.5 G 6/6), blue (Munsell: 10.0 B 4/6)

The stripes spiral the length of the bead on all but 3 specimens which have straight insets.

Diameter range

French 1700-1750 (Stone 1974: 98)

Type 3 Barrel

Variety a White, opaque; 6 striped insets alternating red, green, blue

Figure 8, Row F 1,2

13 specimens (4 complete, 9 fragments)

Same as Type 2, Variety n except for shape

Variety b Black, opaque; 8 white striped insets

Figure 8, Row F 3,4

11 specimens (4 complete, 7 fragments)

Of these specimens, all but one have insets which spiral the length of the bead. The one anomalous specimen has thick straight stripes and is barrel to globular in shape.

Variety c Black, opaque; irregular nonpatterned white insets

Figure 8, Row F 5,6

12 specimens

Shape: round to barrel

The insets consist of several (usually 3) stripes which extend around the circumference of the bead in a wavy irregular pattern. Diameter range 10.3-13.0 mm. Length range 7.0-10.1 mm.

Variety d Black, opaque; irregular nonpatterned turquoise insets

Figure 8, Row F 7,8

2 specimens

Turquoise inset (Munsell: blue-Green Blue 10.0 BG 5/4)

Same as Variety c except for variance in inset color.

Diameter range 11.0-11.2 mm. Length range 8.3-9.3 mm.

Variety e Black, opaque; 6 striped insets alternating red and white

Figure 8, Row F 9,10

2 specimens

One specimen has insets which spiral, while the other does not. This bead variety is identical (except for shape) to the previous Type 2 Variety b.

Diameter range 5.9-8.9 mm. Length range 6.1-7.0 mm.

Variety f Blue (Munsell: purplish Purple-Blue 7.5 PB 2/10), translucent; 6 white striped insets

Figure 8, Row F 11

1 specimen

The insets are straight and run the length of the bead

Diameter 6.9 mm. Length 6.5 mm.

Variety g Blue-green (Munsell: greenish-Blue 2.5 B 5/6), translucent; 9 white striped insets

Figure 8, Row F 12

1 specimen

The insets spiral the length of the bead.

Variety h Clear, translucent; 16 white striped insets

Figure 8, Row F 13

1 specimen

The insets are straight and run the length of the bead. Similar bead types have been found at the Guebert Site (Good 1972: 127), but not at Fort Michilimackinac.

Diameter 5.0 mm. Length 4.2 mm.

Type 4 Tubular

Variety a White, opaque; 3 pairs of red and yellow insets

Figure 8, Row F 14

3 specimens (2 complete, 1 fragment)

Insets: red (Munsell: 10.0 R 3/6), Yellow (Munsell: 2.5 Y 8/8)

The insets spiral the length of the bead.

Diameter 6.2 mm. Length range 15.2-30.2 mm.

These beads are nontumbled and fibrous.

Type 5 Doughnut to globular

Variety a White, opaque; 3 sets of 3 striped insets alternating red-silver-red

Figure 8, Row F 15

1 specimen

This specimen is poorly made and is shaped irregularly into an almost doughnut shape.

The stripes are straight and run the length of the bead.

Series D Composite

Type 1 Convex shape

Variety a White, opaque; 9 blue insets in sets of 3 each

Figure 8, Row F 16,17

29 specimens (15 complete, 14 fragments)

Of these specimens, 21 have insets which spiral the length of the bead while the remaining eight have straight ones.

Shape: convex to convexo-elongate

A light blue core (sometimes so light as to appear white) is covered by a layer of white glass, and insets added.

Length range 12.5-13.6 mm. Diameter range 6.0-9.6 mm.

This bead variety has been found in quantity at the Guebert Site (Good 1972: 124), but has not been reported found at Fort Michilimackinac.

Variety b White, opaque; 8 blue insets in a 3-3-2 pattern

Not illustrated

1 specimen

Same as variety a except for the lack of 1 inset. The stripes spiral the length of the bead.

Diameter 8.8 mm. Length 13.0 mm.

Type 2 Round

Variety a Blue (Munsell: purplish Purple-Blue 7.5 PB 2/8), semi-translucent; 3 sets of 3 striped insets, alternating white-red-white.

Figure 8, Row F 18

3 specimens

Light blue core covered by a layer of blue glass and insets added.

Diameter range 9.0-10.2 mm.

Variety b Black (possibly very dark blue), opaque; 6 white striped insets

Not illustrated

2 specimens

A white core is covered by a layer of dark glass, and insets added.

Shape: round to barrel

Diameter 8.1-8.1 mm.

Type 3 Barrel

Variety a Red (Munsell: red Yellow-Red 10.0 R 3/6), opaque; 3 sets of striped insets alternating white-black-white.

Figure 8, Row F 19,20

3 specimens

A translucent green core is covered by a layer of red glass, and insets added. It was then covered overall by a thin veneer of clear

glass. This type of bead is a variety of the CorNaline d'Aleppo style.
Diameter range 9.0-9.2 mm. Length range 9.0-9.1 mm.

Type 4 Tubular

Variety a Blue (Munsell: purplish Purple-Blue 7.5 PB 2/8), opaque; 16 white striped insets.

Figure 8, Row F 21

1 specimen

A blue core is covered by a layer of white glass, an additional layer of blue is applied and insets added. The stripes are straight and run the length of the bead. The bead is untumbled and nonfibrous.

Diameter 5.9 mm. Length 14.3 mm.

Variety b Red (Munsell: Yellowish-Red 7.5 R 3/8), opaque; 3 sets of 3 striped insets alternating white-black-white.

Not illustrated

8 specimens

A dark (green) core covered by a layer of red and insets added. A veneer of clear glass is then applied. These beads are all untumbled nonfibrous. The insets are straight and run the length of the bead.

Diameter range 3.3-4.1 mm. Length range 12.3-15.1 mm.

Variety c Red (Munsell: 7.5 R 3/8), opaque; 6 white striped insets

Figure 8, Row F 22

1 specimen

Red core with insets added, and covered overall by a layer of clear glass. The striped insets are straight and run the length of the bead.

Class II Mandrel Wound

Series A Simple construction

Type 1 Convex shape

Variety a Green (Munsell: Green Blue-Green
10.0 G 3/4), translucent

Figure 9, Row G 1,2
10 specimens
Diameter range 5.2-6.5 mm. Length range 5.2-6.4 mm.

Variety b Clear, translucent

Figure 9, Row G 3
2 specimens
The striations due to the winding process are quite noticeable.
Diameter range 16.0-17.2 mm. Length range 25.1-28.0 mm.

Variety d Milky white-irridescent, semi-translucent to translucent

Figure 9, Row G 5,6,7,8
23 specimens (12 complete, 11 fragments)
Shape: convex to barrel
This bead variety has been reported from the Guebert Site (Good 1972: 112) and from Fort Michilimackinac. Stone (1974: 102-103) suggests a 1700-1750 time span with French affiliation.
Diameter range 10.0-19.6 mm. Length range 10.8-28.6 mm.

Type 2 Round

Variety a Milky white-irridescent, semi-translucent to translucent

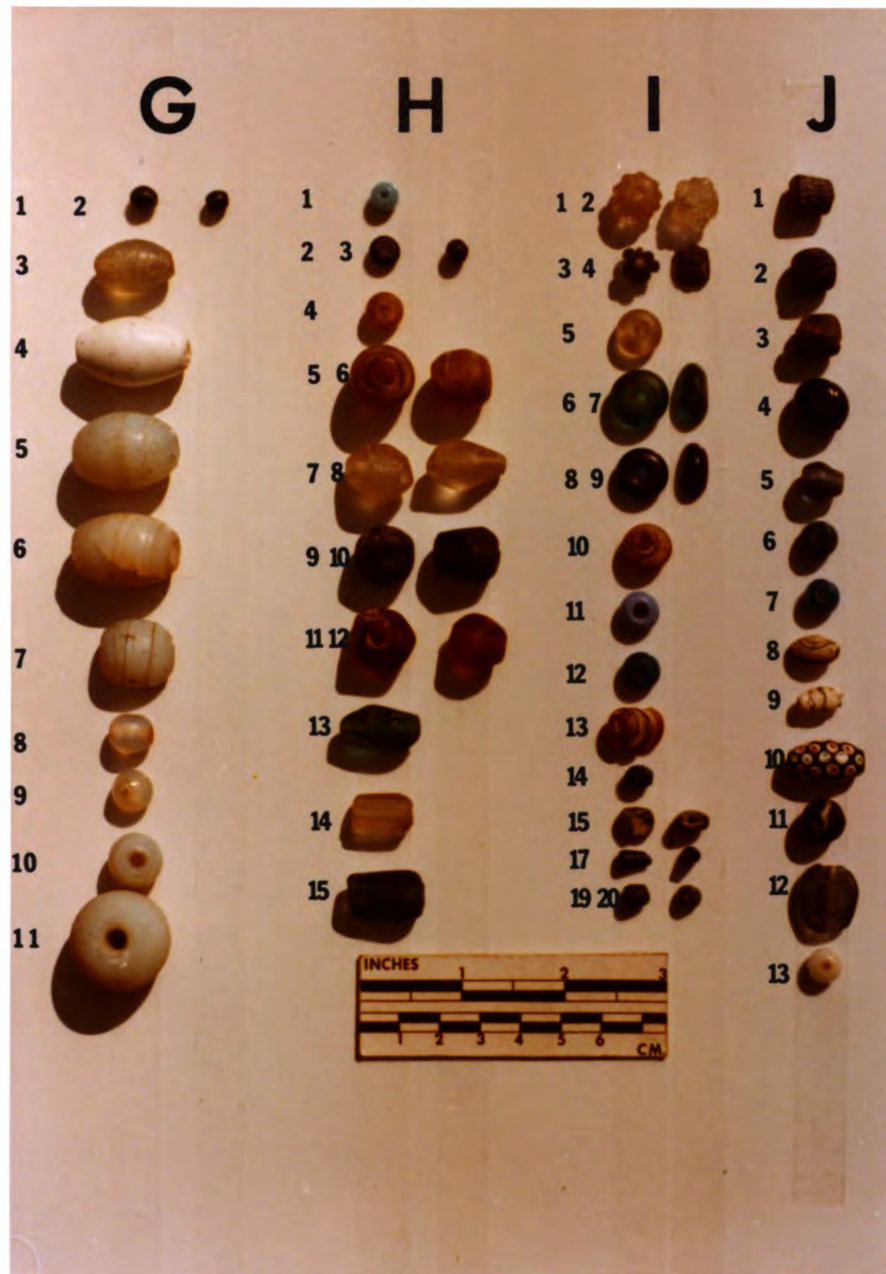
Figure 9, Row G 9,10,11
99 specimens (55 complete, 44 fragments)
These specimens are identical to Type 1 Variety d beads except for shape. The smaller examples are more irridescent and translucent than the larger ones, but all exhibit identical surfaces. French 1700-1750
Diameter range 10.1-24.9 mm.

Variety b Light Blue (Munsell: purplish Blue
7.5 B 7/5), opaque

Figure 9, Row H 1
1 specimen
Diameter 7.3 mm.

Figure 9 Necklace Beads

Figure Designation		Taxonomic Designation	
Row G	1,2	CII, SA, T1,	Va
	3		Vb
	4		Vc
	5		Vd
	6		Vd
	7		Vd
	8		Vd
	9	T2,	Va
	10		Va
	11		Va
Row H	1		Vb
	2,3		Vc
	4		Vd
	5,6	T3,	Va
	7,8	T4,	Va
	9,10		Vb
	11,12		Vc
	13		Vd
	14	T5,	Va
Row I	1,2	T6,	Va
	3,4		Vb
	5	T7,	Va
	6,7		Vb
	8,9		Vc
	10		Vd
	11		Ve
	12		Vf
	13	T8,	Va
	14		Vb
Row J	15,16	T9,	Va
	17,18	T10,	Va
	19,20		Vb
	1		Vc
	2	T11,	Va
	3		Vb
	4	T12,	Va
	5		Vb
	6		Vc
	7		Vc
	8	SB, T1,	Va
	9		Va
	10		Vb
	11	T2,	Va
	12	T3,	Va
	13	CIII, SA, T1,	Va



Variety c Blue (Munsell: Purple-Blue 5.0 PB 7/5), translucent

Figure 9, Row H 2,3

24 specimens

Shape: round to irregular doughnut--poorly formed

Diameter range 5.2-8.0 mm.

Variety d Yellow-Amber (Munsell: reddish Yellow 2.5 Y 6/8), semi-translucent

Figure 9, Row H 4

12 specimens

Shape: round to conical

Well pronounced striations due to winding

Diameter 5.3-9.4 mm.

French 1700-1750 (Stone 1974: 103)

Type 3 Barrel

Variety a Amber (Munsell: Yellow-Red Yellow 10.0 YR 6/10), semi-translucent

Figure 9, Row H 5,6

2 specimens

Well pronounced striations

Diameter range 15.0-16.0 mm. Length range 15.0-16.5 mm.

Type 4 Press faceted - 8 sides

Variety a Clear, translucent

Figure 9, Row H 7,8

3 specimens

Shape: round to convexo-elongate

French 1730-1760

Length range 15.9-19.8 mm. Width range 11.3-14.6 mm.

Variety b Blue (Munsell: purplish Purple-Blue 7.5 PB 2/10), translucent

Figure 9, Row H 9,10

30 specimens (25 complete, 5 fragments)

Shape: Round to convex

French 1730-1760 (Stone 1974: 101)

Length range 7.2-17.0 mm. Width range 8.0-14.3 mm.

These specimens are not uniform in color and vary in their value and chroma within the 7.5

PB hue. Good (1972: 106) reports similar color variances at the Guebert Site.

Variety c Amber (Munsell: Yellow-Red 5.0 YR 5.5/10), translucent

Figure 9, Row H 11,12
8 specimens (6 complete, 2 fragments)
Shape: Convex to round
French 1730-1760
Length range 8.9-14.1 mm. Width range 10.9-19.0 mm.

Variety d Turquoise (Munsell: Blue-Green 10.0 BG 5/6), translucent

Figure 9, Row H 13
3 specimens
Shape: convex to convexo-elongate
French 1730-1760
Length range 19.1-21.1 mm. Width range 13.0-13.1 mm.

Type 5 Press faceted - 5 sided

Variety a Clear, translucent

Figure 9, Row H 14
1 specimen
Shape: elongate
This specimen has 5 pressed facets, and is pentagonal in cross section.
Length 15.6 mm. Width 10.0 mm.

Variety b Blue (Munsell: Purple-Blue 5.0 PB 3/10), translucent

Figure 9, Row H 15
1 specimen
Shape: elongate
Same as Variety a except for color
Length 18.2 mm. Width 12.0 mm.

Type 6 Nodular, "mulberry"

Variety a Clear, translucent

Figure 9, Row I 1,2
19 specimens
Shape: round to barrel
These specimens exhibit molded knobs over their surface distributed in two or three rows.

Several specimens are not perfectly clear, but exhibit slightly purple (2 specimens) or amber (2 specimens) imperfection. This color is not so great as to drastically change their overall clear appearance.

French 1690-1760

Similar specimens have been reported at the Guebert Site and at Fort Michilimackinac.

Diameter range 9.5-11.5 mm. Length range 8.0-10.2 mm.

Variety b Blue (Munsell: bluish Purple-Blue 2.5 PB 4/6)

Figure 9, Row I 3,4

2 specimens

Shape: barrel

Same as Variety a except for color.

French 1690-1760

Diameter range 9.0-10.1 mm. Length range 8.6-9.0 mm.

Type 7 Doughnut

Variety a Clear, translucent

Figure 9, Row I 5

1 specimen

Diameter 11.1 mm. Thickness 6.0 mm.

French 1700-1760

Variety b Turquoise (Munsell: bluish Blue-Green 7.5 BG 5.5/6), translucent

Figure 9, Row I 6,7

7 specimens (3 complete, 4 fragments)

Diameter range 13.0-14.6 mm. Thickness range 5.1-7.0 mm.

French 1700-1760

Variety c Blue (Munsell: 7.5 PB 2/10), translucent

Figure 9, Row I 8,9

11 specimens (7 complete, 4 fragments)

Three of these specimens have very heavy surface striations and golden patina, while the other have smooth surfaces and no patination. There is, however, not enough variation to constitute 2 separate varieties.

Diameter range 10.9-14.0 mm. Thickness range 5.0-6.0 mm.
French 1700-1760

Variety d Amber (Munsell: Yellow-Red Yellow 10.0 YR 6/10), semi-translucent

Figure 9, Row I 10
1 specimen
Heavy striations present.
Diameter 12.2 mm. Thickness 8.0 mm.
French 1700-1760

Variety e Milky Blue (Munsell 7.5 PB 6/10), opaque

Figure 9, Row I 11
1 specimen
This specimen is swirled with various shades of blue. The surface is very glassy and non-striated.
Diameter 10.0 mm. Thickness 6.6 mm.

Variety f Blue to Turquoise (Munsell: 8.5 B 4/8), semi-translucent

Figure 9, Row I 12
1 specimen
Diameter 9.7 mm. Thickness 6.8 mm.

Type 8 Spiraled

Variety a Amber (Munsell: 2.5 YR 4/8), semi-translucent

Figure 9, Row I 13
1 specimen (fragmentary)
Shape: convex to elongate
Pronounced striations from the winding process produces a series of ridges and grooves to give the bead a spiral or corkscrew appearance.

Variety b Blue (Munsell: 8.5 B 4/8), opaque

Figure 9, Row I 14
1 specimen
Shape: convex
Length 6.9 mm. Diameter 6.3 mm.

Type 9 Kernel shape

Variety a Green (Munsell: yellowish-Green 2.5 G 5/10), semi-translucent

Figure 9, Row I 15,16

3 specimens

These specimens are shaped like corn kernels with a hole extending through the length of the kernel. All specimens are heavily covered with a thick brown patina.

Length range 7.0-7.1 mm. Width range 8.0-8.1 mm.

Type 10 Conical

Variety a Blue (Munsell: 7.5 PB 2/8), opaque

Figure 9, Row I 17,18

2 specimens

Length range 8.0-8.1 mm. Width range 4.2-4.9 mm.

Variety b Green (Munsell: yellowish-Green 2.5 G 5/10), semi-translucent

Figure 9, Row I 19,20

2 specimens

Length range 5.4-5.8 mm. Width range 5.9-6.1 mm.

Variety c Blue (Munsell 7.5 PB 3/14), moulded, translucent

Figure 9, Row J 1

1 specimen

This specimen exhibits a raised lattice design formed by the intersection of numerous criss-crossed lines.

Length 10.0 mm. Width 9.0 mm.

Type 11 Grooved elongate

Variety a Blue (Munsell: 7.5 PB 2/10), semi-translucent

Figure 9, Row J 2

1 specimen

Shape: barrel to elongate

Eleven deep grooves produce parallel ridges on the length of the bead.

Length 10.0 mm. Width 11.1 mm.

Variety b Blue (Munsell: 7.5 PB 3/13), semi-translucent

Figure 9, Row J 3

1 specimen

Shape: barrel to elongate

Approximately 30 grooves are present on the bead surface. These grooves are parallel to one another and are set at a 30 degree angle to the bead hole. A single specimen was also found at Fort Michilimackinac (Stone 1974: 102). Length 11.1 mm. Width 10.0 mm.

Type 12 Globular (irregular)

Variety a Blue (Munsell: 7.5 PB 2/4), translucent

Figure 9, Row J 4

1 specimen

Length 11.0 mm. Width 14.8 mm.

Variety b Blue (Munsell: 5.0 PB 4/8), translucent

Figure 9, Row J 5

1 specimen

Shape: round to conical

Length 10.9 mm. Width 10.0 mm.

Variety c Turquoise (Munsell 9.0 B 4/8), semi-translucent

Figure 9, Row J 6,7

2 specimens

Shape: round to conical

Length range 7.2-8.4 mm. Width range 8.5-9.0 mm.

Series B Compound construction

No series B specimens are present in the Fort St. Joseph sample.

Series C Complex construction

Type 1 Convex

Variety a White, opaque, irregular green insets

Figure 9, Row J 8,9

3 specimens

The green (Munsell: 2.5 G 6/6) insets are wavy and vary in length, number, and placement as they extend around the circumference of the bead.
Length range 10.8-13.0 mm. Width range 6.1-7.7 mm.

Variety b Black, opaque, 45 dotted insets

Figure 9, Row J 10

1 specimen

Each dot is white, with either a red (Munsell: 7.5 RP 6/8) or green (Munsell: 2.5 G 5/6) center. The dots are applied in rows alternating 4 and 5 dots per row. Each row of dots has a specific color of center; with the rows of 4 dots having red center, and those with 5 having green centers.

Length 19.1 mm. Width 10.4 mm.

Type 2 Round

Variety a Black, opaque, irregular white insets

Figure 9, Row J 11

1 specimen

This specimen outwardly resembles CI, Series C, Type 4, Variety c specimens, although the method of manufacture differs.

Diameter 10.9 mm.

Type 3 Flat-disc shaped

Variety a Blue (Munsell 5.0 PB 5/6), translucent; "Man in the Moon" pattern insets

Figure 9, Row J 12

3 specimens (1 complete, 2 fragments)

Although the inset does not remain on any of the specimens, a "ghost" image of the inset pattern is clearly visible. The obverse side pictures a man in the moon face with a star set off to the right side. The reverse is not clear but a wavy vertical line surrounded by dots or stars can be seen. The disk has been pressed, flattened from a round or oval shaped original. Eight similar specimens have been found at Fort Michilimackinac.

Length 16.5 mm. Width 15.0 mm. Thickness 5.2 mm. (based on one complete specimen)

Class III MoldedSeries A Simple constructionType 1 RoundVariety a White, opaque

Figure 9, Row J 13

1 specimen

Only one class III specimen is present in the Fort St. Joseph bead sample. This class is typified by a mold seam around the circumference of the bead.

Seed Beads

An extremely large quantity of seed beads were present in the collections. Due to this large number, and a limitation of time and funds, a 10 percent element sample of these beads was taken based upon the weight of the target population. This sample yielded a total of 6,089 beads which are described in this text. The size of this sample was adequate to explore the population, however the possibility remains that not all bead types were discovered in the sample which are present in the total collections. A brief visual inspection of the total population was implemented, but did not reveal any types not described. The bead's frequencies described below are based upon the sample, and inferences to the total population have not been included in the count. The following seed bead classification is based on the criteria defined for the classification of necklace beads.

Class I Hollow Cane (Drawn)

Series A Simple construction

Type 1 Doughnut to barrel shape

Variety a White, opaque

Figure 10, Row A 1

13 specimens

Length range 1.0-2.1 mm. Width range 2.2-3.1 mm.

Variety b Clear, translucent

Figure 10, Row A 2,3

3 specimens

Length range 1.0-2.2 mm. Width range 2.0-3.1 mm.

Variety c Grey (Munsell: 10.0 B 6/2), opaque to semi-translucent

Figure 10, Row A 4,8

28 specimens

These specimens exhibit a wider than average range of variation in shape and color.

Length range 1.6-3.1 mm. Width range 2.6-3.9 mm.

Variety d Blue (Munsell: 5.0 PB 3/8), translucent

Figure 10, Row A 5,6

226 specimens

Variances in color value and chroma are common

Length range .9-1.8 mm. Width range 1.7-2.9 mm.

Variety e Dark amber (Munsell: 5.0 YR 5/8), semi-translucent to translucent

Figure 10, Row A 7

474 specimens

These specimens appear black in normal light and only under intense light is the amber color revealed.

Length range 1.8-2.9 mm. Width range 2.2-4.2 mm.

Variety f Yellow (Munsell: 5.0 Y 8/10), semi-translucent

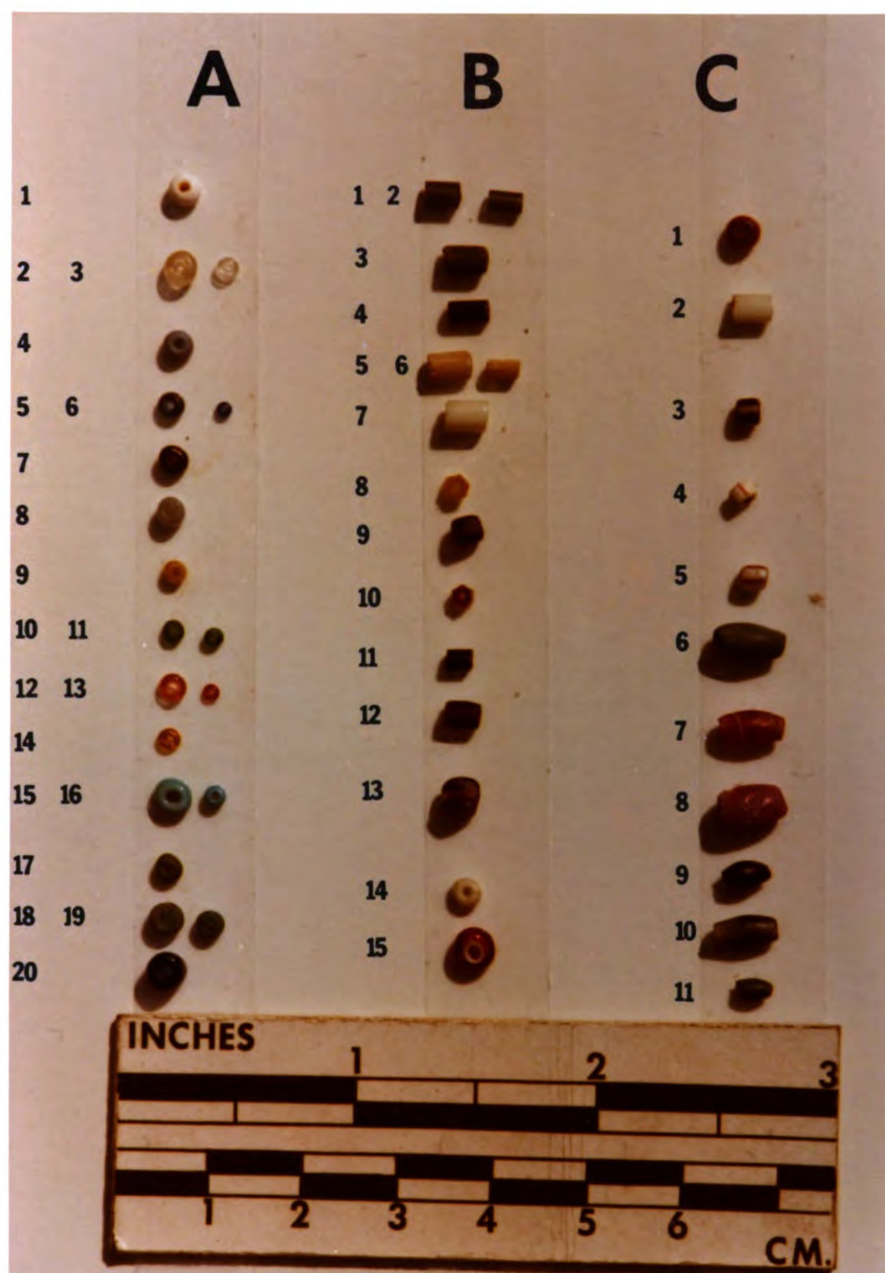
Figure 10, Row A 9

3 specimens

Length range 1.8-2.0 mm. Width range 2.0-2.1 mm.

Figure 10 Seed Beads

Figure Designation		Taxonomic Designation	
Row A	1	CI, SA, T1,	Va
	2,3		Vb
	4		Vc
	5,6		Vd
	7		Ve
	8		Vf
	9		Vg
	10,11		Vh
	12,13		Vi
	14		Vj
	15,16		Vk
	17		Vl
	18,19		Vm
	20		Vn
Row B	1,2	T2,	Va
	3		Vb
	4		Vc
	5,6		Vd
	7		Ve
	8	T3,	Va
	9		Vb
	10		Vc
	11		Vd
	12		Vb
	13	T4,	Va
	14	SB, T1,	Va
Row C	1		Vc
	2		T2, Va
	3	SD, T1,	Va
	4	SC, T1,	Va
	5	SD, T1,	Vb
	6	CII, SA, T1,	Va
	7		Vb
	8		Vc
	9		Vd
	10		Ve
	11		Vf



Variety g Green (Munsell: 2.5 G 5/8), semi-translucent to translucent

Figure 10, Row A 10,11
118 specimens

Length range 1.8-2.7 mm. Width range 2.1-3.2 mm.

Variety h Strawberry Red (Munsell: 5.0 R 6/10), translucent

Figure 10, Row A 12,13
2 specimens

Length range .85-1.2 mm. Width range 1.8-2.8 mm.

Variety i Yellow-amber (Munsell: 10.0 TR 7/10), translucent

Figure 10, Row A 14
1 specimen

Length 1.2 mm. Width 2.6 mm.

Variety j Milky Blue (Munsell: 2.5 B 6.5/6), opaque

Figure 10, Row A 15,16
2 specimens

Length range 1.9-2.3 mm. Width range 2.8-4.3 mm.

Variety k Olive-green (Munsell: 10.0 GY 5/6), opaque

Figure 10, Row A 17
16 specimens

These specimens are irregularly shaped and are somewhat fibrous in texture.

Length range 1.1-2.0 mm. Width range 2.2-4.0 mm.

Variety l Turquoise (Munsell: 2.5 B 4.6/6), semi-translucent to opaque

Figure 10, Row A 18,19
148 specimens

These specimens exhibit a wide variance in color and clarity, and have surfaces which are generally rough and fibrous.

Length range 1.3-3.2 mm. Width range 2.2-3.3 mm.

Variety m Cobalt Blue (Munsell: 7.5 PB 2/10),
translucent

Figure 10, Row A 20
1 specimen
Length 3.2 mm. Width 3.9 mm.

Type 2 Tubular

Variety a Blue (Munsell 2.5 PB 3/8), trans-
lucent

Figure 10, Row B 1,2
12 specimens
Half of these specimens have been untumbled
while the remainder have not. All exhibit
smooth, glossy surfaces.
Length range 3.0-4.0 mm. Width range 2.0-2.4
mm.

Variety b Green (Munsell: 10.0 GY 5/6),
untumbled, opaque

Figure 10, Row B 3
5 specimens
Length range 4.1-4.8 mm. Width range 2.9-3.1
mm.

Variety c Amethyst (Munsell: 7.5 RP 4/8),
translucent

Figure 10, Row B 4
112 specimens
These specimens appear black in normal light,
but intense light brings out the amethyst
color.
Length range 3.1-5.2 mm. Width range 1.9-2.9
mm.

Variety d Straw-colored (Munsell: 10.0 YR
8/2), untumbled

Figure 10, Row B 5,6
2 specimens
Both specimens exhibit rough and fibrous sur-
faces.
Length range 3.9-4.8 mm. Width range 2.0-2.9
mm.

Variety e White, untumbled, opaque

Figure 10, Row B 7

2 specimens

Length range 4.0-4.5 mm. Width range 3.4-3.5 mm.

Type 3 Multi-faceted

Variety a Yellow (Munsell: 10.0 YR 7/8),
hexagonal, translucent

Figure 10, Row B 8

1 specimen

This specimen has a rough surface and fibrous body.

Length 2.0 mm. Width 2.6 mm.

Variety b Amethyst (Munsell: 5.0 RP 5/8),
6 to 9 irregular facets, translucent

Figure 10, Row B 9,12

2 specimens

These specimens appear black in normal light.
Length range 3.2-4.0 mm. Width range 3.0-3.1 mm.

Variety c Amber (Munsell: 5.0 YR 6/10),
hexagonal, translucent

Figure 10, Row B 10

1 specimen

Length 2.1 mm. Width 2.1 mm.

Variety d Amethyst (Munsell: 5.0 RP 5/8),
pentagonal, translucent

Figure 10, Row B 11

1 specimen

This specimen appears black in normal light.
Length 3.0 mm. Width 2.1 mm.

Type 4 Globular

Variety a Amethyst (Munsell: 5.0 RP 6/4),
translucent

Figure 10, Row B 13

6 specimens

These specimens are very irregularly shaped having four and five sides with flared "wings" at each corner.
Length range 2.4-4.6 mm. Width range 3.0-4.3 mm.

Series B Compound construction

Type 1 Doughnut

Variety a White, opaque

Figure 10, Row B 14

4868 specimens

White inner core covered by a layer of clear glass. All of the specimens except 15 exhibit length ranges from 1.0-2.4 and width ranges from 2.0-3.4 mm. Those fifteen anomalous specimens have length ranges of 2.9 to 3.1 mm. and width ranges of 3.9 to 4.1 mm. and may represent a separate size category.

Variety b Red and white, translucent

Figure 10, Row B 15

1 specimen

Opaque white inner core covered by a layer of red (Munsell: 5 R 5/12), translucent glass. Length 3.1 mm. Width 4.9 mm.

Variety c Red and green, opaque

Figure 10, Row C 1

16 specimens

Green translucent core covered by a layer of opaque red (Munsell: 7.5 R 3/6) glass, and then covered overall by a thin clear veneer. This bead variety is referred to in the literature as Cornaline D'Aleppo and is found in both large necklace beads as well as seed beads.

Length range 2.0-2.9 mm. Width range 2.8-3.1 mm.

Type 2 Tubular

Variety a White, opaque

Figure 10, Row C 2

28 specimens

Commonly referred to in the literature as "glass wampum" these specimens consist of an

opaque white core covered by a thin layer of clear glass. Only five specimens have been tumbled.

Length range 3.8-6.1 mm. Width range 2.9-4.0 mm.

Series C Complex construction

Type 1 Doughnut to barrel shape

Variety a White, opaque; 4 striped insets alternating red-green

Figure 10, Row C 4

3 specimens

Length range 1.9-2.1 mm. Width range 2.8-3.0 mm.

Series D Composite construction

Type 1 Doughnut to barrel

Variety a Black (dark amber), opaque; 4 white striped insets

Figure 10, Row C 3

1 specimen

Amber inner core with insets added and covered overall with clear glass veneer.

Length 2.9 mm. Width 3.1 mm.

Variety b White, opaque; 4 red striped insets

Figure 10, Row C 5

6 specimens

White opaque core with insets added and covered overall by thin clear veneer of glass.

Length range 1.9-2.8 mm. Width range 2.9-3.0 mm.

Class II Mandrel Wound

Series A Simple construction

Type 1 Convex

Variety a Greenish-Blue (Munsell: 2.5 B 5/4), opaque

Figure 10, Row C 6

1 specimen

Length 7.0 mm. Width 3.9 mm.

Variety b Red (Munsell: 2.5 R 4/10), semi-translucent

Figure 10, Row C 7
1 specimen
Length 6.9 mm. Width 3.4 mm.

Variety c Lavender (Munsell: 2.5 RP 4/6), opaque

Figure 10, Row C 8
1 specimen
Length 7.3 mm. Width 4.6 mm.

Variety d Black (dark amber), semi-translucent to opaque

Figure 10, Row C 9
5 specimens
Length range 4.1-5.6 mm. Width range 2.8-3.1 mm.

Variety e Blue (Munsell: 2.5 PB 4/6), translucent

Figure 10, Row C 10
1 specimen
Length 7.0 mm. Width 3.6 mm.

Variety f Green (Munsell: 2.5 G 5/6), opaque

Figure 10, Row C 11
1 specimen
Length 4.1 mm. Width 2.6 mm.

Variety g White, opaque

Not illustrated
1 specimen
Length 6.6 mm. Width 4.3 mm.

ROSARY BEADS

The rosary is well documented in religious literature and consists of a series of beads strung in necklace form and attached to a crucifix or pendant. The beads, numbering either 58 or 168 were strung in decades of ten beads each separated by a larger single bead and were used for counting prayers (Stone 1974: 114). At Fort St. Joseph a total of fifty-five rosary beads are present in the collection. Except for one bone specimen, all are made of ivory and are of European manufacture. The beads range in color from brown to green with smooth highly polished surfaces, and most bear evidence of manufacture on a turning lathe. Two major classes of beads are defined in the St. Joseph sample based upon function and the number of perforations per bead. Those beads with a single hole composed the decades of the rosary necklace, while the dual perforated specimen functioned as a linking element between the necklace proper and the pendant.

Series A Single hole constructionType 1 ConvexVariety a Undecorated

Figure 11, Row A 1,2

15 specimens

Length range 7.2-9.0 mm. Width range 5.3-7.3 mm.

At Fort Michilimackinac three size categories were distinguished for this bead variety. Due to the small number of specimens from Fort St. Joseph, those categories can neither be supported nor refuted. Both T1 and T2 specimens were the beads which formed the decades of the rosary (Stone 1974: 115).

Type 2 RoundVariety a Undecorated

Figure 11, Row A 3,4,6

37 specimens

These specimens form four distinct size categories.

Size	Width	Length	# Specimens
X-Large	12 mm.	8.9 mm.	1 specimen
Large	7.1-7.8 mm.	5.0-6.2 mm.	5 specimens
Medium	6.3-7.0 mm.	5.0-6.0 mm.	3 specimens
Small	5.0-5.9 mm.	3.5-5.0 mm.	24 specimens

These categories do not conform to those reported by Stone (1974: 115) from Michilimackinac with a noticeable absence of beads in larger sizes.

Type 3 Disc shapedVariety a Decorated

Figure 11, Row A 5

1 specimen

This specimen is disc shaped with a deep groove running the circumference of the edge.

Length 4.5 mm. Width 6.8 mm.

Type 4 ElongatedVariety a Decorated

Figure 11, Row A 8

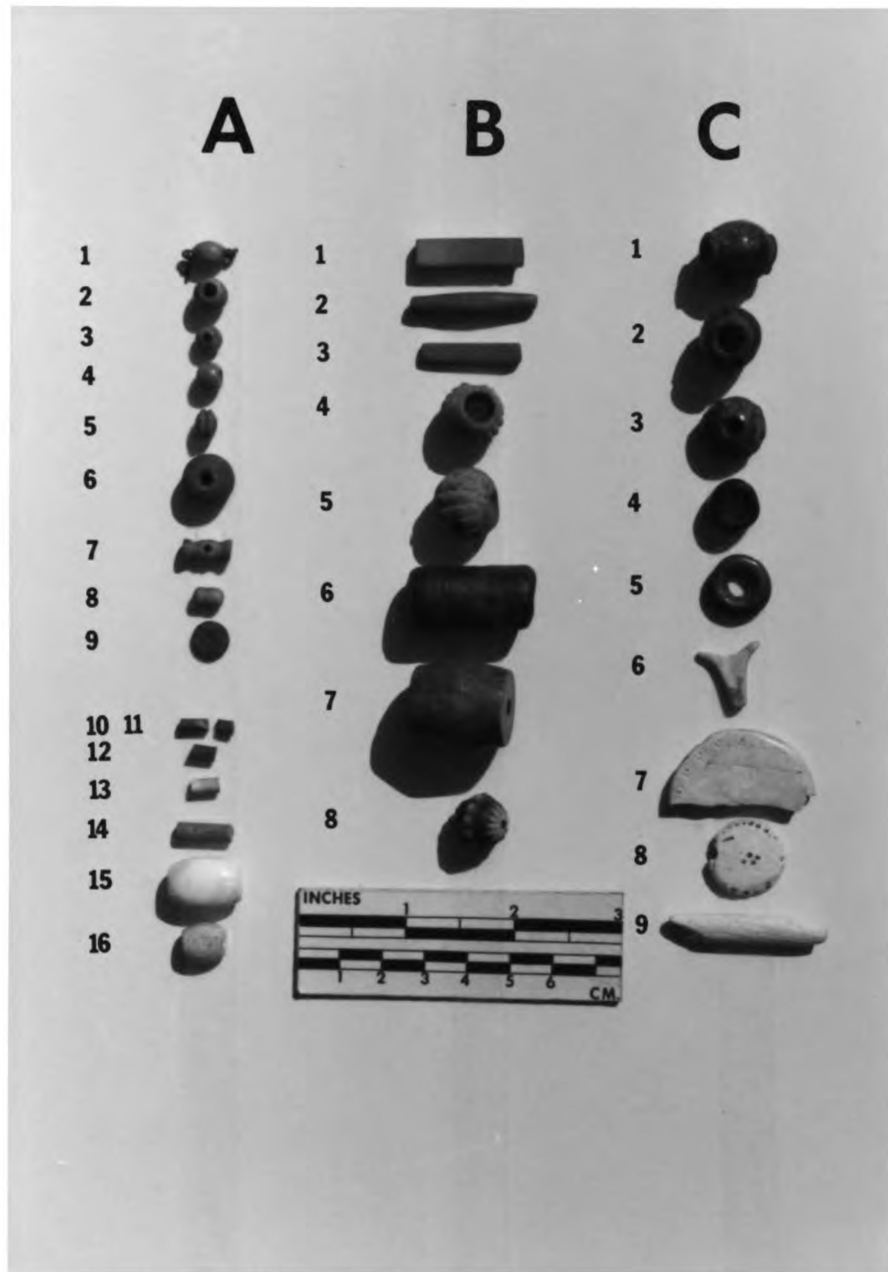
1 specimen

This specimen is elongate with rounded edges. A single shallow circumferential groove has been cut into the center.

Length 7.1 mm. Width 4.8 mm.

Figure 11 Rosary and Miscellaneous Beads

Figure Designation		Taxonomic Designation	
		Rosary	
Row A	1	SA, T1, Va	
	2	Va	
	3	T2, Va	
	4	Va	
	5	T3, Va	
	6	T2, Va	
	7	SB, T1, Va	
	8	SA, T4, Va	
		Miscellaneous Beads	
Row B	9	SA, T1, Va	
	10-14	SB, T1, Va, Sub 1	
	15	SA, T2, Va	
	16	Va	
	1	SC, T1, Va	
	2	Va	
	3	Va	
	4	SD, T1, Va	
	5	Va	
	6	SE, T1, Va	
	7	SF, T1, Va	
	8	SG, T1, Va	
	1	SH, T1, Va	
	2	Va	
	3	T2, Va	
	4	Va	
Row C	5	T3, Va	
	6	SA, T3, Va	
	7	SA, T1, Vb	
	8	SB, T3, Va	
	9	SB, T2, Va	



Series B Double hole constructionType 1 ElongateVariety a Decorated

Figure 11, Row A 7

1 specimen

This specimen is elongated with flat ends and a narrowed middle. Similar specimens have been found at Michilimackinac (SB, T1, Va). (Stone 1974: 118) Figure 52N

Length 11.2 mm. Width 5.9 mm.

MISCELLANEOUS BEADS

Series A Bone

Type 1 Disc shaped

Variety a Undecorated

Figure 11, Row A 9

2 specimens

These beads are flat discs cut from bone which appear to be of aboriginal manufacture due to the lack of uniformity in center hole size and shape. Thickness 1.4-1.5 mm. Width range 8.2-8.3 mm.

Variety b Decorated

Figure 11, Row C 7

1 specimen

This runtee fragment exhibits two parallel holes running longitudinally through the disc. Both sides of the specimen are decorated with a border of concentric circles, with an estimated 20 per side.

Thickness 4.2 mm. Diameter 34.0 mm.

Type 2 Convex to cushion shaped

Variety a Undecorated

Figure 11, Row A 15,16

2 specimens

These beads are convexly shaped, but flattened. The two are identically shaped, but differ considerably in size, the smaller specimens being 10.0 mm. in length and 9.1 mm. in width, while the larger is 16.8 mm. in length and 12.0 mm. in width. Thickness varies from 6.6 mm. to 9.1 mm. respectively. The beads have been irregularly drilled and are most probably of aboriginal manufacture.

Type 3 T-shapedVariety a Undecorated

Figure 11, Row C 6

1 specimen

This specimen exhibits a single hole drilled the length of the shank and ending in the apex of the angle formed by the arms of the Y. The irregularity of shape points toward non-European manufacture. Length 14.5 mm. Width 14.4 mm. Thickness 4.0 mm.

Series B ShellType 1 TubularVariety a UndecoratedSubtype 1 "Wampum" beads

Figure 11, Row A 10-14

396 specimens

Wampum beads are tubular in shape and were made from the columellae of conch shells or from the umbo of the clam Venus mercenaria (Cleland 1971: 39), resulting in white or white and purple beads respectively. Used as both trade goods and a monetary unit of exchange, wampum was an important economic and social item to Indians and European alike. Although wampum had been used on the East coast of North America prior to European contact (Bushnell 1906: 173-177), it soon became an item of European manufacture and commerce. The uniformity and exactitude of shaping and drilling the Fort St. Joseph specimens, indicates production by steel tools and probable European origin. Approximately 60 percent of all wampum beads were the highly prized purple variety, with the remainder ranging in color from pure white, to beige, tan, and brown. Length range: 4.0-13.3 mm. Width range 2.1-4.1 mm.

Type 2 Convexo-tubularVariety a Undecorated

Figure 11, Row C 9

2 specimens

These beads are long and tubular with tapering edges. The bore diameter is large enough that

the bead could have also been utilized as hair pipe pipes or other ornaments.
Length range 25.0-33.1 mm. Width range 6.3-7.7 mm.

Type 3 Disc shaped

Variety a Decorated

Figure 11, Row C 8
1 specimen

This runtee is 17.7 mm. in diameter, 3.8 mm. in thickness, and is decorated on one side with four central drilled dots surrounded by a border. A single hole runs longitudinally through the thickness of the disc which has been drilled from both ends, meeting somewhere in the center.

Series C Catlinite

Type 1 Square elongate to convexo-elongate

Variety a Undecorated

Figure 11, Row B 1,2,3
3 specimens

These specimens exhibit square or round cross sections and either squared or tapered ends. They are composed of red catlinite which has been smoothed and polished to shape and drilled with a single perforation running the length of the bead. A total of 59 specimens were recovered at the Lasanen Site (1670-1715) which are very similar to the St. Joseph specimens (Cleland 1971: 47-48).

Series D Azurite

Type 1 Round

Variety a Decorated

Figure 11, Row B 4,5
2 specimens

These specimens are composed of azurite ($\text{Cu}_3\text{CO}_3\text{OH}$) and are blue to turquoise in color. The beads are hand carved and exhibit 15-17 cut grooves which run the length of the beads. Azurite is not found locally and had to be obtained through trade or travel.

Series E HematiteType 1 TubularVariety a Undecorated

Figure 11, Row B 6

1 specimen

This specimen is crudely carved and polished from a low grade hematite ore and is probably of aboriginal manufacture.

Length 21.5 mm. Diameter 21 mm.

Series G CeramicType 1 RoundVariety a Decorated

Figure 11, Row B 8

1 specimen

This bead is characteristic of Wedgwood's "Jasper Ware" which was first developed in 1776. The body of the bead is bright blue with a raised circumferential band around the center, and upon which twelve 8 pointed stars have been applied in bas-relief. The end of the bead has been capped with a 12-pointed star or rosette which also has been applied in relief. All relief stars are white with a slightly blue tint probably caused by a bleeding of the blue body. The bluish tint of the white, in combination with a highly polished smooth body and high relief detail, is characteristic of Wedgwood prior to 1796 (Mankowitz 1972: 107-108). Wedgwood produced numerous small, inexpensive items for sale and export, although mention of bead production has not been found. This bead is probably part of a strand worn by a high status individual such as a commandant's wife, rather than an item produced specifically for trade.

Length 12.0 mm. Diameter 13.1 mm.

Series H Copper/Pewter

These specimens are composed of copper which at one time had been covered by a thin layer of pewter. Some specimens retain little or none of the original coating, while others are remarkably well preserved.

Type 1 Convex with collars

Figure 11, Row C 1,2

3 specimens

These specimens exhibit an overall convex shape with outwardly flared collars on each end. The shape of these beads is regular and uniform and probably resulted from casting in a mold.

Length range 15.3-16.0 mm. Width range 14.1-14.9 mm.

Type 2 RoundVariety a Undecorated

Figure 11, Row C 3,4

13 specimens

The shape of these beads vary considerably in size and regularity and no two beads are identical. The bore diameter also varies a great deal and ranges from 3.6 to 7.3 mm.

Length range 5.9-10.0 mm. Diameter range 10.3-15.0 mm.

Type 3 DoughnutVariety a Undecorated

Figure 11, Row C 5

1 specimen

This bead is in a good state of preservation and retains 95 percent of the original pewter coating. Diameter 14.9 mm. Thickness 4.1 mm.

C-SHAPED BRACELETS

C-shaped bracelets made of brass and iron appear to have been fairly common trade items during the 18th century, and are reported from several sites including Fort Michilimackinac, Lasanen Site, and the Guebert Site. At Fort St. Joseph, a total of 48 bracelets were recovered from the surface, and are classified based upon material of manufacture, number of components, and decorative motifs.

Class I Iron

Series A Single Band Construction

Type 1 Undecorated

Figure 12A

5 specimens

These examples exhibit bands, round in cross-section, with no evidence of decoration. Length ranges from 6.7 to 7.0 cm.

Class II Brass

Series A Single Band Construction

Type 1 Undecorated

Variety a Thin round cross-section

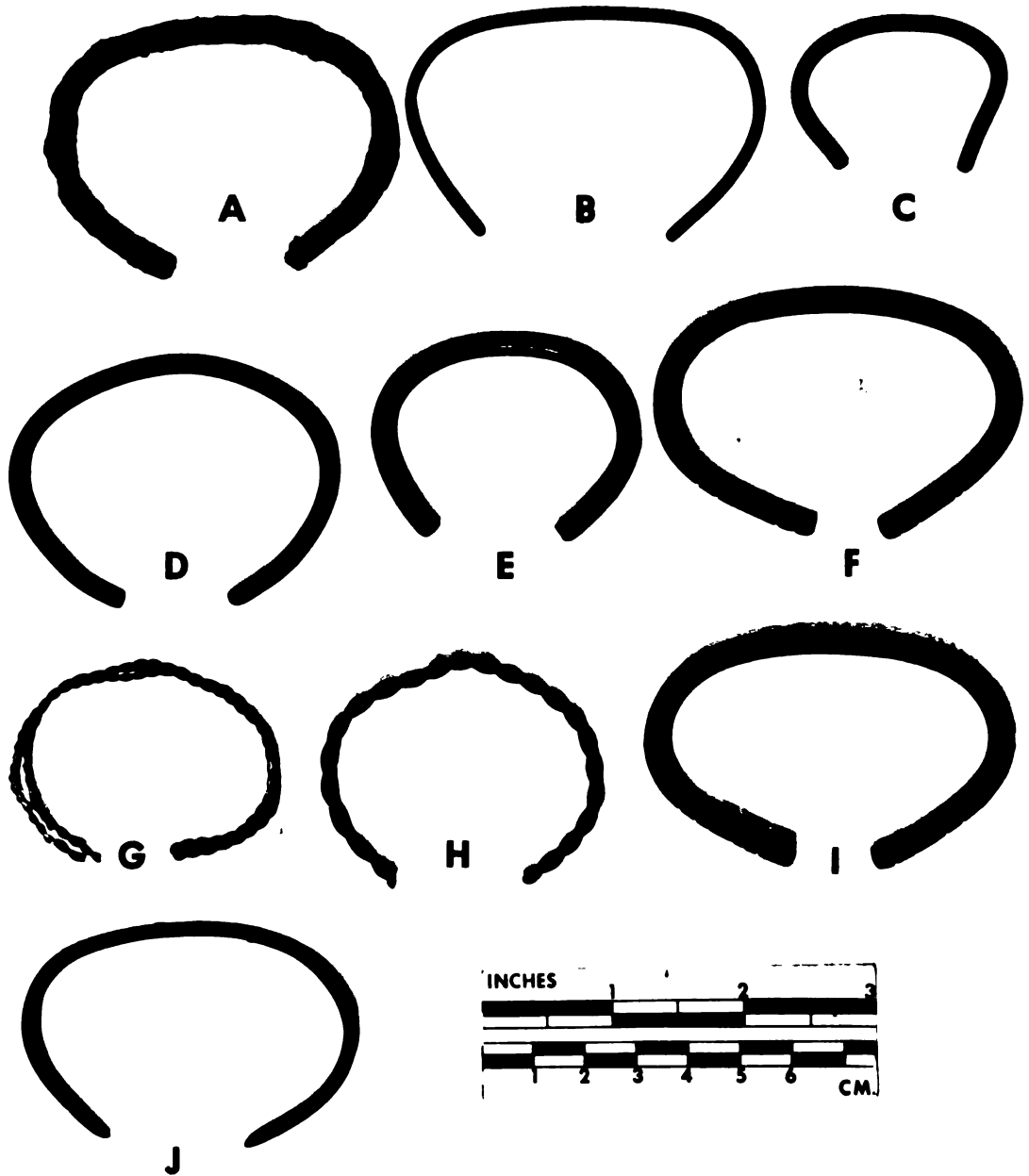
Figure 12B

22 specimens

These bracelets were made of round brass wire approximately 1.7 mm. in diameter. The

Figure 12 C-Shaped Bracelets

Figure Designation	Taxonomic Designation
A	CI, SA, T1
B	CII, SA, T1, Va
C	Vb
D	Vb
E	Vb
F	SA, T2, Va
G	SB, T1, Va
H	Va
I	SA, T2, Va
J	SA, T2, Vb



possibility exists that these bracelets may have been placed side to side and then bound to form a very wide bracelet. Length range 6.1-7.0 cm.

Variety b Thick round cross section

Figure 12C,D,E

9 specimens

These bracelets are similar to Variety 'a' specimens except that they are comparatively much thicker in cross-section, ranging from 2.1 to 4.0 mm. in diameter. All specimens are round in cross-section except for one specimen which exhibits flattened sides. This variety of bracelet is reported from Fort Michilimackinac (Stone 1974: 134-135) and the Guebert Site (Good 1972: 131). Overall length range from 4.0 to 7.5 cm.

Type 2 Decorated

Variety a Round cross-section

Figure 12F,I

7 specimens

These bracelets are similar to the previous Type 1 variety 6 specimens except that they have been decorated with parallel and criss-crossed lines which have been cut or filed into the wire. These specimens are approximately 4.0 mm. in cross-sectional diameter, and are 5.1 to 6.9 mm. in overall length. Similar bracelets have been found at Fort Michilimackinac (Stone 1974: 135) and the Guebert Site (Good 1972: 130).

Variety b Flat cross-section

Figure 12J

2 specimens

These bracelets exhibit flat bands, 6 mm. in width which are decorated with incised lines. Overall lengths are 4.2 and 6.3 cm.

Series B Multiple Band Construction

Type 1 Undecorated

Figure 12G,H

These bracelets are composed of two to four wire strands which have been twisted together. One

bracelet was found at the Lasanen Site in northern Michigan which was composed of numerous C-shaped twisted bands joined together (Cleland 1971: 24). Twisted bracelets are also reported from Michilimackinac (Stone 1974: 135).

BUCKLES

In the literature buckles are often divided into functional categories based on size, shape, etc., and given names such as shoe, harness, belt, spur, knee, baldric, and stock (Stone 1974: 25). Even that list can be greatly expanded when military accoutrements are carefully examined. However, at the present time these buckle categories are difficult to define due to a lack of information about the varied types. Therefore, a grouping of these buckles is based upon attributes of raw materials, shape, and decoration, rather than a less accurate grouping based upon supposed function. A total of twenty-nine buckles and buckle fragments are present in the Fort St. Joseph collections.

Class I Iron

Series A Square to rectangular frames

Type 1 Undecorated

Specimen #1

Figure 13A

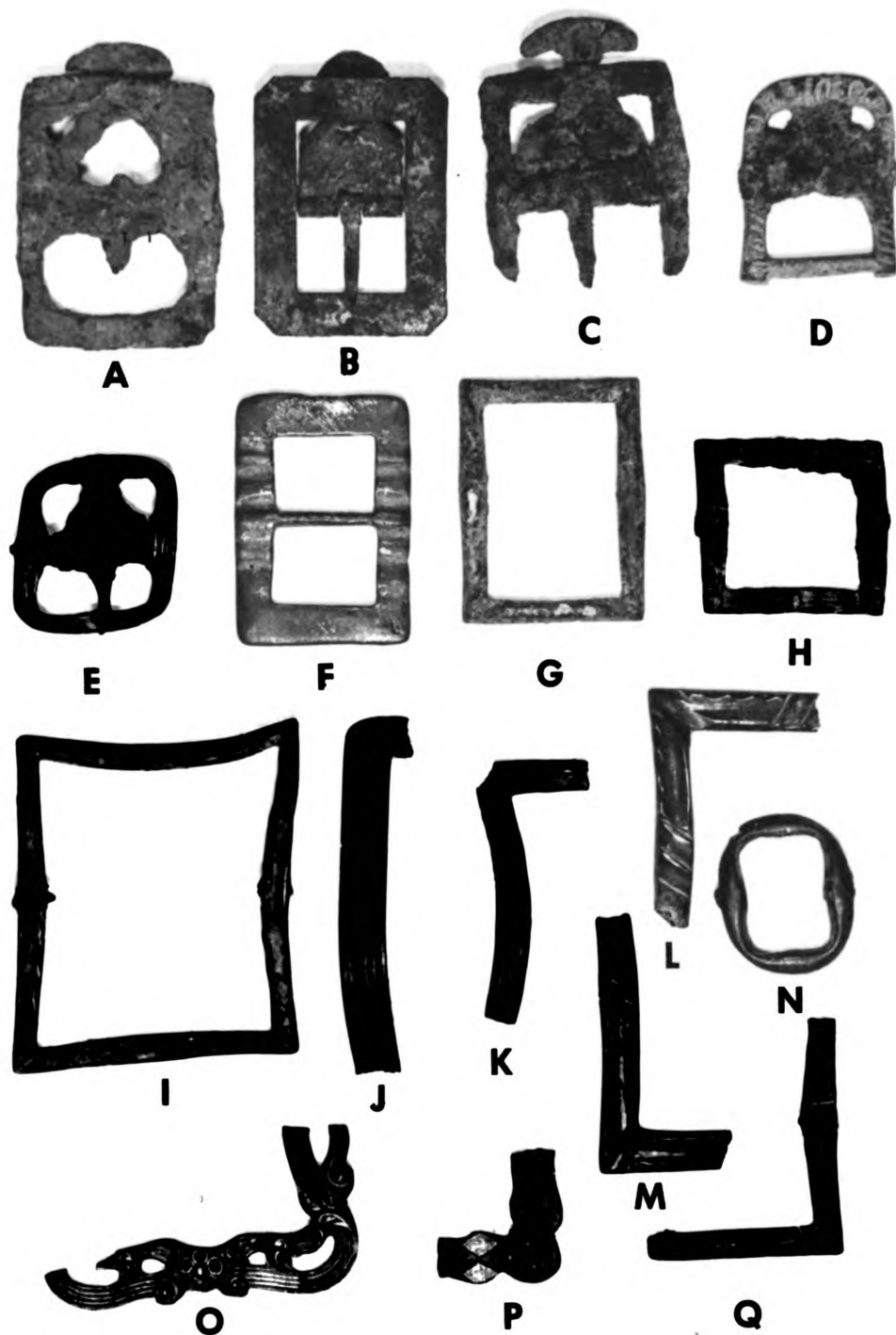
Frame length 4.3 cm.

Frame width 3.1 cm.

Consists of an iron frame with moveable hinge bar, hook, and tongue. Probable use: harness or belt.

Figure 13 Buckles

Figure Designation	Taxonomic Designation
A	CI, SA, T1, Sp #1
B	CII, SA, T1, Sp #1
C	CI, SA, T1, Sp #2
D	CII, SB, T2, Sp #1
E	Sp #2
F	CII, SA, T2, Sp #1
G	CII, SA, T1, Sp #2
H	CII, SA, T2, Sp #2
I	Sp #3
J	Sp #4
K	Sp #5
L	Sp #6
M	Sp #7
N	CII, SB, T1, Sp #1
O	CII, SA, T2, Sp #8
P	Sp #9
Q	Sp #10



Specimen #2

Figure 13C

Frame length 3.4 cm. (incomplete)

Frame width 3.0 cm.

Consists of an iron frame with one end missing,
a moveable hinge bar, hook, and tongue.

Probable use: harness or belt.

Specimen #3

Not illustrated

Iron frame only: frame length 4.7 cm.

Frame width 2.7 cm.

Holes were drilled for placement of hinge bar.

Specimen #4

Not illustrated

Frame length 3.1 cm.

Frame width 3.4 cm.

Iron frame with hook attached to one end of
frame. Probable use: harness.Specimen #5

Not illustrated

Frame fragment (length and width unknown)

Class II BrassSeries A Square to rectangular framesType 1 UndecoratedSpecimen #1

Figure 13B

Frame length 4.0 cm.

Frame width 3.0 cm.

Brass frame with outside edges cut flat,
moveable hinge bar, tongue, and hook. The
tongue has an addition stud of metal added
for the attachment to leather. Probable use:
belt or harness.Specimen #2

Figure 13G

Frame length 3.8 cm.

Frame width 2.8 cm.

Frame only, probable use: belt.

Type 1 discussion: An additional three specimens fall into this category, however their fragmentary condition does not permit measurement of frame size nor suggestion of possible function.

Type 2 Decorated

Specimen #1

Figure 13F

Frame length 3.9 cm.

Frame width 2.7 cm.

This specimen consists of a brass frame and solid cast hinge bar. Four ripples on both top and bottom decorate this piece. Probable use: belt.

Specimen #2

Figure 13H

Frame length 2.8 cm.

Frame width 3.0 cm.

This specimen consists of a frame with a scalloped face and decoration in the form of eight circular dots at the four corners and midpoints. These dots were connected by fine raised fones running concentrically within the frame. Probable use: knee or hat

Specimen #3

Figure 13I

Frame length 5.1 cm.

Frame width 4.3 cm.

This specimen consists of a frame with scalloping on the inside edge as a form of decoration. Two holes have been drilled for the placement of a hinge bar. Probable use: shoe

Specimen #4

Figure 13J

Frame fragment, estimated length 8.0 cm.

(assuming that the hinge bar is placed at the midpoint).

The frame is decorated with a rope-like border on both the inside and outside edges of the frame, with five parallel lines between.

Probable use: shoe.

Specimen #5

Figure 13K

Frame fragment, estimated length 5.0 cm.
The frame is decorated with a groove cut into the center of the frame. Probable use: shoe.

Specimens #6,7

Figures 13L,M

Frame fragments, estimated length 5.6 cm.
The frames are identical in decoration and may have come from a single buckle. The decoration consists of a series of diagonally incised lines in sets of three which are placed at the four midpoints of the sides. In addition, the outer edge of the frame has been scalloped, and the inner one beveled slightly. Probable use: shoe.

Specimen #8

Figure 130

Frame fragment.
This specimen has an ornate floral decoration with a flower in the center of one side and leafy scroll work. Similar rococo style decorated buckles have been found at Fort Michilimackinac, but none are exactly identical to this specimen. Probable use: shoe.

Specimen #9

Figure 13P

Frame fragment.
This specimen has a decoration consisting of a number of raised and indented diamonds.
Probable use: belt, shoe.

Specimen #10

Figure 13Q

Frame fragment, frame length 4.4 cm.
Frame width 3.0 cm.
This specimen has small column-like scrolls at the pin terminal and both the inner and outer edges are beveled to produce a cross section which is trapezoid. Probable use: belt or shoe.

Specimen #11

Not illustrated

Frame fragment.

Highly decorated rococo frame similar to specimens found at Michilimackinac. Probable use: shoe.

Specimen #12

Not illustrated

Frame fragment, frame length 4.4 cm. (estimated)

Frame width 3.0 cm.

Same as Specimen #10, except with two incised grooves at the corner.

Specimen #13

Not illustrated

Frame fragment.

The poor condition of this specimen presents difficulty in description of decoration.

However, a floral motif appears to be present.

Series B Oval or rounded framesType 1 UndecoratedSpecimen #1

Figure 13N

Complete frame, frame length 2.5 cm.

Frame width 2.2 cm.

Probable use: knee, garter

Type 2 DecoratedSpecimen #1

Figure 13D

Complete frame with corroded tongue or hook, frame length 3.2 cm.

Frame width 2.5 cm.

One end of this specimen ends in a round bar to which a strap would be permanently attached. The sides and top of this specimen are decorated with a series of incised lines running the frame length. Probable use: harness?

Specimen #2

Figure 13E

Complete frame, tongue, and hook, frame length 2.8 cm.

Frame width 2.5 cm.

Two grooves in the face of the frame provide a ripple of decoration. Probable use: knee.

Specimen #3

Not illustrated

Frame fragment, frame length 4.6 cm.

Frame width 3.5 cm.

This specimen exhibits flat sides and rounded ends. The decoration consists of a single deep groove on each side ending near the ends of the buckle. The ends are also decorated, having a series of raised and lowered ridges within a raised border. Probable use: shoe.

Buckle Discussion.--Two buckle fragments which lack all diagnostic attributes are also present in the buckle sample. One frame fragment depicts a floral motif, not unlike a specimen found at Michilimackinac (Stone 1974: 38, Figure 223). In addition, a complete tongue and hinge bar are present which resemble in shape a specimen from Michilimackinac (Stone 1974: 32, Figure 205). This tongue has the block letters 'M,L' within an oval cartouche with the letters -- -- -- MAN below.

The buckle specimens from Fort St. Joseph are similar in form to many of those found at Michilimackinac, however none are exact in detail. In all cases where the pin terminals are drilled, the raised portion is gently sloping and solid metal, which may indicate a pre-1760 time range (Grimm 1970: 48).

BUTTONS

A total of sixty-five buttons are present in the Fort St. Joseph collections and are identified as of both military and civilian use. This frequency is quite low in comparison to the 1,333 specimens recovered from Fort Michilimackinac perhaps reflecting the lower population at Fort St. Joseph. The button sample from St. Joseph is classified into four main classes based upon the number of elements used in the construction of a particular button and ranges from one to four elements. Further divisions into groups, types, and subtypes is dependent upon variations in material of manufacture, shape of button face, and articulation of eye elements. Description of many specimens is on an individual basis and will include characteristics such as design elements and cast words and letters.

Class I One element construction

Series A Cast metal

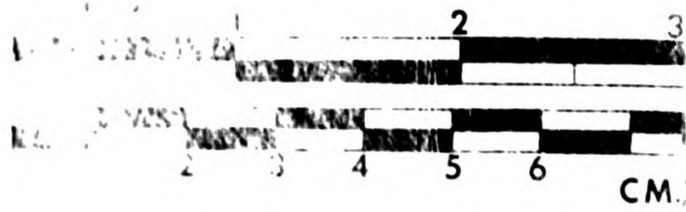
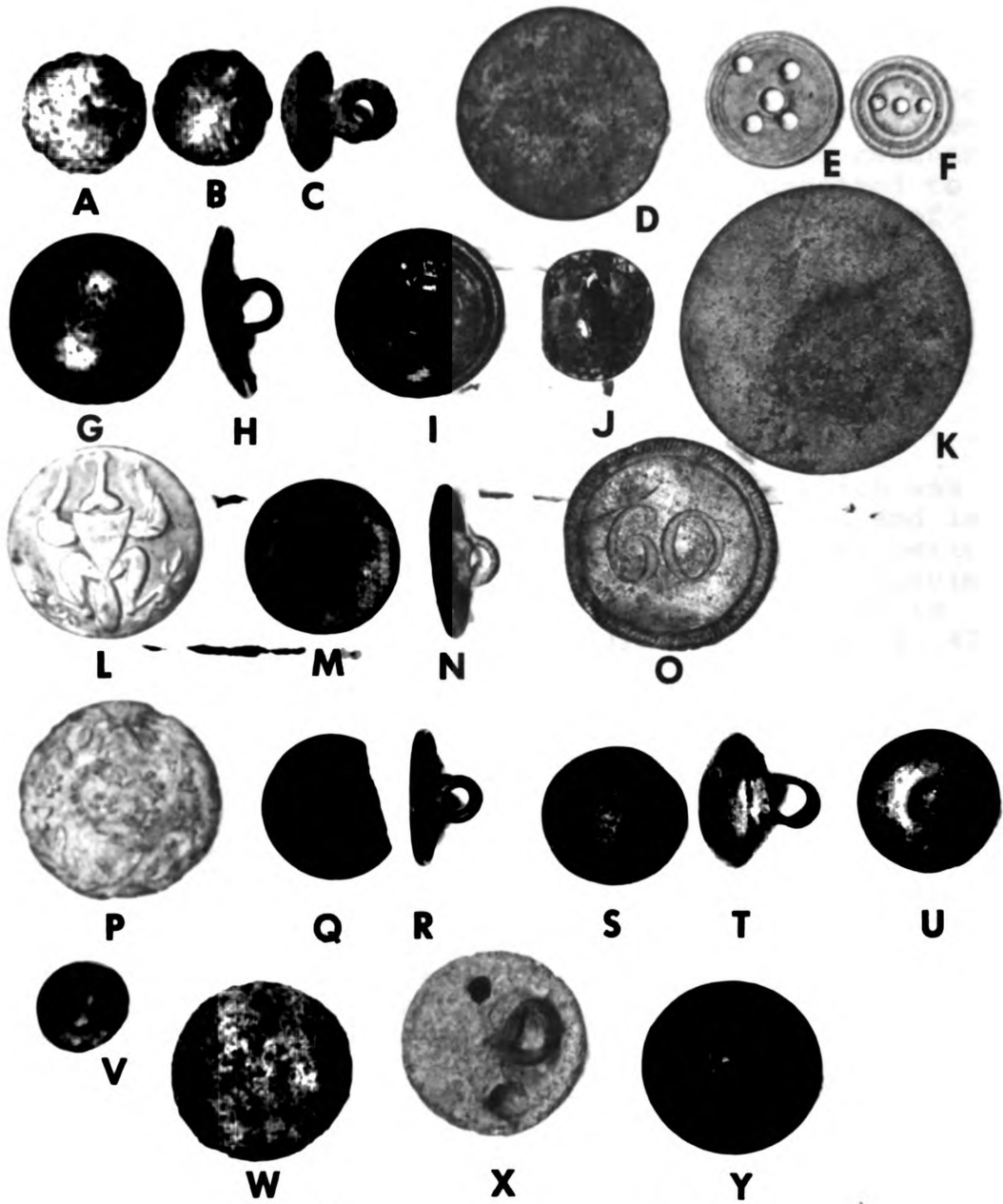
Group 1 Stemmed cast eye

Type 1 Convex face

Figure 14A,B,C
3 specimens

Figure 14 Buttons

Figure Designation	Taxonomic Designation
A	CI, SA, G2, T1
B	T1
C	T1
D	G2, T1
E	SB, G1, T1, Va
F	Vb
G	CII, SA, G1, T1, Va
H	Va
I	Vb, Sp #1
J	Sp #2
K	T2, Va
L	Va
M	G2, T1, Sp #1
N	Sp #2
O	Sp #8
P	Sp #9
Q	Sp #6
R	Sp #7
S	CIII, SA, G1, T1
T	T1
U	T1
V	G2, T1
W	G3, T1
X	T1
Y	CIV, SA, G1, T1



These examples exhibit convex faces and flat backs. A mold seam is present on the eye, stem, and back sections. Two of the specimens display no design element while the third exhibits a series of perpendicular lines forming a cross motif on the face. All specimens are composed of pewter and are thirteen mm. in diameter. Similar specimens recovered from Fort Michilimackinac are suggested to date from 1740-1780 and were primarily of civilian use (Stone 1974: 47).

Group 2 Drilled eye

Type 1 Flat face

Figure 14D

1 specimen

This example exhibits a thin eye which was drilled after casting. It is brass, and is similar to specimens of the 1700-1765 period (Olsen 1963: 552, 553). One similar specimen is reported from Michilimackinac which is approximately 1 mm. smaller (Stone 1974: 47). Diameter 24 mm.

Series B Bone

Group 1 Drilled eye

Type 1 Flat face and back

Variety a Five-hole

Figure 14E

1 specimen

Diameter 16 mm.

Variety b Three-hole

Figure 14F

1 specimen

Diameter 12 mm.

Both variety 'a' and 'b' specimens could have been used separately as buttons or could have been back pieces for three and four piece constructed specimens.

Class II Two element constructionSeries A MetalGroup 1 Soldered wire eyeType 1 Convex faceVariety a U-shaped eye

Figure 14G,H

7 specimens

These buttons exhibit convex faces with a flat outer rim. The backs are concave and have u-shaped eye elements soldered onto the brass body sections. Dating from 1730 to 1760, these specimens are French military uniform buttons (Stone 1974: 48-49). Three sizes of buttons are present:

20 mm. (4 specimens)

19 mm. (2 specimens)

18 mm. (1 specimen)

Variety b Closed circular eye

Figure 14I,J - Niles

Figure 15I,J,K - South Bend

These specimens exhibit convex faces and concave backs and are composed of brass.

Specimen #1

Figure 14I

Obverse: Plain

Reverse: "EXTRA RICH W SUPER FINE"

Diameter 19 mm.

Specimen #2

Figure 14J

Obverse: Zig-zag border decoration

Reverse: Plain

Diameter 15 mm.

Specimen #3,4

Figure 15I

Obverse: Plain

Reverse: Wreath-like border

Diameter 17 mm.

Figure 15 Buttons

Figure Designation	Taxonomic Designation
A	CII, SA, Gl, T2, Va, Sp #1
B	Sp #2
C	Sp #3
D	Sp #4
E	Sp #5
F	Sp #6
G	Sp #8
H	Sp #9
I	T1, Vb, Sp #3
J	Sp #5
K	Sp #6



A



B



C



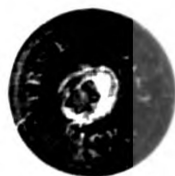
D



E



F



G



H



I



J



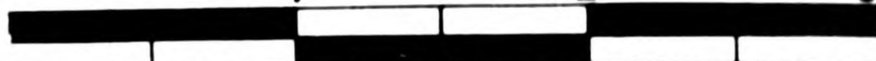
K

INCHES

1

2

3



1

2

3

4

5

6

CM.

Specimen #5

Figure 15J

Obverse: Plain

Reverse: "PLATED" and wreath pattern

Diameter 21 mm.

Specimen #6

Figure 15K

Obverse: Plain

Reverse: "GILT" and wreath pattern

Diameter 19 mm.

Comments: Variety 'b' specimens 1,3,4,5,6 most probably date from the nineteenth century circa 1800-1860 (South 1964: 120-121). The practice of stamping words on the backs of buttons began around 1800, and by 1820 was widely accepted (Olsen 1963: 552). Similar buttons have not been reported from Fort Michilimackinac, which was abandoned in 1781.

Type 2 Flat faceVariety a Circular closed eye

Figure 14K,L - Niles

Figure 15A-H - South Bend

15 specimens

These specimens exhibit flat faces and backs. Specimens #1 through #14 are brass, specimen #15 is pewter.

Specimen #1

Figure 15A

Obverse: Plain

Reverse: Long-necked American eagle plus "*BEST*"

Diameter 22 mm.

Specimen #2

Figure 15B

Obverse: Plain

Reverse: "BEST QUALITY" with wreath

Diameter 23 mm.

Specimen #3

Figure 15C

Obverse: Plain

Reverse: "BEST ** COLOUR**"

Diameter 20 mm.

Specimen #4

Figure 15D

Obverse: Plain

Reverse: "BEST QUALITY ***"

Diameter 16 mm.

Specimen #5

Figure 15E

Obverse: Plain

Reverse: "TIN GOLD COLOUR"

Diameter 18.5 mm.

Specimens #6,7

Figure 15F

Obverse: Plain

Reverse: "GILT" with wreath

Diameter 21 mm.

Specimen #8

Figure 15G

Obverse: Plain

Reverse: "TREBLE GILT RICH ORANG(E)"

Diameter 14 mm.

Specimen #9

Figure 15H

Obverse: Plain

Reverse: "BEST"

Diameter 21 mm.

Specimens #10-13

An additional four specimens, all with diameters of 19-20 mm. have plain faces and words or designs on their back.

They, however, are so poorly preserved that the words are not distinguishable.

As with Type 1, Variety b examples, Specimens 1 through 13 also date within an 1800-1860 time span.

Specimen #14

Figure 14K

Obverse: Without design elements

Reverse: Without design elements

Diameter 33 mm.

Specimen #15

Figure 14L

Obverse: Frog-legged eagle

Reverse: Plain

Diameter 23 mm.

This button is an early American Military button of "Waynes Legion" and was in use from 1792-1798 (Campbell 1965: 2). American forces were stationed at Fort Mackinac on Mackinac Isl. during the 1796-1812 and 1815-1890 periods.

Group 2 Eye cast in placeType 1 Flat faceSpecimen #1-5

Figures 14M,N

Obverse: Plain

Reverse: Plain

Diameter 17-18 mm.

These specimens are pewter and may represent military uniform buttons of 1760-1785 (Olsen 1963: 552-553). South (1964: 117) suggests a 1726-1776 time period based on specimens from Brunswick Town and Fort Fisher.

Specimens #6,7

Figure 14Q,R

Obverse: Plain

Reverse: Plain

Diameter 16 mm.

These specimens are brass and exhibit slightly convex faces and concave backs. In appearance they greatly resemble specimens #1-5, and most probably serve the same function as well as time period.

Specimen #8

Figure 140

Obverse: Incised 60 with border decoration

Reverse: Plain

Diameter 25 mm.

This specimen is a military button of the English Sixtieth Regiment which was stationed at Fort St. Joseph from 1760 to the mid 1770s. It is pewter.

Specimen #9

Figure 14P

Obverse: Crown surrounded by floral wreaths

Reverse: Plain

This specimen is pewter and is most likely of British origin within a 1760-1780 time span.

Type 2 Convex face

Not illustrated

1 specimen

This specimen is pewter, 23 mm. in diameter, and displays an incised K's 8 on the obverse.

The reverse is plain and is concave. This example is a military button of the British King's Eighth Regiment, not reportedly stationed at Fort St. Joseph, although it was at Fort Michilimackinac between 1774 and 1781 (Stone 1974: 49), where similar specimens have been found.

Class III Three element constructionSeries A MetalGroup 1 Soldered eyeType 1 Convex face and back

Figures 14S,T,U

13 specimens

These examples are constructed of three elements--a cast face, back and eye. The back and face have been brazed together and exhibit an overall spheroidal shape. Eye elements are large and strap-like in appearance and are U-shaped. Silver solder has been applied to the backs of these specimens, and to the fronts of several, giving them a silver, pewter-like

appearance. One specimen (not illustrated) exhibits no solder on front or back, and a design on the obverse, composed of a large circle surrounded by two smaller ones each containing a small flower design. Diameters range from 15 to 18 mm. and thickness from 6 to 11 mm. These "bell shaped" buttons cover a large span of time, and are reported from Michilimackinac (Stone 1974: 53) in a 1740 to 1760 context, and from the Lasanen Site (Cleland 1971: 26-27) dating from 1670-1715. The uniformity in shape and construction may indicate military use.

Group 2 Drilled eye, cast in place

Type 1 Convex face and back

Figure 14V

1 specimen

This example is brass, 12 mm. in diameter, and is constructed of a cast face, back, and eye element which has been cast in place onto the back piece and then drilled. The small size of this specimen may indicate use as a cuff-link or sleeve button. Specific identification however, is not possible.

Group 3 Inserted eye cast in place

Type 1 Convex face, slightly convex back

Figure 14W,X

6 specimens

These specimens consist of an iron eye element which has been inserted and cast into place around the back piece. The face and back have been cast and joined, and two holes for expanding gasses are present on the back. These specimens are British military buttons of the 1760 to 1780 period (Stone 1974: 53). Two sizes of buttons are present: 20 mm. (5 specimens) and 15 mm. (1 specimen).

Class IV Four element construction

Series A Composite materials

Group 1 Inserted eye

Type 1 Convex face, flat back

Figure 14Y

1 specimen

This example exhibits a thin brass face displaying a faceted geometric design, a single holed bone back piece, an inserted brass eye, and a filler. It is 21 mm. in diameter.

Discussion.--The button sample from Fort St.

Joseph is very small and suggests the presence of a low population at the site throughout the eighteenth century. Military buttons which are French, English, and American demonstrate the presence of these groups during the 1730-1796 period, and point out the general lack of heavy military occupation at the site. The high frequency of buttons with worded or designed backs, dating after 1800 suggests a post-1781 occupation of the site which was non-military.

SLEEVE BUTTONS OR CUFF LINKS

Sleeve buttons are functionally distinguishable from other buttons due to their size, articulation of shank, and the fact that they are often found in sets joined by a metal link. These buttons are usually more ornate than common ones, and are often found in round, oval, and octagonal shapes as well as unusual shapes mounted with glass or crystal settings. Hume (1961: 383) suggests an evolution in sleeve buttons from circular, through octagonal shapes, back to round, and then to the oval; however he cautions that overlap of styles occurred thus interfering with a simple straight progression. The collections in the Fort St. Joseph Historical Museum have yielded eight sleeve buttons, four of which compose two sets of identical specimens. They may be described as follows:

Specimen #1

Figure 16D

This specimen is a single brass button with an octagonal face and is of one piece construction. It exhibits an eye which is flat, U-shaped, and has been drilled. The decorative motif on the face consists of a border of 20 circles surrounding a smooth undecorated octagonal center. An identical specimen is pictured by Hume (1961: 381, Figure 3) which was found at the Rosewell excavations in Gloucester County, Virginia. Hume places a date of 1750 on that specimen.

Diameter 1/2 inch or 12.8 cm.

Figure 16 Sleeve Buttons or Cuff Links

Figure Designation	Taxonomic Designation
A	Sp #5, 6
B	Sp #3, 4
C	Sp #7, 8
D	Sp #1
E	Sp #2



A



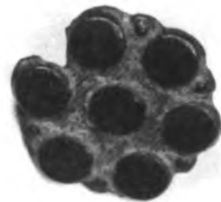
B



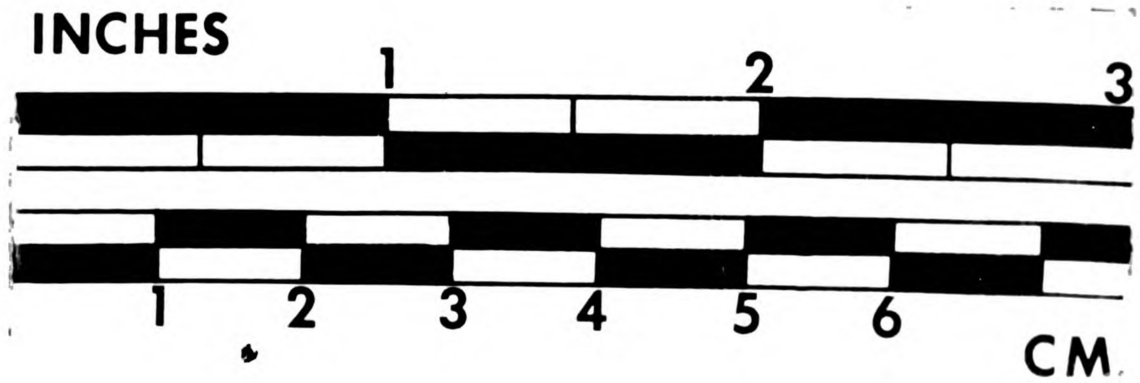
C



D



E



Specimen #2

Figure 16E

This specimen is a single brass button of one piece construction and an octagonally shaped face. The design motif consists of a central circle surrounded by six others, and is nearly identical to a specimen found at Michilimackinac dating in the 1750-1780 time period (Stone 1974: 76). The eye element is similar to that of specimen #1, and the overall diameter is 13.6 mm.

Specimen #3,4

Figure 16B

These specimens comprise a set of identical buttons joined together by an S-shaped brass link. The backs of these buttons are brass, deeply cupped with a small eye, and accommodate two cushion-shaped glass insets. Similar examples of buttons with glass insets date within the 1740-1780 time span (Stone 1974: 76). Diameter 9 mm. Depth 9.9 mm.

Specimens #5,6

Figure 16A

These specimens comprise a set of buttons joined by a C-shaped link. They are of one piece construction, and exhibit shanks which are semi-circular, flat, and drilled. The face is highly decorated and a crown, two roses, and the letters F--P-R/EADIM to the left and right of the central design. This specimen is most likely of British origin within a 1760-1780 time span.

Specimens #7,8

Figure 16C

These specimens comprise a set of buttons joined by an oval C-shaped link. They are composed of dome shaped milk-white glass into which brass eyes have been set. Diameter 9.7 mm.

CALTROPS

Caltrops are four pronged metal objects designed so that upon placement on a flat surface, three prongs form the legs of a tripod while the fourth is held in a vertical position to the ground. At times of battle these objects were scattered upon the ground in strategic areas in order to injure horses' hoofs or the feet of the advancing enemy. Two caltrops are present in the Fort St. Joseph collection (Figure 17); one is a complete specimen and one is nearly complete. Both caltrops are barbed on all four prongs making them even more difficult to dislodge. Each of the two specimens appears to have been constructed from two pieces of metal, bent to 90 degrees and joined together at the angles by repeatedly hammering and forging. When erect, the specimens vary in height from 35 mm. to 47 mm., with prong lengths of 27 mm. and 32 mm. respectively. Peterson (1968: 109) notes that caltrops were used by the British during the revolutionary period.

Figure 17 Caltrops



INCHES

1

2

3



1

2

3

4

5

6

CM.

CERAMICS

A total of one-hundred sixty ceramic sherds are present in the Fort St. Joseph collections. This is an extremely low frequency in comparison to the 14,407 sherds recovered from Michilimackinac and reflects both the social and demographic differences between the sites. In their analysis of the Michilimackinac ceramic sample, Miller and Stone (1970: 25) conclude that "The ceramic artifacts indicate a standard of living, for at least some of the Fort's occupants, well above the austere conditions that supposedly prevailed on the frontier prior to the American Revolution." They go on to state that "The ceramic evidence also suggests that the English, after taking possession in 1761, enjoyed far more of the amenities of life than did their French predecessors."

Ceramics is an especially important artifact category in that it reflects a number of socioeconomic factors about the users such as population density, nationality, status, and availability of resources. The wealth of archaeological as well as historical evidence regarding ceramics also allows for an examination of these features within a relatively tight chronological framework.

The ceramic sample from Fort St. Joseph has been classified using a combination of physical attributes and historical documentation and is very similar to the typology devised by Miller and Stone (1970) for use with the Michilimackinac ceramics, but revised to accommodate the St. Joseph ceramics. The St. Joseph sample is divided first into three major classes--Earthenware, Stoneware, and Porcelain, and then into groups, types, and varieties based upon variances in form, manufacture, and decorative elements.

Class I Earthenware

Group A Tin glazed wares

This ceramic group consists of sherds with an opaque white glaze made from a combination of lead and tin oxide in a silica base. These wares were glazed on both exterior and interior surfaces and were often decorated. Tin glazed wares were used commonly throughout the eighteenth century and originated in England, France, Spain, and Italy. The sample specimens from Fort St. Joseph would be termed either Faience or Delft, indicating their French and English origins respectively. Group A specimens are often decorated with geometric and foliate designs, which appear to be predominantly of French origin. The color of the earthenware bodies vary from yellow to dark pink in color, and all sherds appear to have come from utilitarian pieces, such as plates and bowls.

Discussion: The low frequency of ceramics from Fort St. Joseph coupled with a wide variety of groups and types suggests an occupation by a relatively low population over a wide span of time. The fact that nearly 70 percent of the sherd sample is composed of tin glazed earthenwares also points towards a relatively low standard of living at the fort during the French period. Since however some finer quality wares are represented in the sample such as creamware, Ellerswares, Rheinisch Stoneware, and Chinese porcelain, some individuals at the fort appear to have enjoyed a more

"comfortable" life than others. Many of these quality wares date from the British period of occupation and suggests the possibility of status differences and a higher standard of living among at least some of the British military personnel than with their French predecessors, as was the case at Fort Michilimackinac.

The presence of pearlware, annular ware, and transfer printed earthenwares, which are later than the commonly accepted 1781 termination date, provide evidence that occupation of the site continued until the first quarter of the nineteenth century.

Type 1 White Undecorated

Not illustrated

41 specimens

These specimens exhibit white interiors and exteriors, some of which are slightly colored with a light blue or light green tint. These wares may have been completely undecorated, or may represent body sherds from specimens with only rim decoration.

Type 2 Blue decorated

Figure 18A,B,C

45 specimens

These examples exhibit white glazed interiors and exteriors and are decorated with blue cobalt designs on either or both surfaces. On forty-two of the sherds the design has been hand painted onto the surface prior to glazing, however on two sherds the design has been incised and cobalt applied to the scratched surface. One sherd of the latter type has been reworked into a circular disc for possible use as a gaming piece (Figure Q). In addition, one sherd (Figure R) was decorated with powdered blue cobalt. This specimen is of British origin and is from the second half of the eighteenth century. Powdered blue specimens have also been reported from Michilimackinac (Miller and Stone 1970: 40-42).

Type 3 Polychrome decoration

Variety a Blue and black

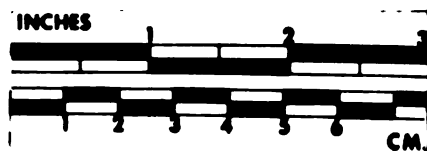
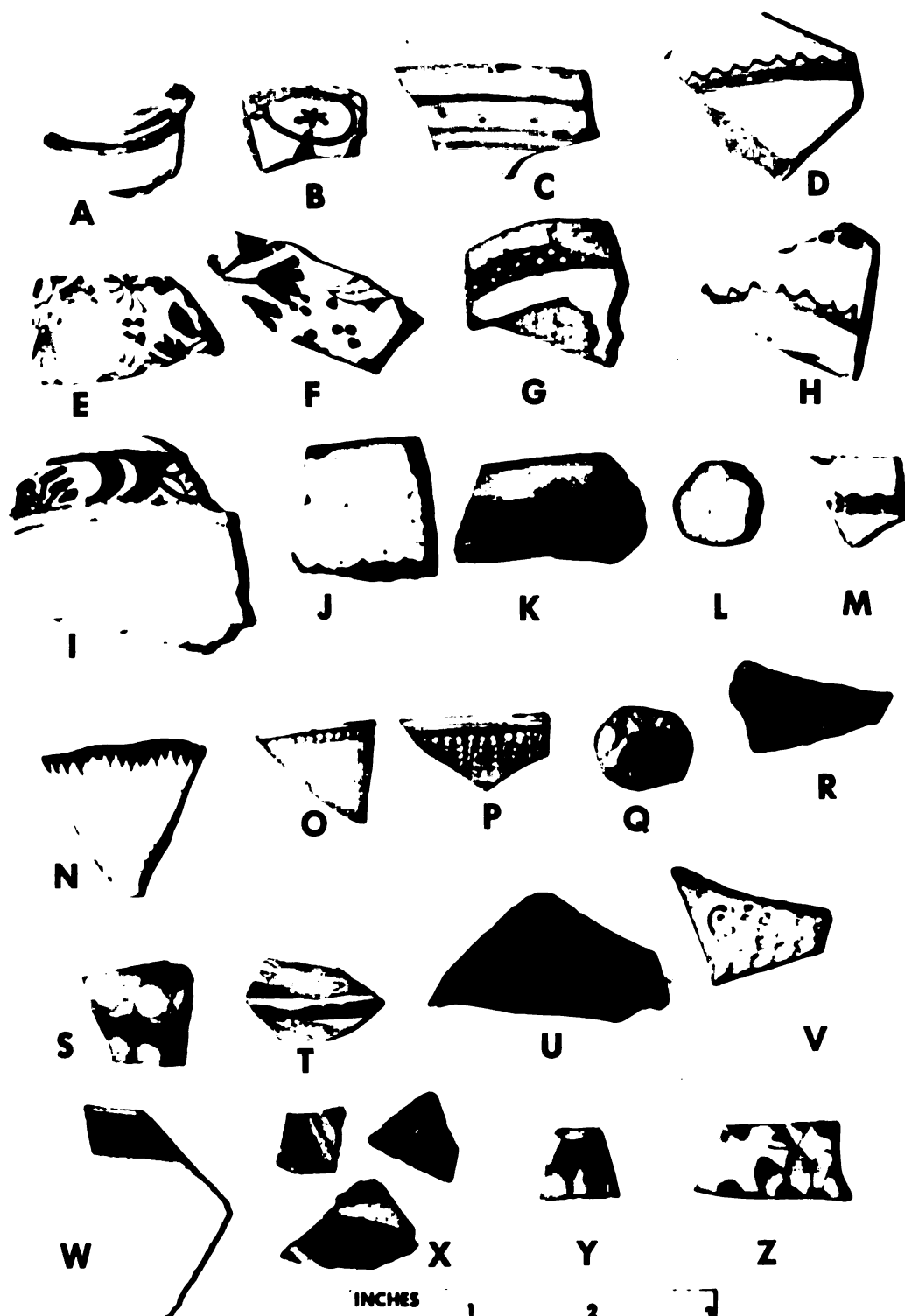
Figure 18D,E,F,G

14 specimens

These sherds have blue and black hand painted decoration which has been applied on either or both surfaces.

Figure 18 Ceramics

Figure Designation	Taxonomic Designation
A	CI, GA, T2
B	T2
C	T2,
D	T3, Va
E	Va
F	Va
G	Va
H	Vb
I	Vb
J	GB, T1
K	T1
L	T1
M	T2
N	GC, T1
O	GD, T1, Va
P	Vb
Q	GA, T2
R	T2
S	GE, T1
T	GD, T2
U	CII, GC
V	GA
W	GB
X	GD
Y	CIII, GA, T1
Z	T2



Variety b Blue and buff

Figure 18H,I

9 specimens

These sherds have blue and red hand painted decoration on either or both exterior and interior surfaces. Several of these sherds are noticeably thinner than other Group A specimens and may have come from a tea cup or higher quality bowls.

Group B Rouen-Type brown and white

These wares exhibit a tin-glazed interior and a brown lead-glazed exterior. Miller and Stone (1970: 38-39) state that this type of ware may have been manufactured in France, but was used throughout the eighteenth century, during French and British occupations at Fort Michilimackinac 1715-1781.

Type 1 Undecorated white interior, brown exterior

Figure 18J,K,L

15 specimens

One of these sherds has been shaped into a circular disc for use as a gaming piece. All specimens are quite thick and evidently come from utilitarian pieces.

Type 2 Blue and black decorated interior, brown exterior

Figure 18M

1 specimen

This sherd exhibits a geometrically patterned design on the interior surface.

Group C Pearlware

Pearlware is a white glazed and ceramic which rose to popularity in the late eighteenth century, lasting until about 1820 (Hume 1969: 130). These ceramics are most commonly found in the form of shell edged plates decorated on the edges with blue or green.

Type 1 Blue decorated

Figure 18N

3 specimens

Two of these sherds are decorated in a feathery edge design found on wares of the 1780-1795 period (Hume 1969: 131). No pearlware sherds have been

reported from Michilimackinac probably due to this late time period. These sherds, as well as others, suggest a post-1781 occupational period at Fort St. Joseph. The third pearlware sherd is also quite late and exhibits a molded design and a poorly applied band of blue on the rim edge. This specimen probably dates somewhat later than the shell edged sherds.

Group D Creamware

Creamware is a white-bodied, lead-glazed ceramic manufactured in England from 1760 until about 1790. Creamware sherds found at Fort Michilimackinac (3,549 specimens) were assigned a 1765-1780 time range, allowing several years for the ware to be transported to that frontier post (Miller and Stone 1970: 42).

Type 1 Molded decoration

Variety a Beaded

Figure 180

1 specimen

This specimen is a rim sherd from a cup or small bowl and bears a beaded decoration on the exterior surface. This rim decoration is found on bowls and cups recovered from Fort Michilimackinac dated 1765-1780.

Variety b Foliate pattern

Figure 18P

1 specimen

This specimen is a rim sherd from a small cup or bowl and is decorated with a molded foliate design on the exterior surface. This design has also been covered with a green tint before the lead glaze was applied. The interior surface is cream colored.

Type 2 Banded decoration - Annular wares

Figure 18T

1 specimen

Annular wares are a ceramic type consisting of a creamware body which has been decorated with bands of color. This specimen exhibits rows of brown bands which have been applied to the exterior surface, while the cream colored interior remains undecorated. Annular wares were popular during

the period 1795-1815, but were found on creamware bodies as early as 1785 (Hume 1969: 131).

Group E Slip decorated wares

Originating in England, slip decorated wares consisted of a red bodied earthenware which was covered overall with a clay slip and decorated with slip lines or dots. Small quantities of this group of ware were found at Fort Michilimackinac in the forms of cups, dishes, jugs and bowls (Miller and Stone 1970: 59-60).

Type 1 Dot and band pattern

Figure 18S

1 specimen

This sherd exhibits a buff colored body decorated on the exterior surface with brown bands onto which white slip dots were applied. The surface is covered evenly by a clear lead glaze.

Group F Brown glazed Redware

Not illustrated

3 specimens

These sherds exhibit brown lead glazed exterior and interior surfaces covering a buff colored body. Found also at Michilimackinac, these wares are primarily for utilitarian use and may be of French, English, or North American origin (Miller and Stone 1970: 51).

Group G Transfer printed wares

Not illustrated

12 specimens

Transfer printing as a decorative process was developed in England in the mid 1700s, but did not achieve common use until the final quarter of that century. From that time to the present, transfer printed wares have been in wide use in North America. The twelve specimens from Fort St. Joseph are decorated in blue (8 specimens), orchid (2 specimens), and brown (2 specimens) colors and probably date in the first quarter of the nineteenth century. Only eighteen sherds of transfer printed ware were recovered from Fort Michilimackinac all of which were early black colored wares.

Class II StonewareGroup A English white saltglazed

Figure 18V

2 specimens

White saltglazed stoneware is of English manufacture from the 1740-1770 time period. Although English, this ware may have been used by both French and British inhabitants at Fort Michilimackinac during that period (Miller and Stone 1970: 68). One specimen found at St. Joseph was undecorated, while another was molded with a dot, diaper, and basket pattern. This pattern has also been found on saltglazed wares from Fort Michilimackinac (Miller and Stone 1970: 69). A total of 2,465 specimens of this ware was found at Fort Michilimackinac (Ibid.).

Group B Brown and white saltglazed

Figure 18W

1 specimen

This example exhibits a white body with a brown rim band on the exterior surface. The single sherd is relatively thin compared to the Group A stonewares, and is covered with a clear saltglaze. The shape of this specimen suggests that the complete vessel may have been a drinking cup or tankard. Similar specimens of this ceramic group have not been reported from Michilimackinac.

Group C Ellersware

Figure 18U

1 specimen

Ellersware is a name given to red bodied unglazed stonewares developed by John and David Ellers (Miller and Steve 1970: 77). During the late seventeenth and throughout the eighteenth centuries, this ware was manufactured in England and gained general acceptance. The single specimen of Ellersware from Fort St. Joseph consists of a basal rim sherd from a cup or teapot and exhibits a stamped square-toothed design on the exterior surface. Specimens of this ware have been found at Michilimackinac and were assigned a date of the mid-eighteenth century (Miller and Steve 1970: 77). One sherd of Ellersware with an identically shaped decoration was recovered from Fort Ouiatenon, a French and English post on the Wabash River dating 1718-1781 (Tordoff 1976).

Group D Rheinish blue and grey saltglaze

Figure 18X

3 specimens

These examples exhibit incised designs and blue decoration under the salt glaze. Blue and grey stonewares originated in Germany, but were exported to both France and England during the eighteenth century. Similar specimens found at Fort Michilimackinac may have been deposited in either French or English contexts (Miller and Stone 1970: 74-76).

Class III Porcelain

Group A Chinese export

Chinese porcelain became an important commodity during the 1700-1775 period and was imported to many European countries. Porcelain sherds (2,784 specimens) have been recovered at Fort Michilimackinac in both French and English contexts, ranging from 1740-1780 (Miller and Stone 1970: 31).

Type 1 Green decorated interior, white exterior

Figure 18Y

1 specimen

This example exhibits a white hard paste body and is decorated under the glaze in a green colored motif. Green colored sherds have not been reported from Fort Michilimackinac.

Type 2 Blue decorated interior, brown exterior

Figure 18Z

1 specimen

This sherd exhibits a white hard paste body with blue floral interior decoration and a brown glazed exterior.

CRUCIFIXES

Crucifixes were used at the fort and mission for several purposes including trade and as rewards to those Indians who became converted to (or at least interested in) the Christian faith. A total of twenty-five crucifixes are present in the Fort St. Joseph collections, sixteen of these from Niles and the remainder from the Northern Indiana Historical Museum in South Bend. Some of these crucifixes may have been the personal property of the European inhabitants at the site. The smaller specimens may have been used on rosaries, while the larger ones could have been worn around the neck. The following classification is based upon diagnostic features such as method of manufacture, material composition, and style of decoration.

Series A One piece construction

Type 1 Brass

Specimen #1

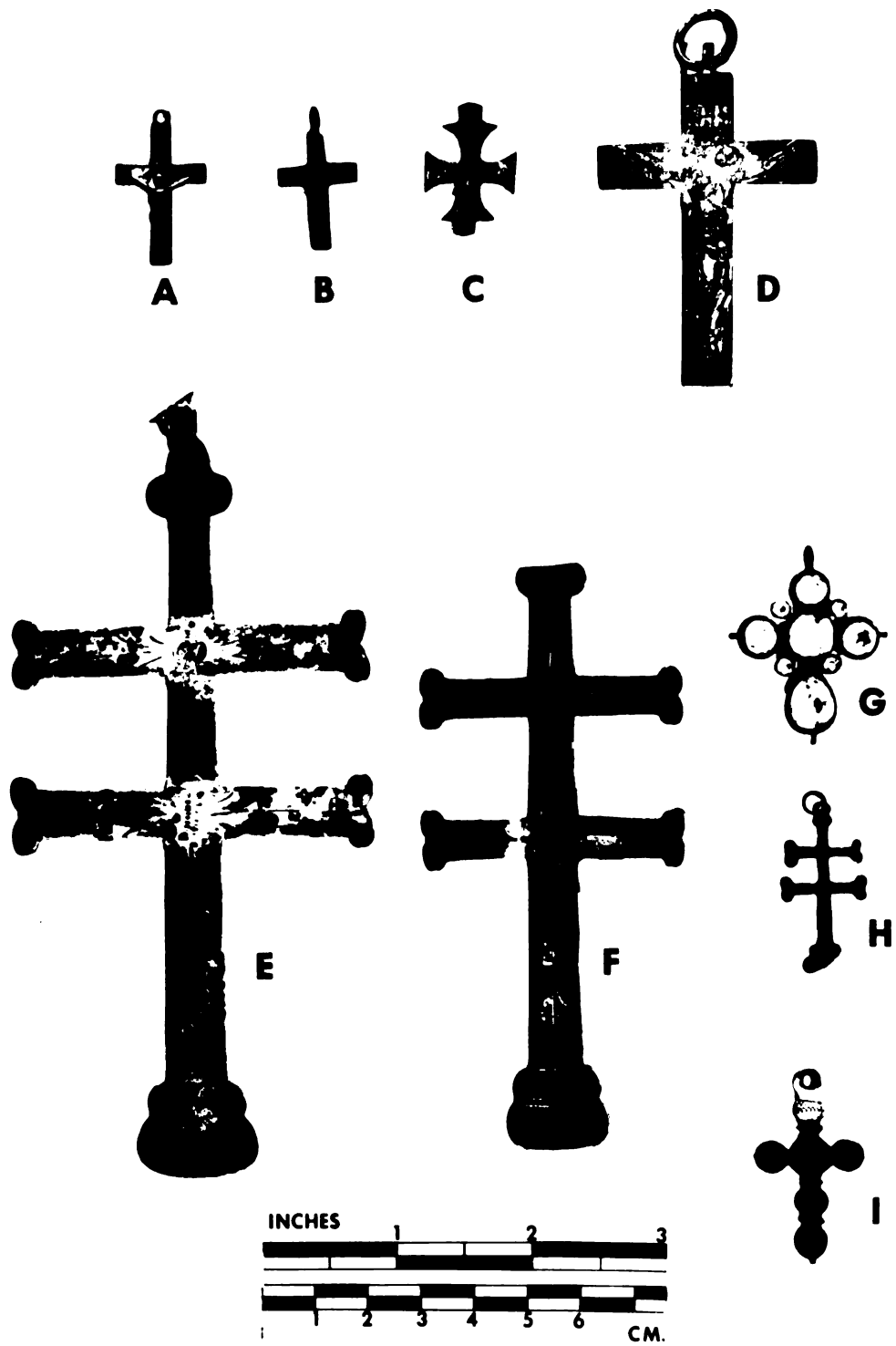
Figure 19B

1 specimen

This specimen is made from cast brass and depicts the front and back view of the corpus on the obverse and reverse sides respectively. On the left and right bars of the cross, on the obverse

Figure 19 Crucifixes

Figure Designation	Taxonomic Designation	
A	SB, T1,	Sp #1
B	SA, T1,	Sp #1
C		Sp #2
D	SB, T2,	Sp #1
E	SA, T2, Vb,	Sp #1
F		Sp #2
G	SB, T3,	Sp #4
H	SA, T2, Vb,	Sp #3
I	SA, T2, Va,	Sp #1



side are the words IESV MARI (Jesus, Mary). Several similar specimens have been found at Michilimackinac (Stone 1974: 117-119). Length 2.7 cm. Width 1.5 cm.

Specimen #2

Figure 19C

1 specimen

This crucifix is shaped similar to the Benedictine cross, and depicts a corpus on the obverse, while the reverse remains plain. Above the head of the figure is a small rectangular plaque which may have at one time been marked, but which is now indistinguishable.

Length 2.5 cm. Width 1.7 cm.

Specimen #3

Figure 20N

1 specimen

This crucifix consists of numerous round rosettes placed in a cross arrangement, and has been cast as a single unit. Sharing a central rosette, the length of the cross is composed of six discs, while the cross bar contains only five. A similar specimen was recovered from Fort Michilimackinac but was smaller in size (Stone 1974: 118).

Length 2.7 cm. Width 2.3 cm.

Type 2 Trade silver (German silver)

Variety a Single bar

Specimens #1-7

Figure 19I, Figure 20E through I and M

These crosses are all quite similar in shape, and were cut from sheet silver. Some have been decorated on one or both sides while others remain plain. One specimen (Figure 20H) bears a small touchwork in the shape of a scallop shell which has been identified as being of French origin (Mainfort 1977). See also trade silver. Numerous identically shaped specimens have been recovered from excavations at the Fletcher Site, a mid-eighteenth century Indian cemetery in northern Michigan (Mainfort n.d.). In addition one similarly shaped specimen, although of brass,

was recovered from Michilimackinac (Stone 1974: 117).

Length range 2.0-2.9 cm. Width range 1.3-2.3 cm.

Specimens #8,9

Not illustrated

2 specimens

These specimens have been crudely cut from sheet silver, and consist of crosses with rounded ends. One of the two crosses has four perforations, one at each end lobe, and was probably used as an earring or was sewn onto clothing.

Length range 1.7-2.4 cm. Width range 1.3-1.9 cm.

Variety b Double bar

Specimen #1

Figure 19E

1 specimen

This specimen is a large trade silver cross made by Charles Arnoldi, a Montreal silversmith who worked from 1784 to 1810 (Quimby 1966: 198). Arnoldi's script touchmark is in the center of the upper bar while the body of the cross is engraved on both sides with radiating lines and decorative motif. This style of cross was quite common and was the predominant shape of double barred specimens of the period, and were used purely as items of trade rather than as religious symbols. This specimen was joined to the smaller cross (Figure 19F) by means of a heavy silver ring. Length 14.2 cm. Width 6.2 cm.

Specimen #2

Figure 19F

1 specimen

This cross is similar in style and design to the previous specimens but bears the mark of Robert Cruickshank, a Montreal silversmith working between 1779 and 1809 (Quimby 1966: 198). Both sides of the cross are decorated with engraved lines similar to the Arnoldi piece, however it lacks the finer detail work

at the ends of the bars and at the base that was found on specimen #1.
Length 11.5 cm. Width 4.8 cm.

Specimen #3

Figure 19H

1 specimen

This specimen is similar in shape to the two larger crosses, however it lacks decoration and maker's mark.

Length 3.2 cm. Width 1.6 cm.

Specimen #4

Figure 20J

1 specimen

This specimen has been cut from a thin sheet of silver and is less regular in shape than the previously mentioned highly stylized crosses. It is quite possible that this example was produced from loose scrap, and that the rounded indentation between the two bars may be a negative of the piece produced from the same sheet. The smooth edges and carefully drilled ring hole attest to its European origin.

Length 2.3 cm. Width 1.1 cm.

Type 3 Lead

Specimen #1

Figure 20K

1 specimen

This cross has been crudely cast of lead and is undecorated. The one unusual feature of this specimen is that the hole and ring are set into the bottom rather than the top of the central post. Why the hole was placed in this position is unknown, but there is the possibility that an original segment including the hole had broken off, thus necessitating the redrilling of another segment. If this cross had been used as a non-secular ornament, the change in orientation may not have been important.

Length 3.4 cm. Width 3.5 cm.

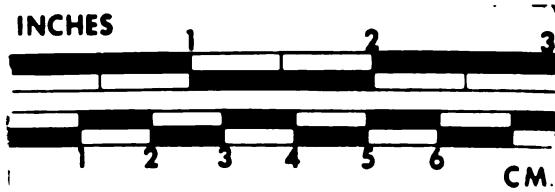
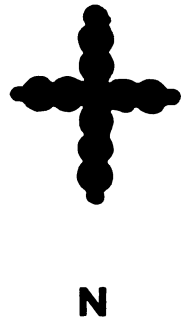
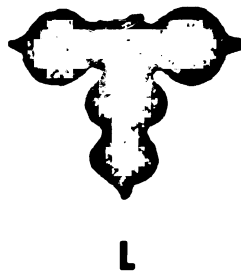
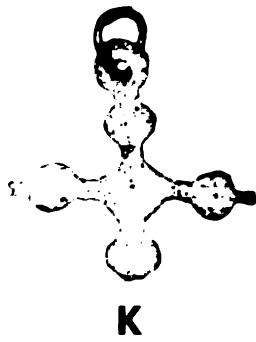
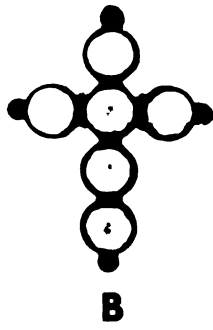
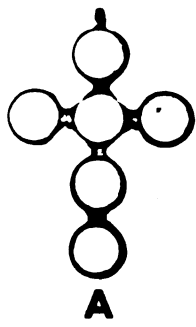
Specimen #2

Figure 20L

1 specimen

Figure 20 Crucifixes

Figure Designation	Taxonomic Designation
A	SB, T3, Sp #1
B	Sp #2
C	Sp #3
D	SB, T4, Sp #1
E	SA, T2, Va, Sp #2
F	Sp #3
G	Sp #4
H	Sp #5
I	Sp #6
J	SA, T2, Vb, Sp #4
K	SA, T3, Sp #1
L	Sp #2
M	SA, T2, Va, Sp #7
N	SA, T1, Sp #3



Although fragmentary, this specimen probably was originally in the form of a cross.
Width 3.3 cm.

Series B Multiple-piece construction

Type 1 Brass/brass composition

Specimen #1

Figure 19A

This specimen consists of two pieces--a plain brass cross, and a brass corpus--which have been joined together through three pins, one at each hand and one at the feet of the figure. The placement of these pins adds visual symbolism to the crucifixion scene, and may or may not have been intentionally placed by the maker.
Length 3.0 cm. Width 1.7 cm.

Type 2 Copper/silver-plated brass composition

Specimen #1

Figure 19D

This crucifix consists of a silver plated plain brass cross with applied copper corpus and IHS lettering. The corpus and letters appear to have been soldered onto the cross and at one time may also have been plated with silver. Several multi-composition crucifixes have been found at Fort Michilimackinac, however none are identical to this specimen.
Length 6.4 cm. Width 4.1 cm.

Type 3 Brass/glass composition

Specimen #1

Figure 20A

This specimen consists of a cast brass cross set with six clear glass jewels. The brass may have been plated at one time by a silvery metal which still adheres in several areas.
Length 3.8 cm. Width 2.6 cm.

Specimen #2

Figure 20B

Same as Specimen #1 except with small protrusions at each end. This example does not appear to have been plated. As with the previous cross, all the

jewels are faceted thereby enhancing their reflective quality.

Length 3.8 cm. Width 2.7 cm.

Specimen #3

Figure 20C

This example consists of an ornately cast brass cross set with green glass jewels. The central stone is cut squarely and faceted and is surrounded by round faceted stones. The cast element consists of a beaded edge with floral casting surrounding the central stone.

Specimen #4

Figure 19G

This cross consists of a cast brass cross set with rhine clear glass faceted stones. A round central stone is surrounded on the top and sides by slightly smaller round jewels, while four small insets are placed at intervals between the larger ones. The bottom large stone of the cross is teardrop shaped and faceted, and is suspended loosely by a ring so that it swings when moved. Length 3.8 cm. Width 3.0 cm.

Type 4 Pewter/glass composition

Specimen #1

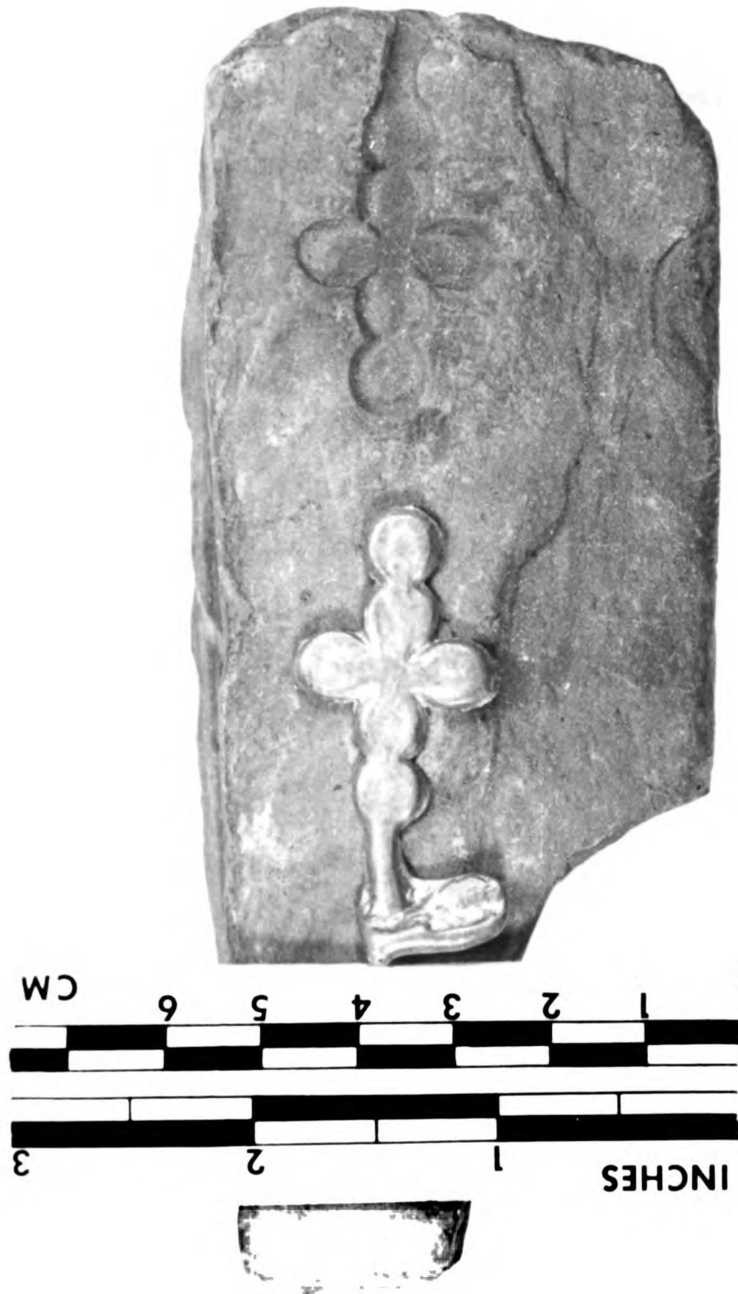
Figure 20D

This pewter cross fragment has been set with round blue stones which appear to have been at one time faceted in a round cut. The cast element is a beaded rim running around the stones as a border motif.

CRUCIFIX MOLD

One crucifix mold (Figure 21) has been found at the site of Fort St. Joseph. This specimen consists of a piece of limestone 13.5 cm. long and 5.8 cm. wide into which a cross motif has been cut from the lower portion of the stone. The cross pictured in Figure 21 is modern, and was produced by pouring lead into the open faced mold. None of the crucifixes found at the site had been produced in this mold; however, the presence of this specimen indicates that such a manufacturing process did occur at the fort, probably for production of trade goods. Cast lead crosses and cross molds have also been reported from the Guebert Site in Illinois (Good 1972: 81).

Figure 21 Crucifix Mold

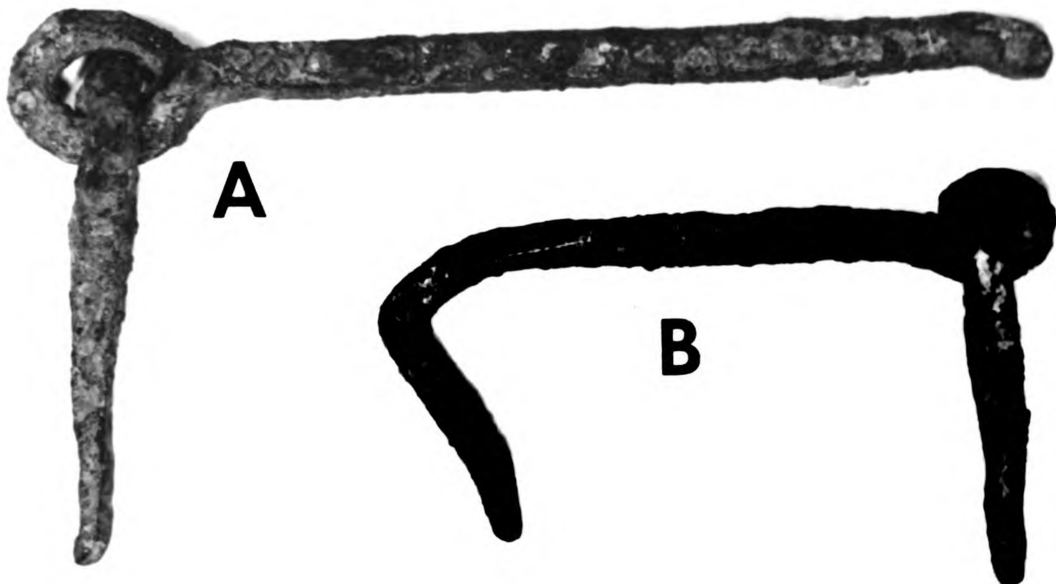
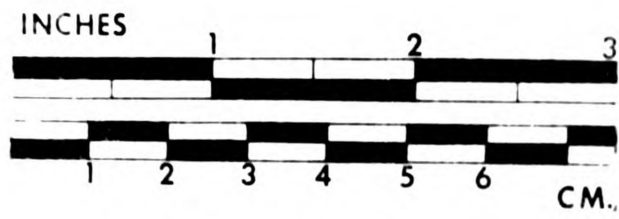


DOOR, GATE, OR SHUTTER HOOKS

Hooks of various sizes and shapes were used to secure doors, gates, or shutters and were designed to engage a permanent receiving ring. The hooks were suspended by a looped eye which was driven into the wooden frame of the door, shutter, etc. Three of these eyes (Figure 22C, D, E) are present in the collections, as well as two complete hook and eye sets (Figure 22A, B). The hooks range in length from 12.5 to 8.4 cm., and they as well as the eyes are of iron. Similar hooks were also recovered from Fort Michilimackinac (Stone 1974: 235).

Figure 22 Door, Gate, or Shutter Hooks

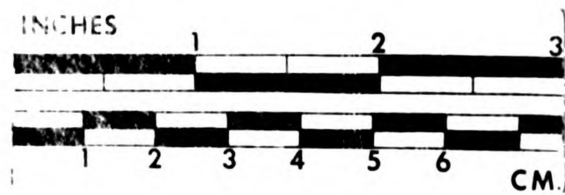
Figure Designation	Description
A	Hook and eye set
B	Hook and eye set
C	Eyes
D	Eyes
E	Eyes



DOOR LATCH CATCHES

A total of five latch bar catches (Figure 23A-E) are present in the Fort St. Joseph collections. These specimens were either straight or U-shaped and were driven into the door frame to act as a catch for latch bars. Other door latch hardware such as thumb lifts, latch bars and bolts, and door handles are not present in the collections although they were probably in use at the site. At Michilimackinac, sixteen catches were recovered, all of which were similar to the specimen from Fort St. Joseph. Stone (1974: 235) noted that Michilimackinac specimens were associated with French structures but were in use throughout occupation at the site.

Figure 23 Door Latch Catches (A-E)



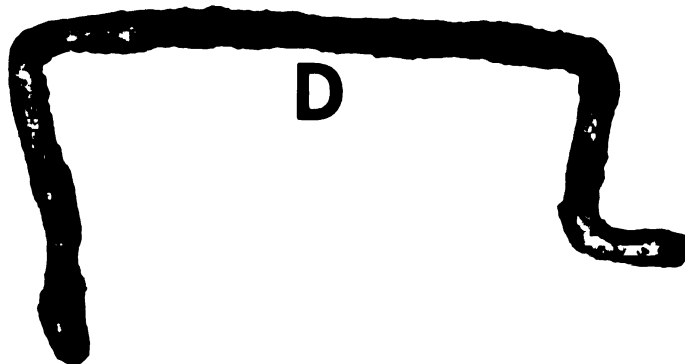
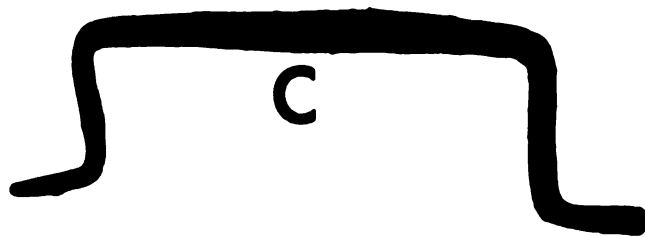
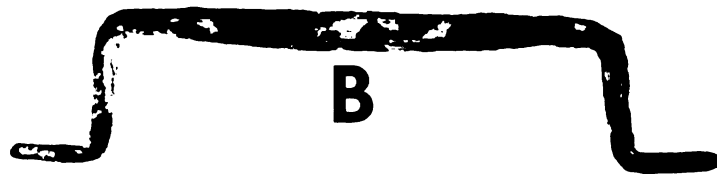
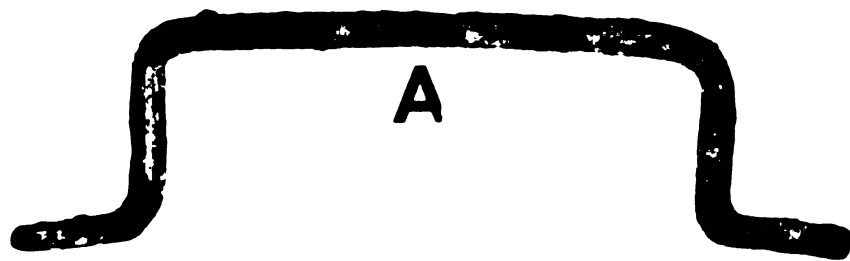
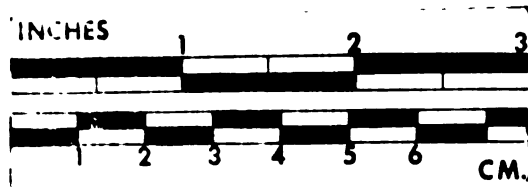
DRAWER HANDLES

Four drawer handles are present in the Fort St. Joseph collections, all of which are rectangular in shape with their ends bent outward. The dimensions of the specimens are as follows:

Figure	Length	Width
A	12.2 cm.	3.3 cm.
B	10.2 cm.	2.3 cm.
C	9.2 cm.	2.6 cm.
D	10.0 cm. (est.)	3.3 cm.

These handles were used either on furniture or as light handles on boxes or trunks. All four examples are hand forged and are composed of iron. The thinned ends on two specimens (Figures 24B and c) may indicate use with cotter pin handle attachments, while the others (Figure 24A and D) may have been used with hollow-headed posts. Several similar specimens of this style are reported from Fort Michilimackinac and are illustrated in Plate 120 A,B,H (Stone 1974: 204). At the Gros Cap Cemetery Site (1670-1708) in Michigan's Upper Peninsula a small chest was

Figure 24 Drawer Handles (A-D)



recovered which contained cremated human remains (Nern and Cleland 1974: 4). This small chest had handles similar to the Fort St. Joseph specimens.

FISHHOOKS

A total of nineteen fishhooks are present in the Fort St. Joseph collections. Two major types of fishhooks are distinguishable--those with flattened shank ends, and those with unflattened shank ends. The flattening of the hook ends creates a widened shank and allows lines to be securely tied. Unbarbed and barbed hooks are also distinguished and are designated as varieties. The combinations unflattened/unbarbed and flattened/barbed are functionally related and may be a result of local versus imported manufacture.

Type 1 Flattened shank end

Variety a Barbed

Figure 25A-H

14 specimens

By use of a length-width scattergram and a dimension-frequency graph, Stone (1974: 244) distinguished eight size categories from the Fort Michilimackinac fishhook sample. These categories do not appear to be applicable to the St. Joseph sample since only six of the fourteen specimens fall into these outlined groups. The St. Joseph specimens range in length from 3.7-7.2 cm. and in width from 1.8-2.8 cm., and do not group into definitive categories. In addition, one fragment of a large barbed hook or gaff is present in the collection (Figure 25J) which is similarly barbed.

Figure 25 Fishhooks

Figure Designation	Taxonomic Designation
A-H, J	T1, Va
I	T2, Va

Type 2 Plain shank endVariety a Unbarbed

Figure 25I, 45B

4 specimens

These examples exhibit straight shanks with unbarbed hooks and appear to me more crude than Type 1 specimens. Unlike the barbed hooks which exhibit cross-sections which are round, Type 2 variety specimens are almost square. These hooks may be of local manufacture. Length range 6.1-7.6 cm., width range 1.8-2.6 cm. No Type 2 hooks have been reported from Fort Michilimackinac.

Discussion.--A total of 219 fishhooks were recovered from Fort Michilimackinac and although these hooks were used throughout French and British periods of occupation they were more frequently found in features associated with the 1735-1760 period (Stone 1974: 245).

FORKS

Only four forks are present in the Fort St. Joseph collections. Three of these specimens are double-tined while the other is modern in appearance with four tines. Similar specimens have been found at other sites in Michigan and the midwest, but are not regarded as good chronological indicators, nor are they indicative of national affiliation. Stone (1974: 177) states that distributional evidence from Michilimackinac points toward greater use of forks during the British period of control. He also goes on to state that "Two-tine forks appear to have little utility for dating purposes since they have been found on other sites which date from the seventeenth, eighteenth, and early nineteenth centuries."

Class I Two-tine

Figure 26B,E

3 specimens

These forks are all constructed from two components--an iron tine element, and bone handle-plates. The rear portion of these specimens has been flattened and are held to the handle plates by means of two iron or steel pins. One handle section is plain and undecorated, while the others exhibit grooved or hatched designs. Approximate length 16 cm.

Figure 26 Tableware

Figure Designation	Description
A	Knife
B	Fork, Class I
C	Spoon
D	Spoon
E	Fork, Class I



Class II Four-tine

Not illustrated

1 specimen

This specimen is constructed from a single piece of iron and consists of a long handle ending with four tines.

Stone (1974: 177) pictures a very similar specimen (Figure 96A) which is quite modern in appearance, having a wide rounded handle end. Estimated length 17 cm.

GLASS

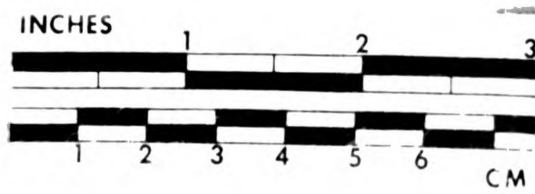
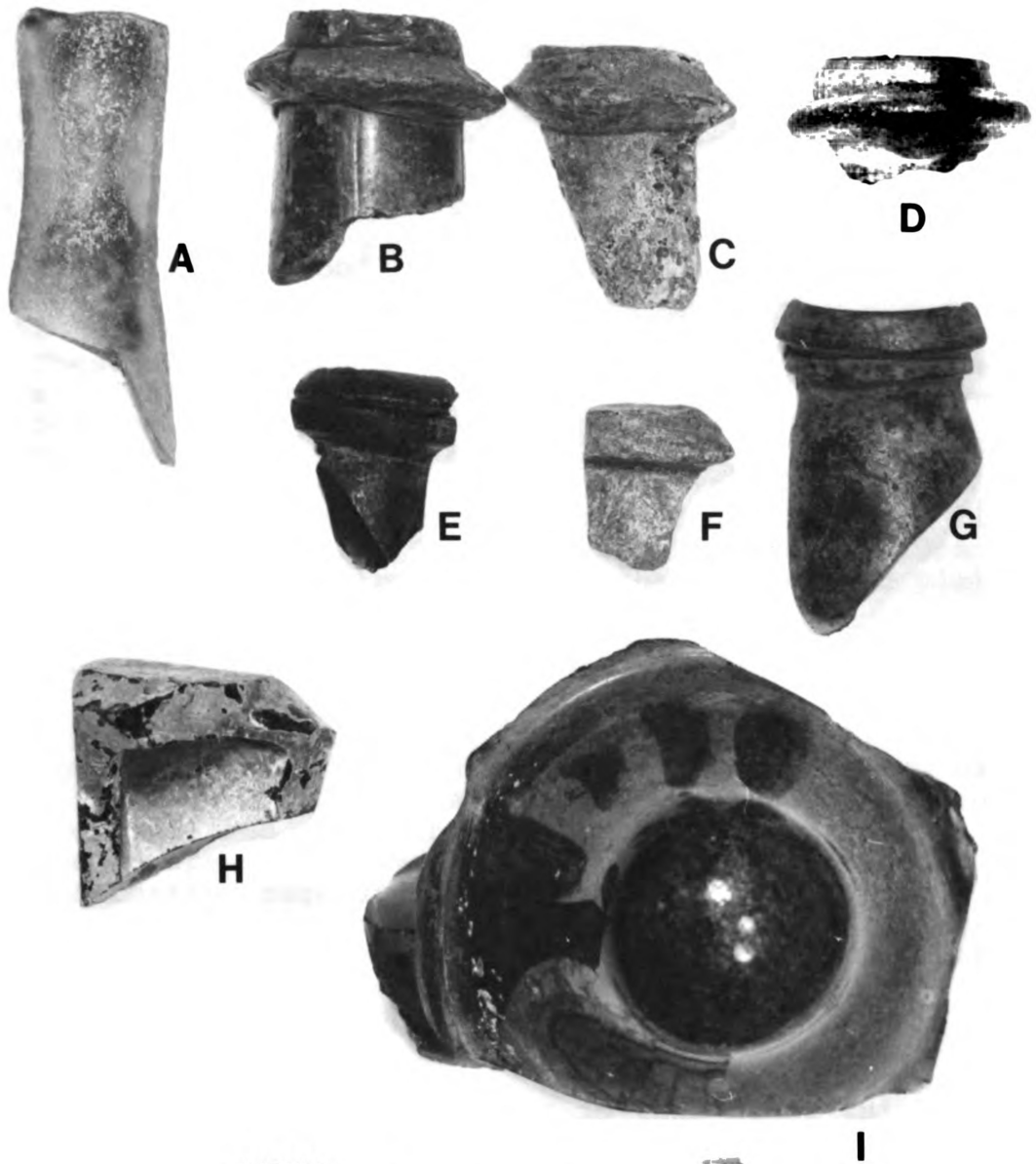
The Fort St. Joseph collections contain approximately 500 sherds of bottle glass, and one small complete bottle. No other forms of glass such as that used in windows or as tableware are present in the collection. Bottles of both French and British origin are represented in the glass sample, with the latter comprising the majority of the total. A very large portion of the glass from Fort St. Joseph consists of body sherds which yield very little information as to national origin. Those portions of the bottle such as the neck, shoulder, lower base, and kick-up, which are the most important segments in terms of identification are found in low frequency representing only about 10 percent of the total number of sherds. The following classification is based upon the attribute of color, cross sectional shape, and the variations in rim application, shape of sides, and shape of kick-up.

Class I Blue-green

These specimens exhibit a light blue color which is usually attributed specifically to bottles of French origin (Brown 1971: 105). The single complete bottle recovered from Fort St. Joseph is a very small bottle which once contained perfume or medicine. This bottle

Figure 27 Glass

Figure Designation	Taxonomic Designation
A	Class I neck
B-G	Class II neck
H	CII, T1
I	CII base



was formed in a two piece mold and has hand finished shoulders and neck. The height of this bottle is 3.4 cm. with a shoulder width of 2.13 cm. and a capacity of approximately one ounce of liquid. In addition to this specimen is a neck fragment which exhibits no rim and which has straight sides. Necks similar to this are found on some blue-green case bottles as well as bottles known to have contained oil. In addition, a total of twenty-one fragments of this color are present from the site, six of which are unidentifiable- due to the fact that they have been heavily burned and melted. The remaining identifiable sherds can be assigned into one of two types based upon the cross-sectional form of the bottle.

Type 1 Square bodied

8 specimens

These sherds came from square bottles with either straight or expanding sides. The square form allowed bottles to be placed and shipped in packing cases thereby avoiding loss due to breakage. This style of bottle was the predominant type found at Fort Michilimackinac and was probably used to contain liquor (Brown 1971: 108). These bottles had square sides and base and a long straight neck, that was either plain or with a string applied rim.

Type 2 Round bodied

6 specimens

Round sectioned bottles of blue-green color were used to contain a wide variety of liquids including liquor, medicine, and oil. The six specimens from Fort St. Joseph are too fragmentary to provide any useful information regarding bottle size or function. Several complete bottles, as well as numerous fragments were found at Fort Michilimackinac during the 1959-1969 excavations (Brown 1971: 189).

Class II Olive green

A wide variation in color occurs in this class which ranges from a light colored yellow-green to an almost black appearing dark olive color. Functional or national interpretation based on color are not possible, and those bottle fragments grouped into the general category of "olive green" are of both French and British origin.

Type 1 Square bodied

11 specimens

These case bottles vary in color from a yellow-green to an olive green and probably contained some sort of liquor. All square olive green cast bottles, with the exception of very small bottles, have string applied rims (Brown 1971: 100). Of the eleven specimens from Fort St. Joseph, all are body sherds.

Type 2 Round bodied

413 specimens

Of this sherd sample, 390 specimens are body sherds lacking in diagnostic attributes other than thickness and color. Those twenty-three sherds which are valuable in dating and identification process are portions of the rim (12), lower sides (4), and kick-up (7). French rims are round in cross section and are applied approximately .3 and .4 mm. below the lip of the bottle. On the other hand, British bottle rims are V-shaped in cross section and are often collared with the rim and lip section joined together (Brown 1971: 105). Based upon these rim qualities both French and British bottles can be identified from the collections. Three rim segments with round cross sections, and six fragments with either V-shaped or collared rims are present, and are tentatively identified as French and British respectively. In addition, one long neck fragment without a rim and two specimens with thick collar are also represented and may also be of French and British origin. Those specimens with flared lips and collars are from British occupations in the last quarter of the eighteenth century, and are found at Fort Michilimackinac in association with later British features (Brown 1971: 154).

Another diagnostically important section of a bottle is its lower portion including the sides, base, and kick-up. While French bottles exhibit a "flower pot" shape with a base smaller than the sides, British specimens are straight sided and often exhibit a sag near the base. In addition, the French kick-up is generally conical in shape while the British is rounded or dome shaped. One complete kick-up and six basal fragments are present in the collection, all of which are dome shaped. All but one of these fragments has a pontil scar showing the remains of a glass gathered pontil, while the single anomalous scar is that of a sand pontil--a characteristic of British production.

Four base fragments and one side sherd are also noteworthy in that they demonstrate of both French and English CII, Type 2 bottles. Three basal

sherds show the characteristic sag common on British bottles, while the side fragment shows the expanding shoulders of the French flowerpot shape.

In summary, the glass sample from Fort St. Joseph is important in that it demonstrates both French and British occupation at the site. The proportion of French to British bottle fragments which are identifiable is about two to three, however the large number of unidentifiable olive green body sherds accounts for about 90 percent of the total sample. Therefore, the given proportion should be viewed cautiously due to the extremely small sample size.

In comparison of the Fort St. Joseph sample to that of Fort Michilimackinac, certain differences are apparent; the most important of which stems from the functional considerations of the bottle types present at the two sites. While the Fort Michilimackinac specimens exhibit a wide range of types including liquor, oil, snuff and medicine bottles, the Fort St. Joseph fragments are predominantly from liquor bottles. The exception is the single complete specimen which could have contained medicine or perfume. The fact that a wide variety of glass such as tableware and window glass was recovered from Michilimackinac and not from St. Joseph also points towards basic differences between the two sites. Unlike Michilimackinac where goods were more easily obtainable and where the inhabitants enjoyed a relatively high standard of living,

Fort St. Joseph was a more isolated post where personal goods were scarce and had to be transported over long distances. Fine tableware would not be expected to be found in great quantities at St. Joseph, and indeed they are not. It is, however, unusual that window glass was not found at St. Joseph, and this may be due to bias during the collections process, where "common glass" could have been intentionally overlooked. At other French sites of similar isolation such as Ouiatenon on the Wabash River, window glass is abundant (Tordoff 1976).

GUNFLINTS

In 1650 a method of manufacture for gunflints was developed in the Netherlands which resulted in wedge-shaped flints in great quantities. By this method, spalls were struck-off a prepared core and then retouched to the desired size and shape. Dutch flint knappers utilized native grey flint deposits in production of these "gun-spalls" and until 1770 maintained a booming industry. This technique of gunflint manufacture was soon afterwards replaced by a productively superior method originated in France (Witthoft 1966).

French manufacture of gunflints began around 1740 with a re-invention of a "blade" technique of manufacture. This consisted of punching long slivers, or blades, of flint from a prepared prismatic core. These blades were then broken to a desired length and retouched. By this method, gunflints could be rapidly produced and were of a finer quality than ever before. Blade manufacture revolutionized the flint-knapping industry, and by the time of the American Revolution this form of manufacture had completely usurped the old Dutch industry.

This classification will use the following descriptive terms to designate the various areas of a gunflint: edge, the side of the flint which strikes the steel; shoulder, the area where the back edge of the flint meets the face; face, the top of the gunflint; back, the side of the gunflint which is clamped in the cock of the gun; and bed, the bottom of the gunflint. The gunflint sample from Fort St. Joseph contains 433 total specimens which have been classified and ordered by their method of manufacture and physical attributes.

Class I Spall gunflints

Series A Unifacially flaked (smooth bed)

These specimens exhibit smooth beds which are normally concoidally rounded due to their removal from a core. Only the face of these specimens exhibit flake scars. Scars on the bed due to obvious breakage or retouching on the edge do not disqualify specimens from placement into the Series A category.

Group A Angular shoulder

Group 'A' specimens exhibit sharp angles at the shoulder due to the removal of one or perhaps two large flakes on the shoulder section. These specimens has been termed by Stone (1974: 255) to be blade-spalls. The usage of this term is internally contradictory and will not be used in this classification. Rather, these specimens were removed from a core as spalls, and have had a large flake removed from the face at the shoulder section. This flake detachment often removes the bulb of percussion and creates a spall gunflint which is roughly triangular in cross section.

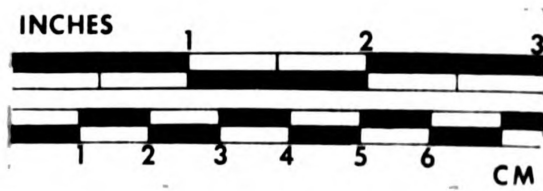
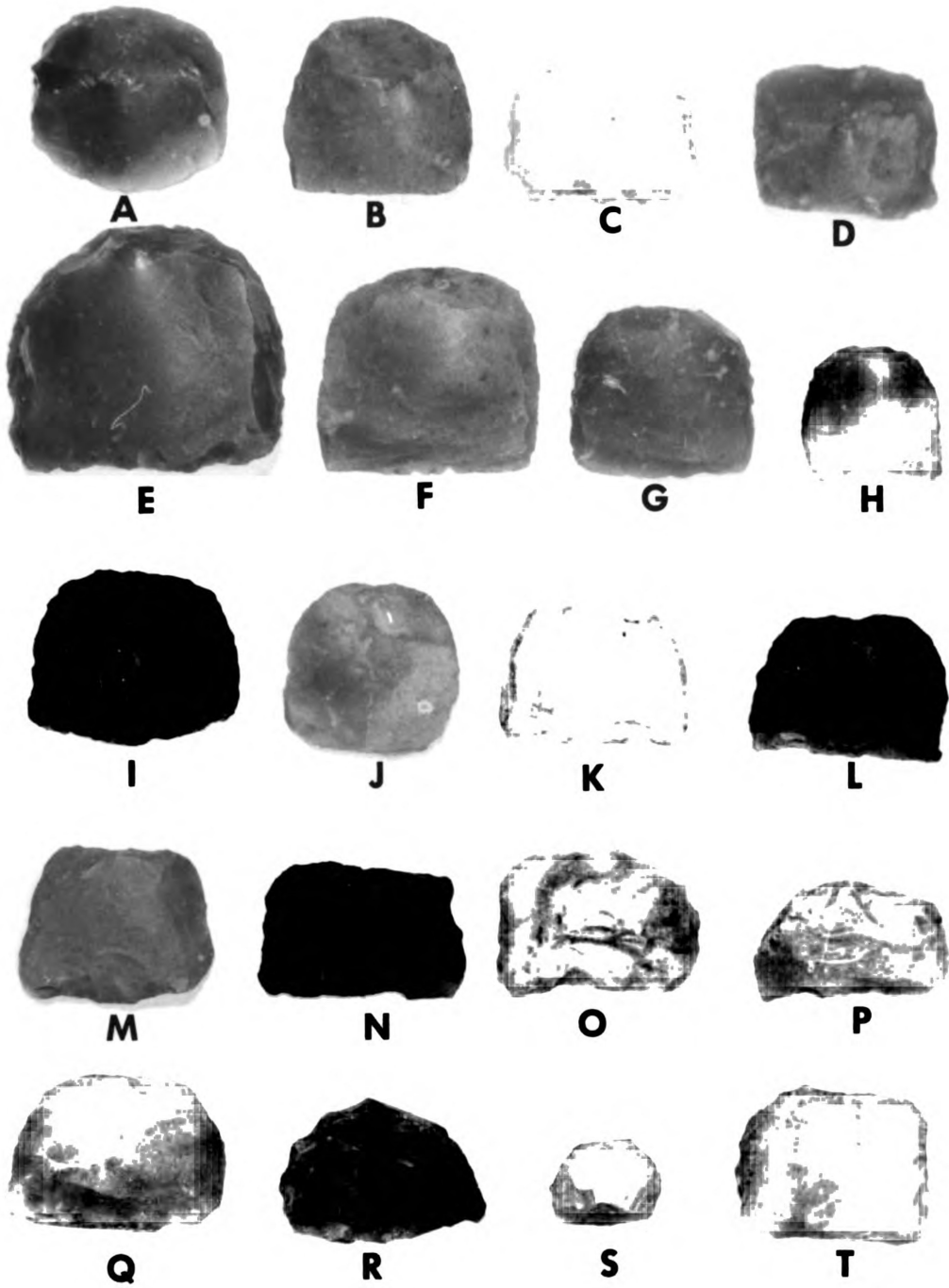
Type 1 Rounded back edge

Figure 28A,B,C

These specimens exhibit a rounded back edge and sides which impart an inverted U-shape to the flint.

Figure 28 Gunflints (Spall)

Figure Designation	Taxonomic Designation
A	CI, SA, GA, T1
B	T1
C	T1
D	T2
E	GB, T1
F	T1
G	T1
H	T1
I	T1
J	T1
K	T1
L	T1
M	T2
N	T2
O	SB, GA, T1
P	T1
Q	GB, T1
R	T1
S	T1
T	T2



Variety a Grey to brown

15 specimens

Length range 1.75-2.84 cm.

Width range 2.19-3.34 cm.

Thickness range .59-1.00 cm.

Variety b Dark grey to black

4 specimens

Length range 1.71-2.78 cm.

Width range 2.25-3.00 cm.

Thickness range .45-1.03 cm.

Variety c Off white to light grey

1 specimen

Length 2.10 cm.

Width 2.68 cm.

Thickness .50 cm.

Type 2 Flat back edge

Figure 28D

These specimens exhibit flat back edges and sharp angles at corners between sides and back. The overall shape is rectangular.

Variety a Grey

3 specimens

Length range 2.21-2.58 cm.

Width range 2.73-3.49 cm.

Thickness range .90-1.19 cm.

Group B Rounded shoulders

Extensive chipping of the shoulder area and the removal of numerous flakes produces an angle between the back and the face which is somewhat rounded and less tapered than Series A specimens.

Type 1 Rounded back edge

Figure 28E through L

Variety a Grey to brown

161 specimens

Length range 1.88-3.75 cm.

Width range 2.10-4.05 cm.

Thickness range .44-1.00 cm.

Variety b Dark grey to black

41 specimens

Length range 1.87-2.81 cm.

Width range 2.21-3.45 cm.

Thickness range .56-1.09 cm.

Variety c Light tan

8 specimens

Length range 2.30-2.99 cm.

Width range 2.60-3.35 cm.

Thickness range .33-.95 cm.

Variety d White

1 specimen

Length 2.23 cm.

Width 2.82 cm.

Thickness .84 cm.

Variety e Grey to red

4 specimens

Length range 1.90-2.49 cm.

Width range 2.12-2.97 cm.

Thickness range .50-.86 cm.

Type 2 Flat back edge

Figure 28M,N

25 specimens

Variety a Grey to brown

21 specimens

Length range 2.00-2.93 cm.

Width range 2.58-3.13 cm.

Thickness range .59-.99 cm.

Variety b Dark grey to black

3 specimens

Length range 2.00-2.09 cm.

Width range 2.00-3.08 cm.

Thickness range .59-1.00 cm.

Variety c Grey to red

1 specimen

Length 2.01 cm.

Width 2.42 cm.
Thickness .61 cm.

Series B Bifacially flaked

These specimens have beds which are extensively flaked and exhibit numerous flake scars. On the average, Series B specimens are less regular in shape and thickness and less refined in overall appearance than Series A gunflints.

Group A Angular shoulder

Type 1 Rounded back edge

Figure 280,P

These specimens exhibit back edges which are rounded at the corners giving the flint an overall U to oval shape.

Variety a Grey to brown

16 specimens
Length range 2.00-2.79 cm.
Width range 2.60-3.40 cm.
Thickness range .65-1.02 cm.

Type 2 Flat back edge

Not illustrated

These specimens are rectangular in shape due to a flat back edge.

Variety a Grey

6 specimens
Length range 2.20-2.90 cm.
Width range 3.00-3.35 cm.
Thickness range .75-1.25 cm.

Group B Rounded shoulder

Type 1 Rounded back edge

Figure 28Q,R,S

Variety a Grey to brown

80 specimens
Length range 1.39-3.28 cm.
Width range 1.69-3.63 cm.
Thickness range .52-1.09 cm.

Variety b Dark grey to black

10 specimens
 Length range 1.79-2.50 cm.
 Width range 2.21-3.45 cm.
 Thickness range .70-.94 cm.

Variety c Red

1 specimen
 Length 2.03 cm.
 Width 2.62 cm.
 Thickness .69 cm.

Type 1 Discussion:

Two specimens are unusual enough to require additional comment. One Type 1 specimen has been chipped from olive green bottle glass. The chipping is quite crude, however this piece appears to be functional. Length 2.50 cm., width 2.50 cm., thickness 1.00 cm. The second specimen is a well formed gunflint of brown to honey-colored flint. This flint is normal in appearance except for a finely chipped stem protruding from the left side. This European flint was evidently in the process of being reworked into another form but was not completed. Length 2.41 cm., width 3.40 cm., thickness .83 cm.

Type 2 Flat back edge

Figure 28T

Variety a Grey to brown

1 specimen
 Length 2.39 cm.
 Width 2.94 cm.
 Thickness .81 cm.

Series B Discussion:

These specimens appear to be less carefully produced; this giving an irregular overall appearance. In 90 percent of the cases the gunflints are produced from good quality flint which is most probably of European origin. However, the reason for the pooriness of flaking is not known. There may be the possibility that these flints were regarded as low grade flints while Series A specimens are of finer grades. The flints may also have been reworked by aboriginal

populations to such an extent that the appearance has been greatly altered.

Class II Blade gunflints

Blade gunflints, because they were manufactured by a different technological method than spall gunflints, cannot be grouped under the same classificatory format. Rather, as replacement for the Angular/Rounded Group distinction a grouping based upon the type of face flaking has been made.

Series A Unifacially flaked

Group A Single flake scar

These specimens exhibit a single large flake scar over the entire face of the flints.

Type 1 Rounded back edge

Figure 29A,B

Variety a Honey-colored

3 specimens

Length range 1.80-1.99 cm.

Width range 2.60-2.68 cm.

Thickness range .56-.60 cm.

Group B Two flake scars--dual striking edge

These specimens exhibit two flake scars on the face which extend from the midpoint and bevel towards the edges. These gunflints have two striking edges and are therefore rectangular in shape. The classification designation "type" has been eliminated in regards to these specimens since they are double edged and have no true "back edge."

Variety a Honey-colored

Figure 29C

7 specimens

Length range 1.80-3.10 cm.

Width range 2.13-.299 cm.

Thickness range .48-.86 cm.

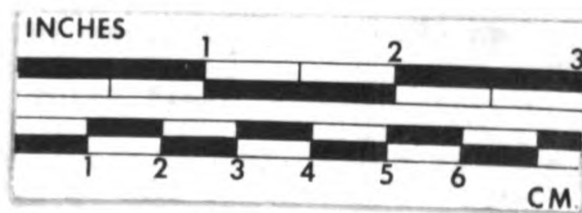
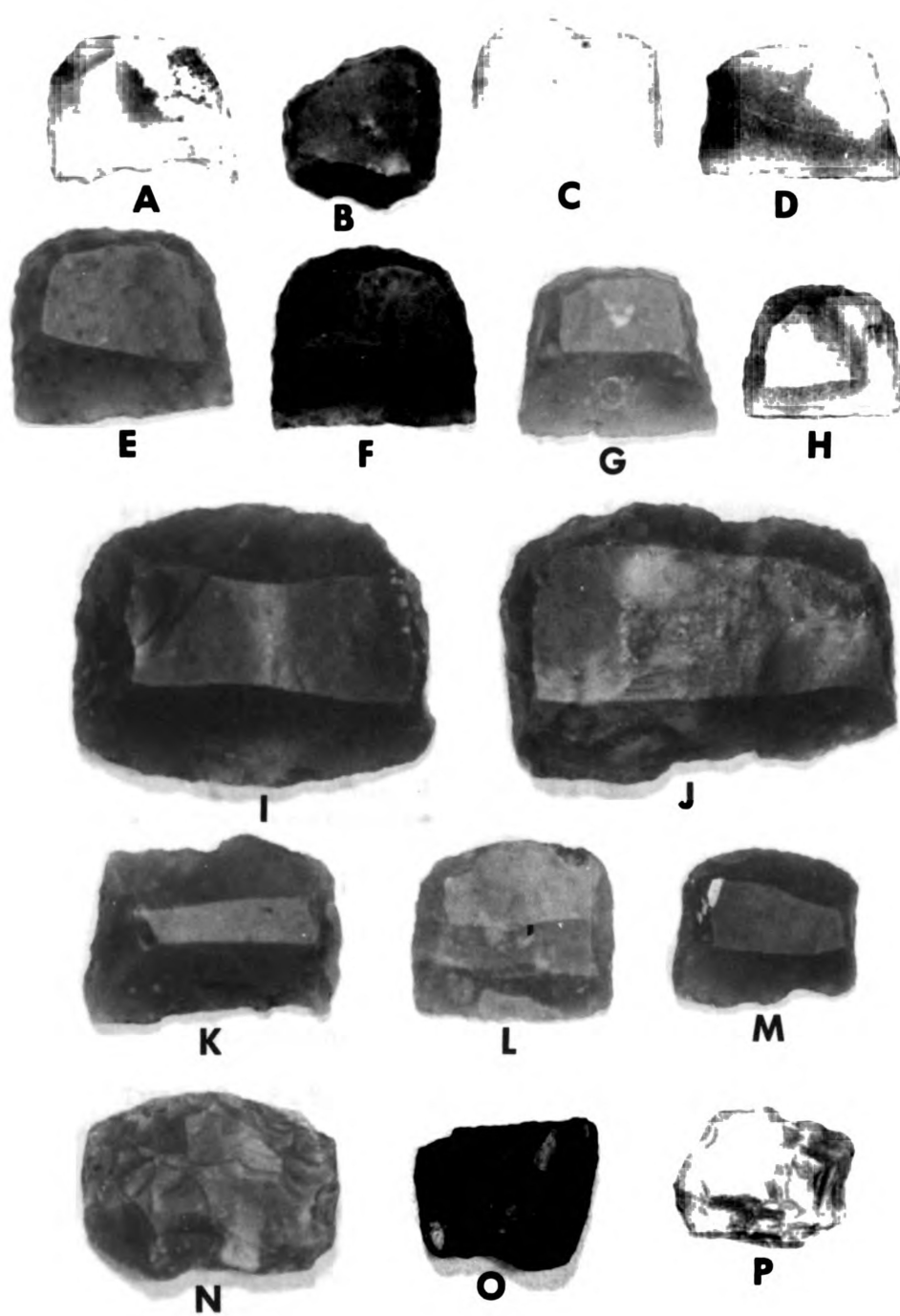
Variety b Brown to honey-colored

Figure 29D

1 specimen

Figure 29 Gunflints (Blade)

Figure Designation	Taxonomic Designation
A	CII, SA, GA, T1
B	T1
C	GB, Va
D	Vb
E	GC, T1
F	T1
G	T1
H	T1
I	GD, T1
J	T1
K	T1
L	T1
M	T1
N	SB, GA, T1
O	SB
P	SB



Length 1.99 cm.
 Width 2.89 cm.
 Thickness .62 cm.

Group C Two flake scars and single striking edge

These flints exhibit two flake scars on the face. One flake is parallel to the bed and covers the distance from the back edge to approximately the middle of the gunflint. The second flake has been removed to form a bevel to the striking edge. Therefore, the first scar would be a result of the creation of the blade, and the second used to form a beveled striking edge.

Type 1 Rounded back edge

Figure 29E through H
 These specimens have a back edge which is somewhat rounded, although not as completely as Class I specimens.

Variety a Honey-colored

34 specimens
 Length range 1.85-2.95 cm.
 Width range 2.09-3.43 cm.
 Thickness range .41-.98 cm.

Variety b Grey to honey-colored (mottled)

1 specimen
 Length 2.50 cm.
 Width 3.00 cm.
 Thickness .68 cm.

Type 2 Flat back edge

Not illustrated

Variety a Honey-colored

3 specimens
 Length range 2.23-2.39 cm.
 Width range 2.13-2.73 cm.
 Thickness range .50-.75 cm.

Group D Three flake scars

These gunflints exhibit three flake scars; one in the middle of the flint which is parallel to the bed, and two which extends from this central flake

to each edge. In many of the specimens it is impossible to ascertain whether or not the gunflints had one or two striking edges, this due to the heavy use which many specimens obviously received. However, it is quite evident in the majority of the examples that they were intentionally worked to form a back edge.

Type 1 Rounded back edge

Figure 29I through M

These specimens have a single striking edge with the back edge founded and formed through the removal of numerous vertical flakes.

Variety a Honey-colored

20 specimens

Length range 1.72-2.72 cm.

Width range 2.29-3.14 cm.

Thickness range .58-.89 cm.

Variety b Grey to honey-colored

1 specimen

Length 2.50 cm.

Width 2.88 cm.

Thickness .62 cm.

Variety c Brown

1 specimen

Length 2.06 cm.

Width 2.57 cm.

Thickness .63 cm.

Type 2 Flat back edge

Not illustrated

These specimens have both edges which are flat giving the gunflint an overall rectangular shape. There is a possibility that these flints have two striking edges.

Variety a Honey-colored

5 specimens

Length range 1.69-2.56 cm.

Width range 2.40-3.10 cm.

Thickness range .50-1.04 cm.

Series B BifacialGroup A Two flake scars--single striking edge

Only two Series B specimens are present in the sample which conforms to the pattern of flaking found in Series A, Groups A, B, C, D categories. These specimens are composed of brown or honey colored flint and have a rounded back edge.

Type 1 Rounded back edge

Figure 29N

Variety a Honey

2 specimens

Length range 2.03-2.55 cm.

Width range 2.50-3.55 cm.

Thickness range .83-1.04 cm.

Series B Discussion:

Eight Series B specimens are also present in the Fort St. Joseph gunflint sample. All specimens are quite irregular in shape and have extensively flaked faces and beds. Their flat appearance and the fact that they are composed of honey colored flint leads them to placement in Class II. The condition of these specimens is probably due to extensive use against strike-a-lites (Figure 290, P).

GUNPARTS

The Fort St. Joseph collections in Niles and at South Bend contain large amounts of gunparts and gun hardware. It is beyond the scope of this section to acquaint the reader with the working mechanisms of the flintlock musket as well as the gun furnitures used on such weapons. Therefore, the reader is referred to Hamilton (1968: ii; 1960: 13; 1976: 3, 5) for excellent drawings and descriptions on the flintlock musket. In addition, Darling (1970), Blackmore (1961), and Hanson (1955) illuminate aspects of weaponry of the eighteen and nineteenth centuries that are particularly relevant to the description and identification of various guns.

The categories of parts and hardware are presented in alphabetical order, and will be described in both formally and nonformally structured classifications. Due to the poor preservation of many specimens, and the fact that comparative data, especially regarding French weapons is scant or nonexistent, each artifact cannot always be assigned a specific date or affiliation. However, every effort will be made to provide such information if available.

Buttplates and Buttplate Tangs

Class I Iron

Figure 30A, 31A

Specimen #1

This complete buttplate is composed of heavy iron, and was attached to the butt of the stock by means of two screws--one at lower portion of the buttplate and one at the apex of the plate/tang juncture. An identically shaped buttplate, except in brass, was used on the French Musketoon Model 1733-1734. However, there also is a possibility that this specimen is from a French cavalry musketoon of the mid-eighteenth century (Hamilton 1968: 13-14).

Length of tang to joint 10.8 cm., length of joint to rounded plate end 13.3 cm.

Class II Brass

Figure 30B, 31B, 32E

Specimen #1

This nearly complete buttplate is composed of heavy cast brass, and was attached to the butt of the stock by two screws and two tabs. The upper portion of the plate does not end in a tang, but is a solid cap with five beveled sides. The face of the buttplate is concave--a characteristic of early rifles rather than muskets. In addition, the overall size of the buttplate is quite small and is probably part of a small hunting piece or rifle. The repair shown is modern.

Specimen #2

Figure 32A

This specimen is a portion of a buttplate tang minus the finial. Although fragmentary, the plate displays a portion of a cast chevron design which is found on trade guns of Hamilton Type C French 1685-1730

Specimen #3

Figure 32B

This buttplate fragment has been decorated with four parallel grooves running the length of the tang which are placed in sets of two. A single nail hole is present at the end of the tang which was used for attachment to the stock. Also possible Type C.

Figure 30 Gunparts (Buttplates)

Figure Designation	Taxonomic Designation
A	Class I, Sp #1
B	CII, Sp #1

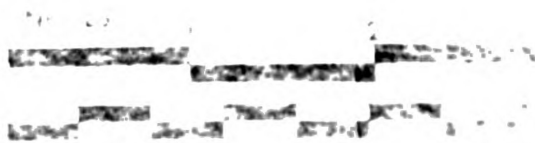
**A****B**

Figure 31 Gunparts (Buttplates)

Figure Designation	Taxonomic Designation
A	CI, Sp #1
B	CII, Sp #2

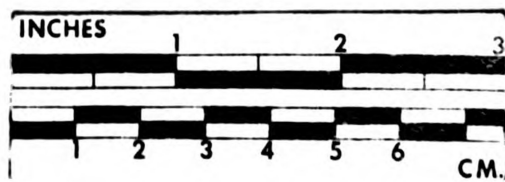
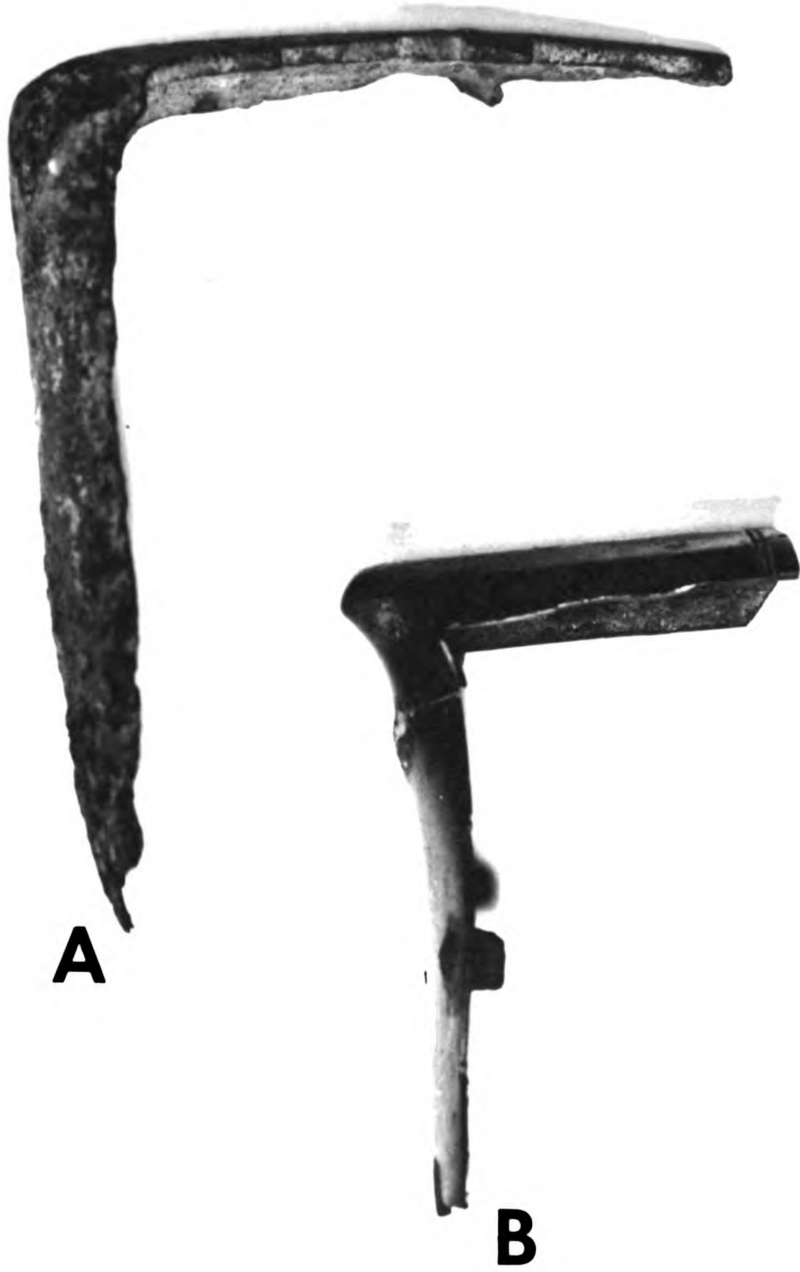
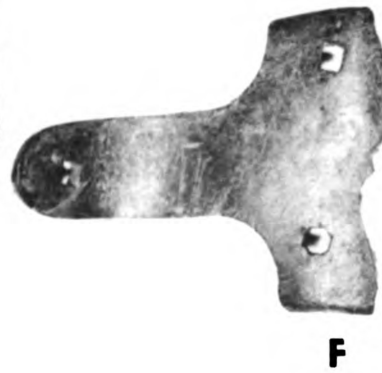


Figure 32 Gunparts (Buttplates and Buttplate Tangs)

Figure Designation	Taxonomic Designation
A	CII, Sp #2
B	CII, Sp #3
C	CII, Sp #4
D	CII, Sp #5
E	CII, Sp #1
F	CII, Sp #6



Specimen #4

Figure 32C

This specimen is a tang from a British Military Brown Bess musket, possibly of a Short or Long Land Pattern used as a standard arm through the majority of the eighteenth century until its replacement by the Indian Pattern in 1797 (Darling 1970: 40). On the inside of this cast brass tang a crown proof mark is present.

Specimen #5

Figure 32D

This tang fragment is ornately engraved and is characteristic of Hamilton's Type D trade gun of French 1730-1760 origin (Hamilton 1968: 11).

Specimen #6

Figure 32F

This tang and buttplate fragment is from an early northwest gun, and was secured to the butt of the stock by means of seven nails. Hamilton (1976: 10; 1968: 15) dates similar specimens within a 1725-1770 time range, and characterizes them as Type G English. This buttplate plus the serpentine sideplates are the only evidence of English trade guns at the site.

Specimen #7

Figure 42E

This brass finial was secured to the stock by a nail placed in the tip, and is very similar to specimens of Hamilton's Type I gun of French 1680-1700 origin (Hamilton 1968: 18).

Specimen #8

Not illustrated

This tang fragment is spoon shaped and ornately engraved, and is composed of thin brass. Hamilton (1960: 140) pictures a similar specimen which he assigns a 1730-1775 date based upon context.

CocksSeries A Narrow, solid combType 1 Rounded face

Figure 33A,F, 42I

3 specimens

These cocks exhibit narrow combs which, when complete, have slight inwards hooks on the upper portion. This type also has a "step" on the front face of the comb which, according to Hamilton (1960: 165) is typical of the early eighteenth century. One cock (Figure A) is complete with top jaw and screw, however this may be due to later (modern) cleaning and assembly.

Series B Wide grooved combType 1 Rounded face

Figure 33C

1 specimen

Type 2 Flat face with beveled edges

Figure 33B,D, 42H

3 specimens

These cocks exhibit comb with a deep groove in the front face. Two specimens have combs which are only modestly wide, while the other (Figure D) has an extremely wide grooved comb. In general, cocks with the grooved comb (i.e., all Series B specimens) had their greatest popularity in the mid-eighteenth century (Hamilton 1960: 166).

Series C Wide ungrooved combType 1 Flat face with beveled edges

Figure 33E

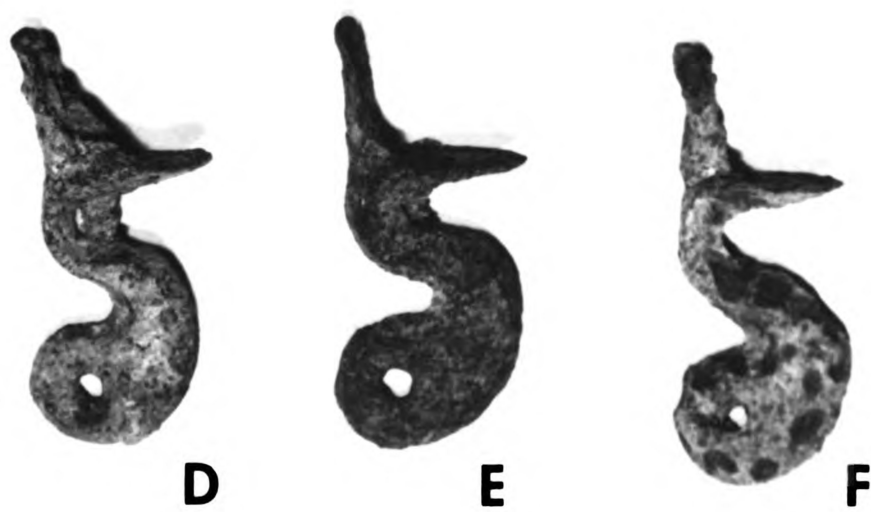
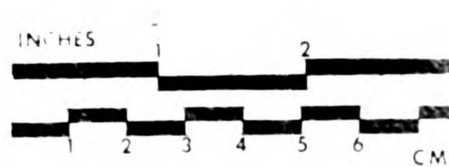
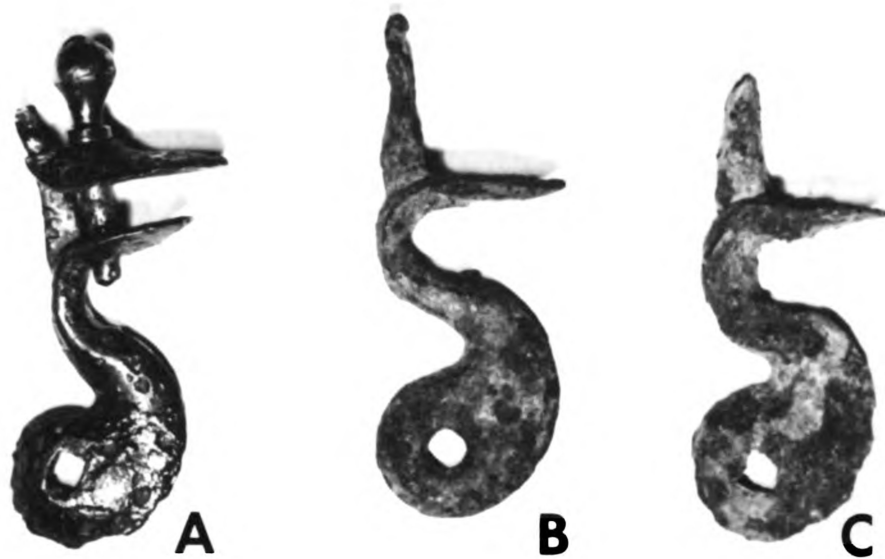
1 specimen

This cock displays a comb which is very wide and elliptically shaped, and no groove is evident in the face of the comb. The overall form of this specimen, as well as Series A and B cocks, is indicative of the eighteenth and early nineteenth centuries.

Discussion: Four additional cock fragments are present in the collections. These consist of two lower jaw fragments, and two bases both of which are flat with beveled edges.

Figure 33 Gunparts (Cocks)

Figure Designation	Taxonomic Designation
A	SA, T1
B	SB, T2
C	SB, T1
D	SB, T2
E	SC, T1
F	SA, T1



LocksSpecimen #1

Figure 34A

This lock has a curved base and pronounced nipple on the rear, both of which are characteristic of the second and third quarters of the eighteenth century. This specimen has a pan which extends 1.8 cm. out from the lockplate which is rounded on both the inside groove and the pan end. Overall length 14.4 cm.

Specimen #2

Figure 34B

This lock has a rounded base and nose which is slightly longer than Specimen #1. The pan extends outward 2.1 cm. from the lockplate and ends squarely rather than rounded, although the groove itself is round. The general shape is characteristic of the middle to late eighteenth century. Overall length 14.3 cm.

Pistol Barrel

This specimen is 14.5 cm. in length and has an inside bore diameter of 10.00 mm. The breech section is octagonal while the muzzle end is rounded ending in a ribbed band. The preservation of this iron barrel is very poor, however the overall shape is similar to "night pistols" of the eighteenth century.

Ramrod GuidesClass I IronSeries A Intermediate rampipeSpecimen #1-5

Not illustrated

All five specimens are composed of either iron or tin and were held to the stock by means of a single pin through a crimped hook. The method of construction of these rampipes is similar to that used on Northwest guns. Three of the specimens have smooth bodies, while two exhibits three ribs. Length range 2.5-3.5 cm.

Figure 34 Gunparts (Locks and Steels)	
Figure Designation	Taxonomic Designation
A	Locks Sp #1
B	Sp #2
C-G	Steels



A



B



C



D



E



F



G



Series B Terminal rampipeSpecimen #1

Figure 35J

This specimen is cast steel or iron and exhibits two rounded ring tabs on the top for attachment to the stock. The body of the guide is octagonally faceted and exhibits a rib at the mouth of the pipe as well as at the base of the tail.

Length 6.0 cm. (estimated)

Specimen #2

Not illustrated

This guide is similar in construction to Series A specimens except that a long tapering tail is present.

Overall length 9.0 cm.

Class II BrassSeries A Intermediate rampipeSpecimen #1,2

Figure 35A,C

These guides are probably from the British military Brown Bess Short of Long Land Pattern. On these muskets three intermediate guides of equal size were used, each having a cast ridge at the rim of each end. The ring tabs are rectangular on both specimens and on one of the guides, the top of the tab is marked XII. That same specimen also bears an "I" stamped on the tab side. The other guides tab is unmarked, but bears the marks III and VI on each side of the tab. These Roman numerals were probably assembly numbers used in the production process.

Length 4.0-4.05 cm.

Specimen #3

Figure 35B

This specimen was finely cast as a sheet and then rolled and crimped together. It is heavy brass and exhibits seven triangular facets on the body, and two ribs at each end.

Length 3.3 cm.

Figure 35 Gunparts (Ramrod Guides)

Figure Designation	Taxonomic Designation
A	CII, SA, Sp #1
B	Sp #3
C	Sp #2
D	Sp #4
E	Sp #5
F	SB, Sp #1
G	Sp #2
H	Sp #5
I	Sp #6
J	CI, SB, Sp #1
K	CII, SB, Sp #7

Specimen #4,5

Figure 35D,E

These guides are ribbed sheet brass and are characteristic of the rampipes found on Northwest trade guns (Hanson 1955: 41). Either three or four pairs of ribs run the diameter of the guide. The sheet brass was cut and rolled and the hood or tab was formed by crimping the two ends. A single pin through the hood held the guide to the understock.

Specimen #1-6

Not illustrated

These specimens are sheet brass and were formed in the same manner as specimens #4 and #5. These guides however are plain and do not exhibit ribs. These rampipes may have come from low quality trade guns, and are certainly nonmilitary.

Series B Terminal rampipesSpecimen #1

Figure 35F

This guide is composed of very heavy brass, cast in a single piece, and exhibits a short tail and two rounded ring tabs. The part of the body which would be seen after attachment to the stock is faceted in three sides with double ribbing at the mouth and the base of the tail. The area between the two tabs has been deeply incised with a British "broad arrows" found on many English (and often military) goods. This guide may be military issue, but is not found on Brown Bess muskets which have much longer tails.

Overall length 6.4 cm.

Specimen #2-4

Figure 35G

The specimen shown, as well as several others, are about identical in shape and size and exhibit a smooth body with single ribs around mouth and tail base. The tail tapers fairly evenly from the base to the tip and is approximately equal in length to the body.

Length range 6.4-6.9 cm.

Specimen #5

Figure 35I

This specimen is the same as the previous three specimens except that it exhibits a shorter body and longer tail.
Length 6.0 cm.

Specimen #6

Figure 35H

This guide like the previous four specimens exhibits a thumbnail shaped convexity at the base of the tail, and is composed of cast brass bent into a cylindrical form. Unlike the others, the body faceted into five sides, while the tail is extremely long and exhibits an extra concavity before the taper begins.
Length 7.3 cm.

Specimen #7

Figure 35K

This specimen is composed to two pieces soldered, together--a plain bodied sheet brass intermediate rampipe, and the cast tail section bears an incised "VII" used probably as an assembly number. In addition, the flare of the tail section exhibits an exceedingly long "thumbnail," with four incised lines radiating from it to the tip of the tail.

SideplatesClass I IronSpecimen #1

Figure 36A

This specimen is iron, 14.5 cm. in length, and is characteristic of one sideplate style illustrated by Hamilton (1962: 10) in his description of Type D guns. Although this specimen is iron it is still clearly nonmilitary and was used on a trade gun of the suggested 1730-1760 time period perhaps as part of a lower grade model. Hamilton (1976: 15) identified similar specimens from Michilimackinac as being of French origin.

Figure 36 Gunparts (Sideplates)

Figure Designation	Taxonomic Designation
A	C1, Sp #1
B	CII, Sp #2
C	Sp #3
D	Sp #4
E	Sp #5



A



B



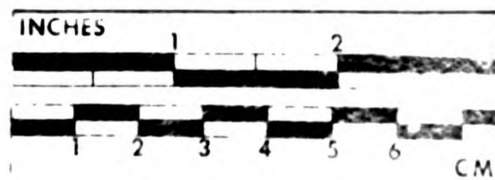
C



D



E



Class II BrassSpecimen #2

Figure 36B

This specimen was pictured by Hamilton (1968: 10, Figure B) as characteristic of the French Type D gun sideplate, and having a 1730-1760 date. The sideplate depicts a chase scene with two hounds after a fleeing deer. A crowned-R touchmark is present on the left side of the plate which may be a French armory mark of St. Etienne (Hamilton 1968: 13). The Type D gun with all brass furniture is regarded by Hamilton as a high quality trade gun which "enjoyed wide acceptance among customers of the French" (Hamilton 1968: 13).

Specimens #3-5

Figure 36C,D,E

These examples are also Type D sideplate fragments of the 1735-1760 time period. Specimen #3, Figure D, has been reworked and sharpened for reutilization as a scraper or chisel.

Specimens #6,7

Figure 37A,B

These specimens are fragments of early serpent sideplates. The crudely engraved body is characteristic of trade guns of the 1750 time period, and were probably evolutionary prototypes for later cast sideplates (Hamilton 1960: 135).

Specimens #8-13

Figure 37C,D,E,F,G Figure B (South Bend Museum)

These serpent sideplate fragments are finely cast of heavy brass and are characteristic of Northwest trade guns of circulation 1810-1820 (Hanson 1955: 69). Hamilton (1960: 135) confirms this date and states that "only under exceptional circumstances can they (cast serpent sideplate) be assumed to antedate 1800."

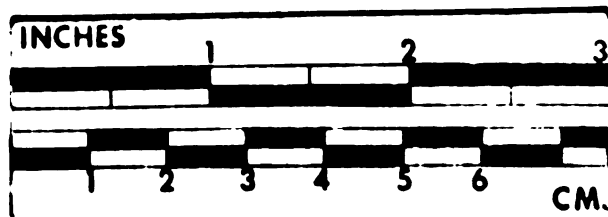
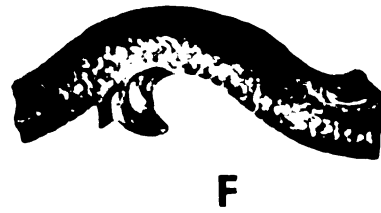
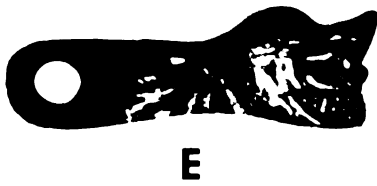
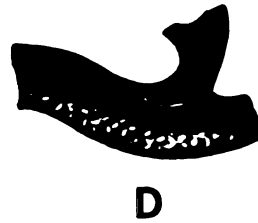
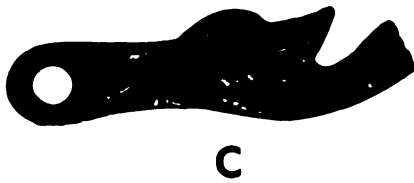
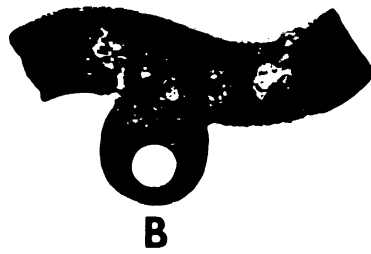
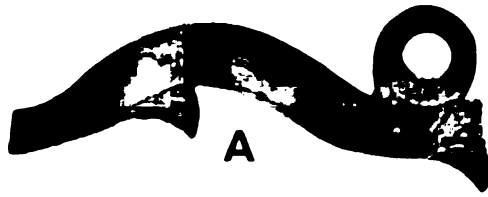
Specimen #14

Figure 37C

This sideplate is held in the South Bend Museum collection and consists of a fragmentary specimen with a foliated body characteristic of Hamilton's Type B and C guns of French origin, with a time range of 1680-1730 (Hamilton 1968: 3-6).

Figure 37 Gunparts (Sideplates)

Figure Designation	Taxonomic Designation
A	CII, Sp #6
B	Sp #7
C	Sp #8
D	Sp #9
E	Sp #10
F	Sp #11
G	Sp #12



Springs

A total of twelve springs and spring fragments are present in the Fort St. Joseph collections. These consist of four complete mainsprings (Figure 38A-D), five mainspring fragments (Figure G), and three frizzen springs (Figure 38E,F,H). No sear springs are present from the site. The mainspring vary in length from 7.9-8.7 cm. and are of two styles. Style A (Figure 38A,C,D) comprises all mainsprings except one and is distinguished by the stepped articulation of the screw hole. On the other hand, the single style B specimen (Figure 38B) has a flattening of the upper spring segment well below the screw hole.

Frizzen springs can also be typed into one of two styles based upon the type of screw hole--open or capped. The two open holed specimens (Figure 38E,H) are approximately 5.2 cm. in length, while the capped specimen (Figure 38F) is 4.7 cm. long.

Steel or Batteries

Five steels are represented in the Fort St. Joseph collections. Four of these (Figure 34C,D,F,G) are small in size in comparison to military frizzens, with a height and width range of the striking face from 4.0 to 4.8 cm. and 2.3 to 2.4 cm. respectively. These steels were probably from trade guns and small fowling pieces used at the site during the eighteenth century. In contrast however, the fifth specimen is much larger having a striking face 4.7 cm. in height and 2.8 cm. in width (Figure 34E). Every dimension except height exceeds the others, and the overall shape is similar to batteries found on Brown Bess Muskets. In addition, this specimen appears to have been undrilled, and may represent a spare part intended for use as a replacement. Similar blanks have been reported from Michilimackinac (Hamilton 1976: 29), and are thought to be evidence of gunsmithing activity at the site.

Triggers

A total of twelve triggers are present in the Fort St. Joseph collections. Due to wide range in variation of trigger shapes and the individuality of each specimen based upon the whim of the gunsmith, triggers are not good chronological indicators. Trigger bodies (the flat top of the trigger parallel to the barrel when in place) vary considerably in size and shape and range from a duckbill, Figure 39A, to a rectangular, Figure 39G, silhouette. The trigger blade is the part of the trigger which protrudes

Figure 38 Gunparts (Springs)

Figure Designation	Taxonomic Designation
A	Mainspring, Style A
B	Style A
C	Style B
D	Style A
E	Frizzen spring, Open style
F	Capped style
G	Mainspring, Style A fragment
H	Frizzen spring, Open style



A



B



C



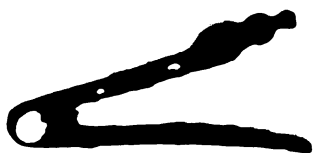
D



E



F



G



H

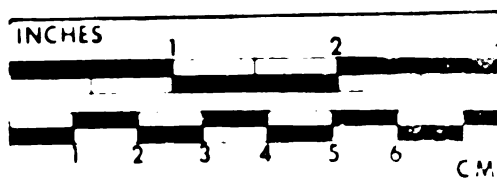
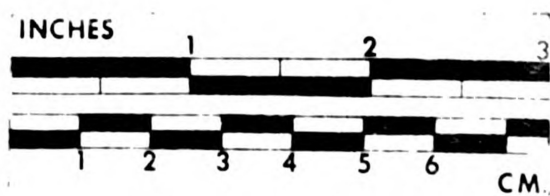
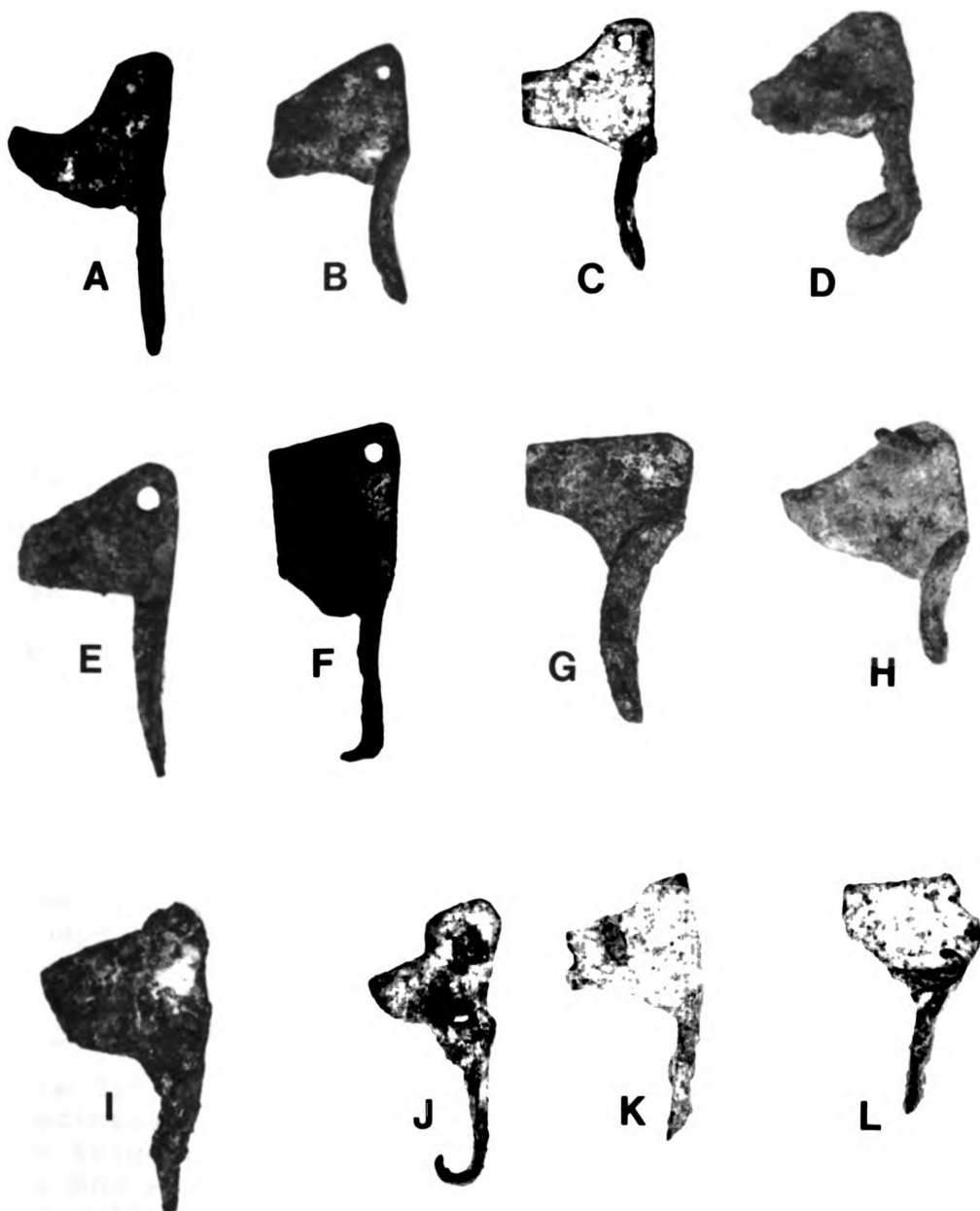


Figure 39 Gunparts (Triggers)

Figure Designation	Taxonomic Designation
A	Type 1
B	Type 2
C	Type 2
D	Type 4
E	Type 1
F	Type 4
G	Type 2
H	Type 2
I	Type 3
J	Type 4
K	Type 3
L	Type 2



outward from the stock and is normally at a ninety degree angle, perpendicular to the body. These blades also vary in size and shape, and four general types have been designated based upon the degree of the blade curvature. The front faces of the blades in all instances are rounded, but vary slightly in degree.

Type 1 Straight to slightly concave blade

Figure 39A,E

2 specimens

These specimens exhibit nearly straight blades which are continuous of the front edge of the trigger body. The faces of the blades are elliptical in shape, extending from the lower corner of the body straight downward.

Type 2 Concave blade

Figure 39B,C,G,H,L

5 specimens

These triggers exhibit blades which are concavely curved, the faces of which are elliptical and extend across the lower portion of the trigger body and angle outwards.

Type 3 Convex blade

Figure 39I,K

2 specimens

These specimens exhibit trigger blades which are convexly rounded and which angle towards the rear of the gun. The blades are elliptical (Figure I) or spatulate (Figure K) in shape, and extend from the lower corner of the trigger body.

Type 4 Rearward-curved blade

Figure 39D,J

2 specimens

These triggers exhibit blades which have been curled to the rear, and which are spatulate in shape. In both cases the blade extends straight downwards from the lower corner of the trigger body and then curls. This curl is characteristically found on Northwest trade guns of the late eighteenth and early nineteenth centuries, but is also found on weapons dating as early as the seventeenth century.

Trigger Guard Bows, Tangs, and Finials

Class I Bows

Series A Iron

Specimen #1

Figure 40A

Complete bow with both front and rear tangs. The gently curving tang ends may have had finials, but they are not present. The fact that the guard was set into the stock by two tabs points towards an 1800 date.

Bow width 21 mm., approximate length 22.5 cm.

Series B Brass

Specimen #2

Figure 40B

Plain bow, 26 mm. in width, of heavy brass. This bow resembles the guard on a British Military Brown Bess, however it is not complete enough to be positively identified. In addition, Hamilton (1960: 143; 1968: 19-20) illustrates several similar guards found on trade guns of English origin with a 1730-1815 time range.

Specimen #3,4

Figure 40C,E

These guards exhibit a cast chevrolet design which is characteristic of Hamilton's Type C gun of French 1685-1730 origin. The Figure C and E specimens are 20 and 24 mm. wide respectively, and were found on either trade or French Bourgeois guns (Hamilton 1968: 7).

Specimen #5-7

Figure 40D

Figure 42A,D

These guards exhibit engraved bows of chevrolet or scroll designs which are found on Hamilton's Type D trade gun. The Type D gun is of French affiliation and was used as a quality trade item during the 1730-1760 period (Hamilton 1968: 12-13).

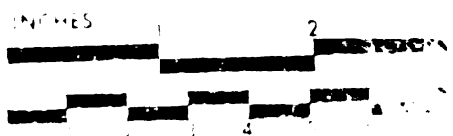
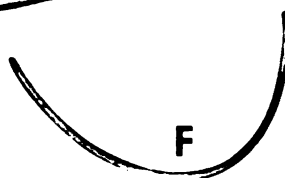
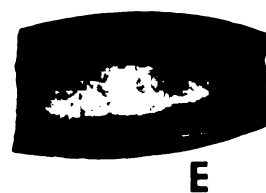
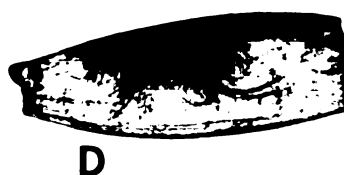
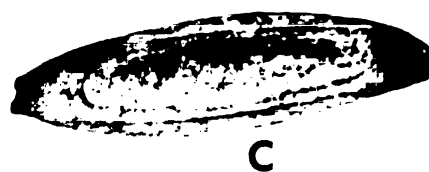
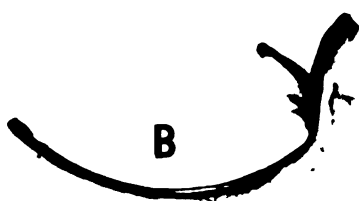
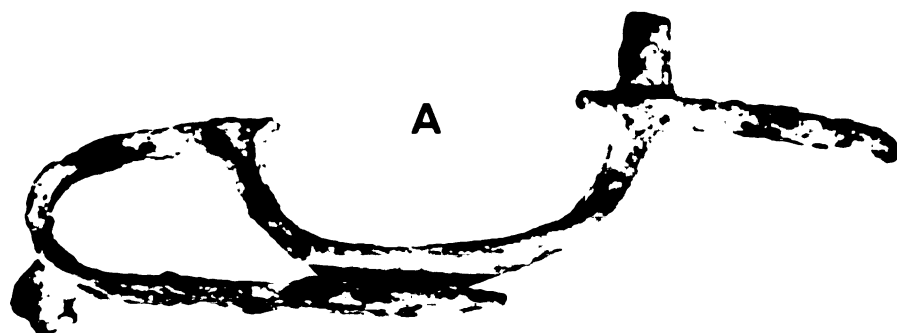
Specimen #8

Figure 40D

Narrow (8 mm.) ring which may have served as a bow guard.

Figure 40 Gunparts (Trigger Guard Bows)

Figure Designation	Taxonomic Designation
A	CI, SA, Sp #1
B	SB, Sp #2
C	Sp #3
D	Sp #5
E	Sp #4
F	Sp #8



Class II Tangs and FinialsSeries A IronSpecimen #1

Not illustrated

Rear tang with rounded ends and with an overall length of 14.4 cm.

Series B BrassSpecimens #2,3

Figure 41A,C

Front tangs with "stylized torch" finials characteristic of Hamilton's Type D trade gun. French affiliation 1730-1760.

Specimens #4,5

Figure 41B,D

Front tangs with ornately cast "potted plant" finials characteristic of Hamilton's Type C trade gun. These specimens exhibit a cast face at the base of the finial which exhibits fine relief detail. French affiliation 1685-1730. Overall length 9.1 cm.

Specimen #6

Figure 41E

Front tang with finial broken off. Probably Hamilton's Type C or D.

Specimen #7

Figure 41F

Heavy cast real tang with short finial. Possibly late trade gun, but as yet unidentified.

Specimen #8

Figure 41G

Rear tang with a gently curving point, characteristic of Hamilton's Type C and D trade gun. French 1685-1760.

Figure 41 Gunparts (Trigger Guard Tangs and Finials)

Figure Designation	Taxonomic Designation
A	CII, SB, Sp #2
B	Sp #4
C	Sp #3
D	Sp #5
E	Sp #6
F	Sp #7
G	Sp #8
H	Sp #9
I	Sp #10
J	Sp #11

Specimens #9,10

Figure 41H,I

Front tangs and finials of Hamilton's Type C trade gun. French 1685-1730.

Specimen #11

Figure 41J

Complete rear guard tang with missing finial. Overall shape suggests French 1730-1760 (Hamilton Type D) affiliation.

Wrist EscutcheonsClass I BrassSpecimen #1

Figure 42F

This escutcheon is from a British Military Brown Bess musket, and is found on numerous models from the 1720 to 1797 period. This plate has the characters A/ 8/ 87 deeply impressed into the face. These letters and numbers may represent regimental inscriptions, and have been found in numerous archaeological sites, including Fort Stanwix (Hanson and Hsu 1975: 66-67). In addition, this specimen has "XII" scratched into the backside of the escutcheon. Length 6.35 cm., width 2.23 cm.

Specimen #2

Not illustrated

This specimen has an unusual shape with a roughly triangular shaped body, round base, and two deep corner-notches in each side. The face is engraved in a floral pattern, leaving an oval central plaque plain. The bottom side exhibits a centralized round post for attachment to the wrist of the gun. In style, ornateness, and thickness of brass; this specimen resembles other gun hardware present on French trade guns of the mid-eighteenth century.

Discussion.--In addition to the gun parts and hardware previously mentioned, the following are also present in the Fort St. Joseph collections:

Figure 42 Gunparts (Assorted Hardware)

Figure Designation	Subsection Description	Taxonomic Designation	
A	Trigger Guard Bow	CI, SB,	Sp #6
B	Sideplate	CII,	Sp #13
C	Sideplate	CII,	Sp #14
D	Trigger Guard Bow	CI, SB,	Sp #7
E	Buttplate Tang	CII,	Sp #7
F	Wrist Escutcheon	CI,	Sp #1
G	Breech Plug		
H	Cock	SB, T2	
I	Cock	SA, T1	

GUN ORNAMENTS



A



B



C



D



E



F

ENGLISH GUNTABLET
WITH NUMBER OF
REGIMENT

G



H



I

4 sears

4 breech plugs (Figure G) measuring 16.2-16.7 mm. in inner thread diameter

2 identifiable gun barrel fragments measuring 14.5 and 15.2 mm. in bore diameter. Many other gunbarrel fragments are present, but have been reutilized to such extent as to make measurements of their bore diameters impossible.

4 gun worms

In summary, the gunparts from Fort St. Joseph can be grouped into six separate types based upon form and function. These types, their dates of use, and national origin are presented in Table 2.

Table 2.--List of Gun Types.

National Origin	Type	Date	Number of Parts Represented
French	Trade Gun Type C	1685-1730	10
French	Trade Gun Type D	1730-1760	11
French	Trade Gun Type I	1680-1700	1
French	Military Musketoon	1733-1734	1
British	Military Brown Bess	1717-1797	5
British	"Northwest" Trade Gun	1775-1875	12
British	Trade Gun Type G	1725-1770	3

HAIR PIN

One double shanked hair pin is present in the Fort St. Joseph collections in Niles. This specimen is brass, 8.9 cm. in length, and has fine circular knobs soldered onto the bend. These knobs are concave and may have at one time contained glass or jeweled insets. This hair ornament may have been either an item of trade, or a personal possession of one of the fort's inhabitants.

HAIR PIPES

Hair pipes are cylindrically shaped tubes of metal designed to be worn in the hair as ornamentation. A tuft of hair is inserted through the tube and then tied with an overhand knot large enough to block passage back through the pipe. These ornaments are known to have been used by Potawatomi groups in 1600 AD, many years prior to contact with Europeans (Quimby 1966: 29). At that time, hair pipes were made from hammered copper, while in historic times they were produced from scraps of metal trade goods such as copper kettles. Square or rectangular pieces of sheet copper or brass were cut and rolled to the desired size and shape.

At Fort St. Joseph, eleven hair pipes are present in the collections, all of which are made of brass or copper. These tubes range in length from 49.0 to 93.2 mm. with a mean of 70.7 mm. (Figure A-I). One specimen (Figure B) has been wrapped around a flat piece of wood, perhaps to shape the pipe. All of the examples exhibit relatively smooth surfaces, except for one specimen (Figure F) which is angularly bent and ridged in order to further decorate the piece.

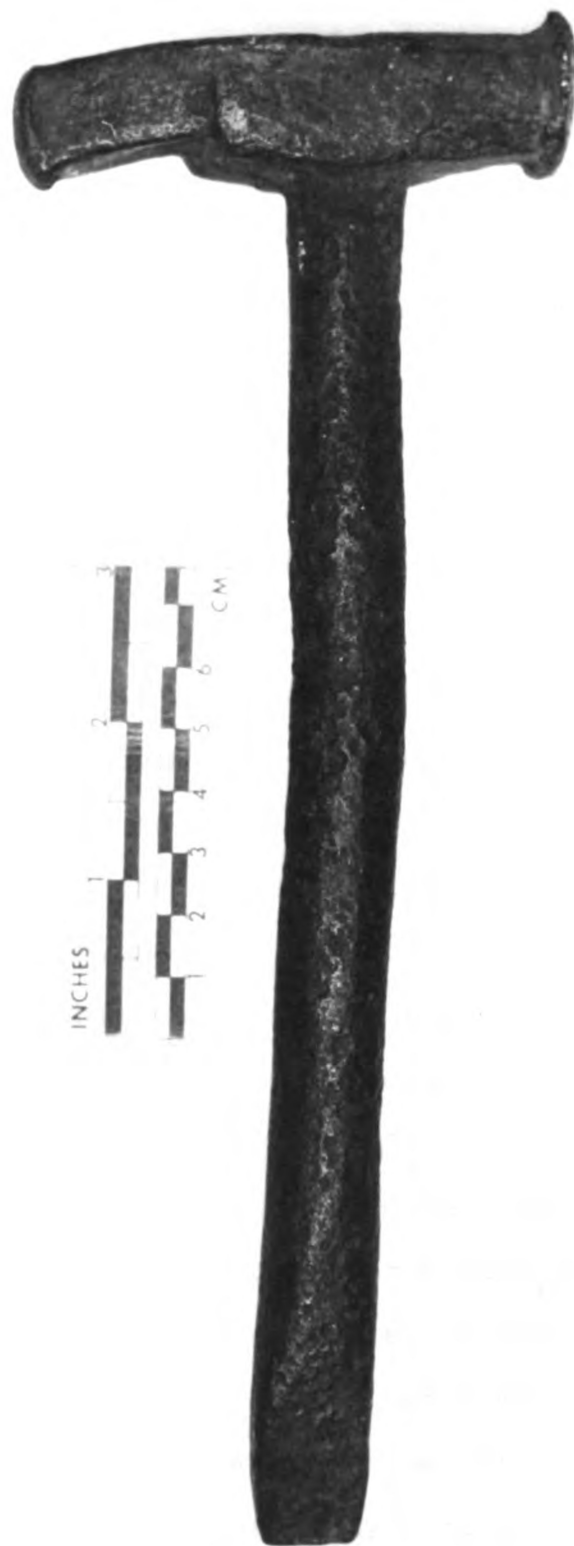
Figure 43 Hairpipes (A-I)

These tubes were most probably aboriginally manufactured and worn, and were a reflection of those cultures in southern Michigan. At Michilimackinac, to the north, no hair pipes have reportedly been found, perhaps indicating the difference in Indian cultures existing between the northern and southern areas and between the Michilimackinac and Fort St. Joseph areas.

HAMMER

Only one hammer, Figure 44, is present in the collections of Fort St. Joseph. This specimen exhibits an iron head and shaft which appear to have been forged in one piece. The head has two striking ends, with one being much narrower than the other. The head is 9.3 cm. in length and varies between 1.0 and 2.9 cm. in width. The shaft itself is 21.2 cm. in length and is roughly circular in cross section with a diameter of 1.7 cm. The end of the shaft which would be held in the hand has been flattened to produce a chisel-like end. This, combined with a slight bend in the shaft, indicated possible use of the shaft as a pry bar. This hammer may be a specialized craftsman tool, or may perhaps simply be a multi-purpose hammer and pry bar. Overall weight is approximately one pound.

Figure 44 Hammer



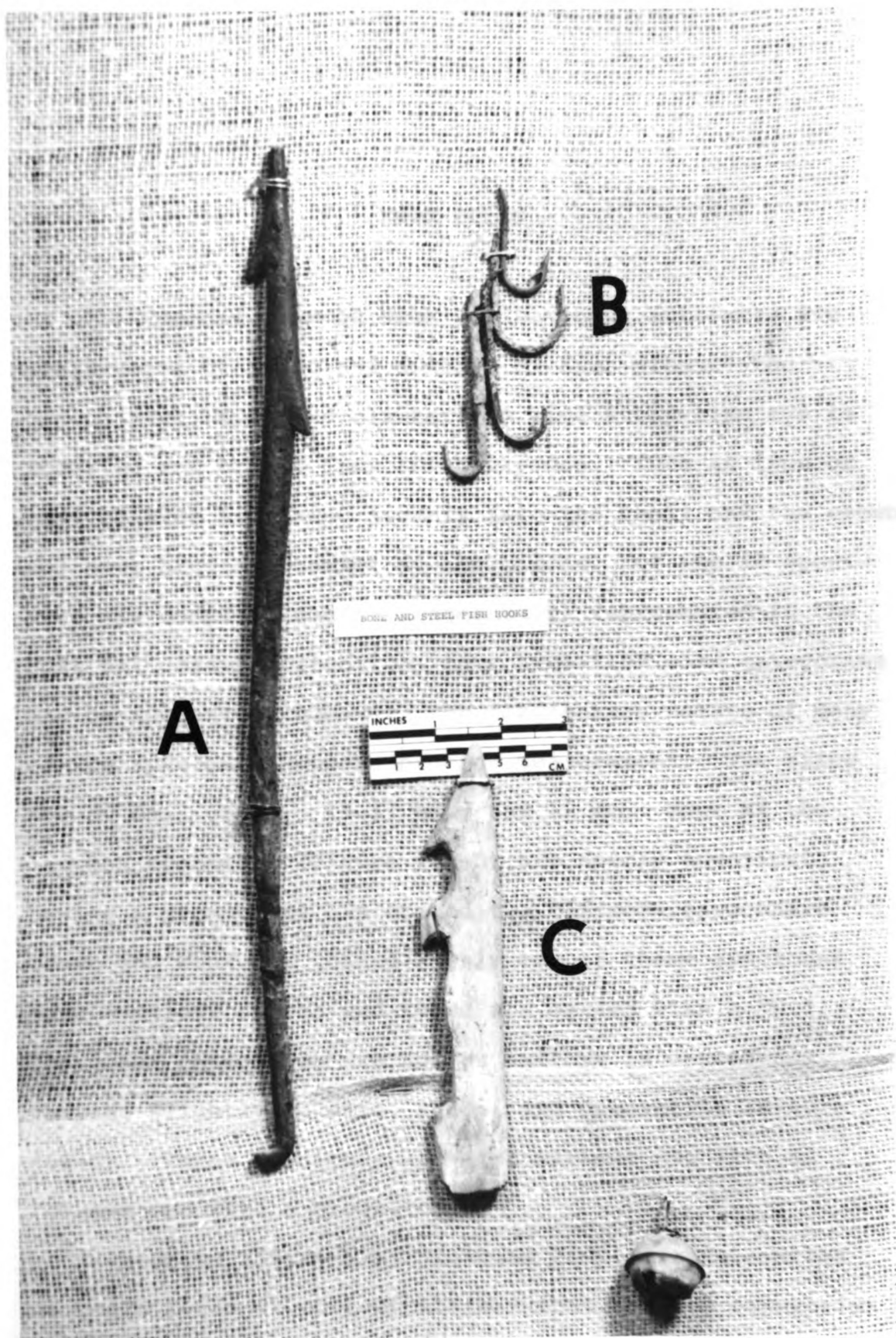
HARPOONS

Two harpoons, one iron (Figure 45A) and one bone (Figure 45B) are present in the Fort St. Joseph collections. The iron specimen is 38.2 cm. (15 1/4 inches) in length and has two barbs located on opposite sides of the spear shaft. The foremost barb begins at the rounded point and extends approximately 5 cm. to the rear, at which point the second barb begins to flare outward. The end of the shaft is bent at a ninety degree angle to the shaft and probably served for an aid in attachment to a long wooden handle. Iron harpoons of this nature were reportedly used to kill large fish, muskrat, and beaver. Seven specimens very similar to this harpoon were recovered from the Basswood River in Minnesota during an underwater archaeological survey (Wheeler 1975: 72-73).

The bone harpoon in the collection is 17.2 cm. in length and exhibits two barbs on the same side of the shaft. This specimen has a very sharp point and ends in a squared base which may have at one time contained a drilled hole. Six bone harpoons are reported from Fort Michilimackinac which are roughly similar to the St. Joseph specimen (Stone 1974: 278).

Figure 45 Harpoons and Fishhooks

Figure Designation	Description
A	Iron harpoon
B	Fishhooks - Types 1 and 2
C	Bone harpoon

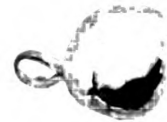
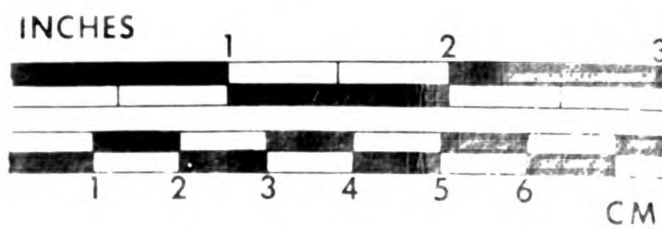


HAWK BELLS

Commonly termed hawk bells, these artifacts are constructed of brass and consist of four pieces--the crown, back, eye, and clanker. A wide strap-like eye is inserted and brazed into the backpiece. Then an iron or lead clanker is placed loosely into the shell and the crown and back brazed together at the middle. Of the 48 specimens (19 complete and 29 fragmentary) represented in the Fort St. Joseph collection, four tentative size categories may be suggested; however, the fragmentary nature of many of the specimens hampers precise measurement. The sizes are 30 mm., 20 mm., 15-17 mm., and 12 mm. Four of the largest specimens (Figure 46A-D) are nearly identical, having a pronounced lip around the circumference where crown and back are joined. Only two of these specimens have complete crowns and these are marked with a "D." The other categories are not as uniform in appearance, varying slightly in size, shape, and decoration (Figure 46G-N). Three specimens are also marked; two with an "N" and one with a crown.

Stone (1974: 135) presents five size categories of bells found at Fort Michilimackinac. These categories

Figure 46 Hawk Bells (A-N)

**A-D****E-I****J-N**

do not appear to correlate with those suggested by the Fort St. Joseph sample, although some overlap does occur. As common items of trade during the eighteenth century, hawk bells were worn as ornamentation for the body or clothing. At Michilimackinac, 117 bells were recovered from contexts, which indicated a 1730-1770 date, placing their use primarily during the French period (Stone 1974: 135). Seventeen of the specimens from Michilimackinac were marked with crown symbols "D" or the number "4." Hawk bells are reported also from the Guebert Site in Illinois (Good 1972: 130), the Gilbert Site in Texas (Jelks 1967: 87), the Fletcher Site in Michigan (Mainfort 1976), the Gros Cap Cemetery Site (Nern and Cleland 1974) and the Lasanen Site (Cleland 1971) in Michigan's Upper Peninsula.

HINGES AND PINTLES

The hinges from Fort St. Joseph can be divided into two major classes: those hinges which are self-contained and which form a permanent joint between door (shutter, etc.) and frame, and those which are composed of two separate elements (pintle, pintle strap) which depend on the force of gravity and are therefore semi-permanent. The function which the hinges served cannot be positively identified, however some general comments on function may be forwarded based upon size and shape.

Class I Self contained hinges (permanent)

Series A Staple or pin hinges

2 specimens

This style of hinge consists of two iron elements joined at the loops. These elements may consist of staple-like tapered pins or they may be solid. Each pin is driven into the wood of the door and frame, therefore producing a permanent hinge joint. At Fort St. Joseph both specimens have split shafts. Length of the elements ranges from 4.3 to 5.4 cm. Probable use: furniture hinges (Stone 1974: 193).

Series B Strap-like hinges

These specimens consist of three elements: two usually matching straps which are looped and intertwined, and a central pivot pin. Each strap is nailed into the door and frame therefore securing the two pieces in a permanent hinge.

Type 1 Taper strap

2 specimens

These specimens taper gradually from the pin to the strap end. One specimen is 2.5 cm. wide and 4.7 cm. (estimated) long, while the other is 4.6 cm. wide and 3.0 cm. long--length referring to the distance of the pin to one strap end. These examples may have been used on shutters, doors, or gates. However, the narrower hinge in particular could have been used on smaller objects such as furniture and trunks.

Class II Pintle hinges (semi-permanent)

These hinges consist of two elements--the pintle and the pintle strap or loop. Pintle hinges were commonly used on doors and some furniture and were dependent upon the force of gravity to hold the two pieces together. The pintle element is usually L-shaped and is secured tightly to the door frame with a small, rounded piece pointed upwards. The door with a matching pintle strap or loop is then set over the upward projecting piece, and the door is allowed to freely pivot on the strap/pintle joint. This type of hinge is not permanent, and the door can be lifted upwards from the pintles and taken off at anytime.

Series A PintlesType 1 Tapered

10 specimens

These specimens are secured into the door frame by driving the tapered end into the wood with the rounded projection pointing upwards. The larger pintles ranging in shaft length from 6.7 to 11.5 cm. would most probably have been used with gates or doors, while the smaller ones (5.3, 3.8 cm.) could have been used in furniture or shutter hinges.

Type 2 Flared, strap-like

2 specimens

These examples are secured to the door frame with nails, and a flat and rather triangular in shape. Strap length 5.7, 6.2 cm. Strap width 5.0, 5.5 cm. (estimated)

Series B Pintle straps or loopsType 1 Rectangular to square

6 specimens (3 in Niles Museum, 3 in South Bend)
 These straps are flat and secure onto a door or gate by means of two or sometimes three nails. They range in length (measured loop to end) from 2.8 to 4.4 cm. and width from 2.8 to 5.4 cm. At Fort Michilimackinac (Stone 1974: 223-224) this strap shape correlates with Series AT1 tapered pintles and the two may have been regularly used together. The variance in overall size of these strap elements may point toward a variety of uses including doors and furniture.

Type 2 Flared strap-end

1 specimen

This specimen exhibits a small loop and a strap which flares outward towards the end, giving it an overall triangular appearance. Two nail holes are present, and were used to secure the strap to the door. Length 5.9 cm., width 5.5 cm.

Comments.--Two additional specimens in the Northern Historical Society Museum in South Bend may be hinge straps, however they are fragmentary and do not contain looped ends. These specimens are 19 to 23 cm. long and are about 2.0 cm. wide. One example ends in a circular point, while the other ends in a T-shape, being joined to another strap of metal. Both specimens may represent fragments of decorative hinges, however positive identification is not possible.

HOES

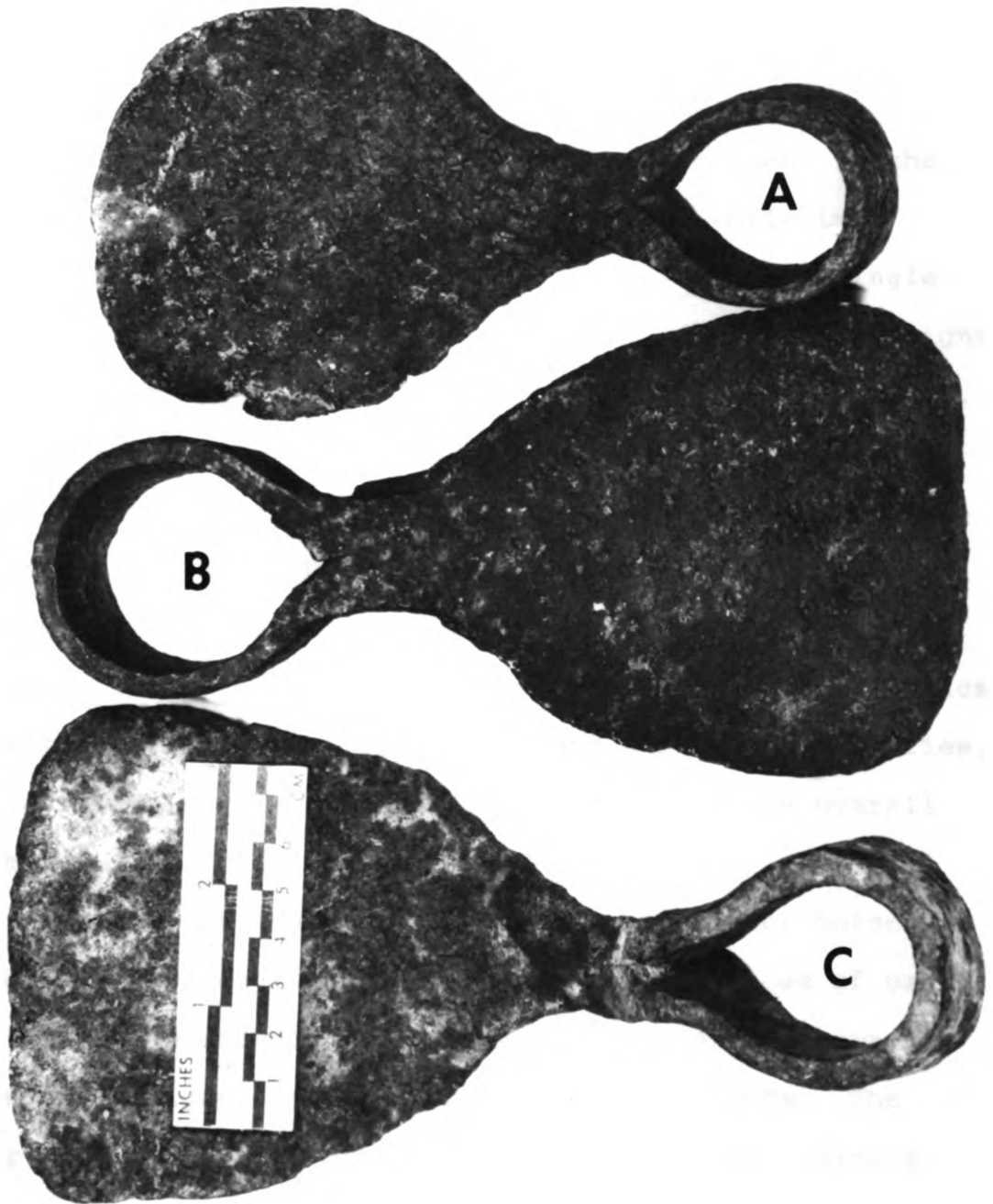
Four iron hoes are present in the Fort St. Joseph collections. They exhibit flat blades with rounded or straight edges and round strap-like polls. Quimby (1966: 71) states that these hoes are characteristic of the Middle Historic Period, i.e., 1670-1760. If this is the case, the Fort St. Joseph specimens would be of French origin and most probably of local manufacture. The dimensions of the specimens are:

		Length	Width
#1	Figure 47A	20.2 cm.	10.2 cm.
#2	Figure 47B	19.5 cm.	9.8 cm.
#3	Figure 47C	13.6 cm.	8.9 cm.
#4	Not illustrated	16.8 cm.	8.5 cm.

All four specimens are unmarked. At Fort Michilimackinac no hoes were recovered. This suggests perhaps that agriculture was less important at Michilimackinac than at St. Joseph--possibly due to the superior soils and the longer growing season.

Figure 47 Hoes

Figure Designation	Taxonomic Designation
A	Sp #1
B	Sp #2
C	Sp #3



HORSESHOES AND OXSHOES

One horseshoe and two oxshoes are present in the Fort St. Joseph collections in South Bend, while two additional oxshoes are represented in Niles. The single horseshoe (Figure 48A) is U-shaped with relatively straight margins, and is 11.55 cm. in length and 10.5 cm. in width. Each branch of the shoe exhibits three nail holes with nails still in place. There is no grooving or fullering present. The heels of each branch have been turned down to produce calkins, however there is no toe ship at the forend. The horseshoe in question exhibits characteristics from the seventeenth, eighteenth, and nineteenth centuries, and a reliable date cannot be concluded from its overall form.

Although a general chronology exists for horse-shoes, no such dating system exists for the shoes of oxen. Unlike the horseshoe, the oxshoe consists of two separate branches designed to accommodate the split hoofs. The four oxshoes in the Fort St. Joseph collections (Figure 48B,C) are quite similar in shape and exhibit five nail holes per branch set within a fullered groove. All specimens have toe slips and calkins, and overall size

Figure 48 Horseshoes and Oxshoes

Figure Designation	Description
A	Horseshoe
B	Oxshoe
C	Oxshoe



ranges from 9.4 to 10.3 cm. in length and 3.7 to 4.1 cm. in width. Thickness also differs, and ranges from 5.0 to 7.1 mm.

KETTLES, KETTLE PARTS

During the seventeenth, eighteenth, and early portions of the nineteenth centuries, the copper kettle formed a staple good for trade. The collections from Fort St. Joseph have yielded three complete kettles and numerous kettle parts which are now housed in both the Niles and South Bend Museums. The complete kettles may have been found in association with several burials uncovered in the bluff area overlooking the St. Joseph River (Quimby 1966: 144-146). This explains the occurrence of these specimens in the collections which are otherwise primarily surface-collection material. Kettles, kettle lugs, copper scrap, and rivets are described.

Kettles

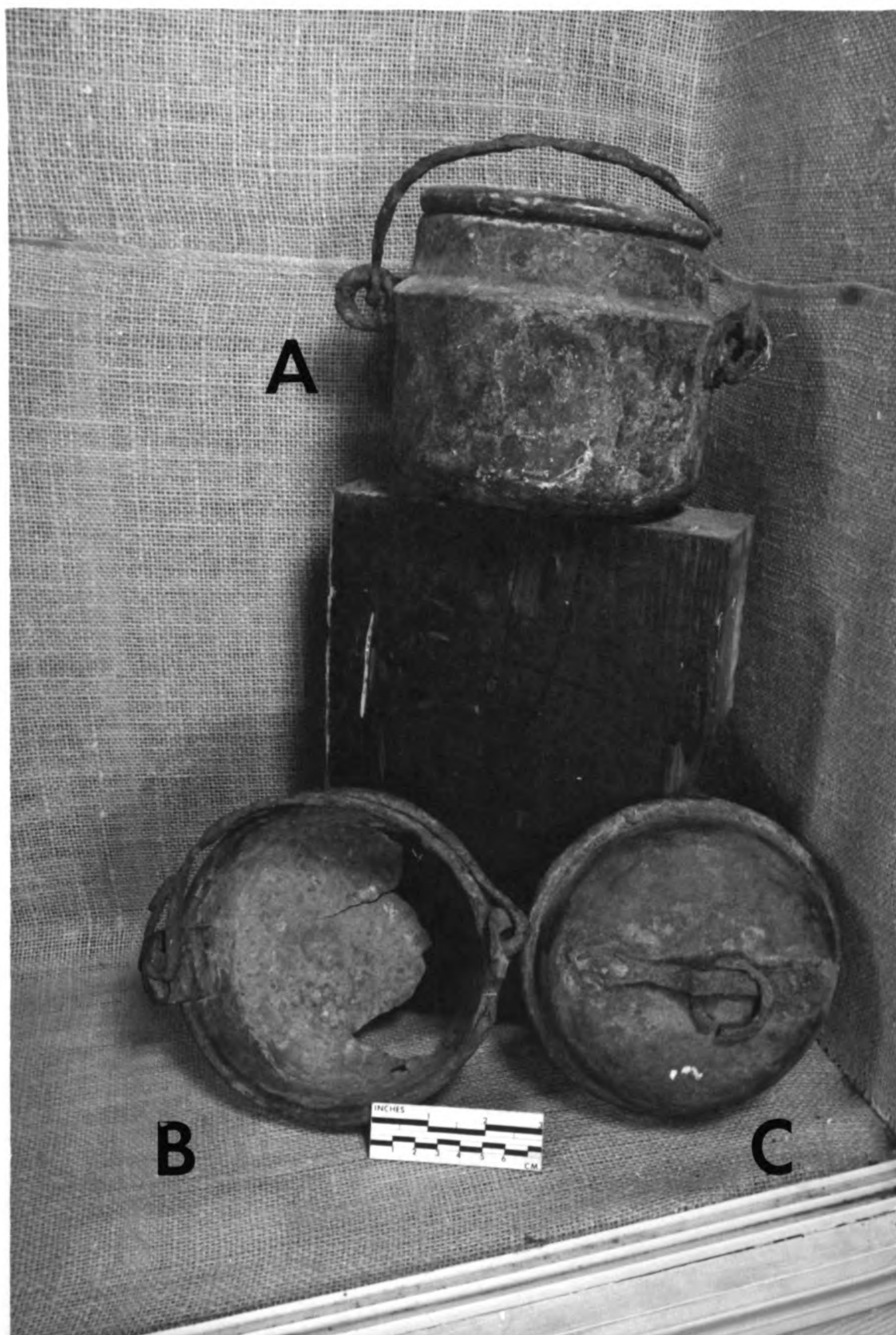
Specimen #1

Figure 49A and C

This complete kettle (top) with lid (lower right) has an overall height of 14.1 cm. and a basal diameter of 14.3 cm. A slightly rounded bottom and straight sides lead to an indented mouth and rim. Both the kettle rim and the lid rim have been rolled around an iron loop. The side lugs are iron and are generally rectangular in shape although with a rounded top. The loops of the lugs are circular, and hold curved iron bail. A strap-like iron lug is present on the lid tip and encloses a circular iron ring.

Figure 49 Kettles

Figure Designation	Taxonomic Designation
A	Sp #1 (base)
B	Sp #2
C	Sp #1 (lid)



Specimen #2

Figure 49B

This kettle was never designed to engage a lid, but rather was meant to be left open. The base diameter is 13.6 cm. and the height is 5.7 cm. Two Type 1 rim lugs are present with the typical dog-eared rectangular shape, and each are attached by means of two solid copper rivets. Those lugs are attached over a rolled rim and hold an iron bail. This kettle type was probably used through both French and British periods of occupation (Stone 1974: 175).

Specimen #3

This kettle and lug is 14.4 cm. in height and has a basal diameter of 17.4 cm. Unlike specimen #1, this kettle was designed so that the lid sets into the kettle rim, rather than over it. The rounded bottom and tapering sides lead to a rolled rim which is slightly smaller than the base. Like specimen #1 the side lugs are of iron and similarly shaped, but unlike it the lid lug and ring are made of copper.

Kettle LugsType 1 Kettle rim lugs (copper)

Figure 50A-D

8 specimens

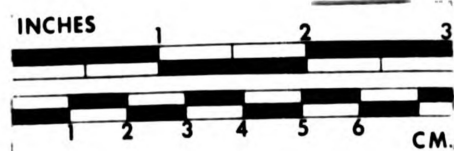
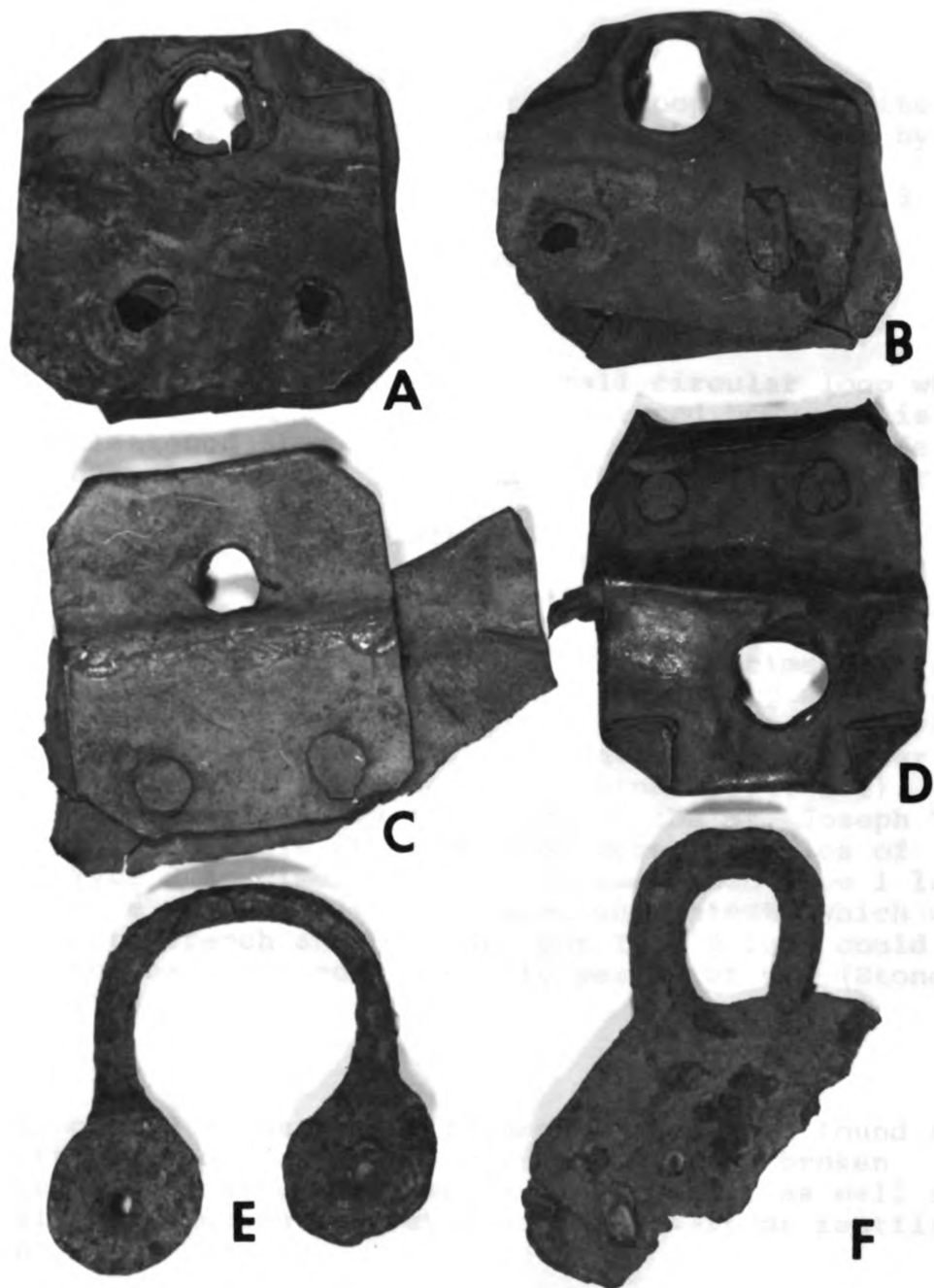
These lugs are similar to those found on Specimen #2 and are generally rectangular to square in shape. As their name implies, they are folded over the rolled kettle rim and are secured by two copper rivets. A hole is punched through the ears of the lugs from the inside, and the square corners are folded over towards the outside of the kettle. The rivets used to secure the lugs may either be solid (Figure 50C,D copper, or rolled (Figure B) copper, with the latter category represented at Fort St. Joseph by a single specimen. Length range 4.9-6.8 cm., width range 3.9-6.5 cm.

Type 2 Kettle side lugs (iron)

These specimens were riveted onto the sides of kettles, and were probably used only on kettles which were designed with lids.

Figure 50 Kettle Lugs

Figure Designation	Taxonomic Designation
A	T1
B	T1
C	T1
D	T1
E	T2, Va
F	T2, Vb



Variety a U-shaped

Figure 50E

4 specimens

These lugs exhibit a circular loop with flattened ends which were attached to the kettle side by means of two copper solid rivets.

Length range 4.5-6.8 cm., width range 3.8-6.8 cm.

Variety b Closed "winged" lug

Figure 50F

1 specimen

This specimen exhibits a small circular loop which is attached to a flared, flattened body. This flattened area was attached to the kettle side by means of two or perhaps three rolled copper rivets.

Length 8.2 cm., width 8.5 cm. (estimated)

Variety c Looped rectangular lug

These lugs are present on kettle specimens #1 and #3, but have not been found separately at the site. Comment: During the 1959-1966 excavations at Fort Michilimackinac a total of seventy-four copper kettle lugs were recovered (Stone 1974: 171). Of this total, sixty-five were of the St. Joseph Type 1 lugs, while the remainder were varieties of Type 2 specimens. At Michilimackinac Type 1 lugs were recovered from occupation contexts which were both French and English, but Type 2 lugs could not be assigned a specific period of use (Stone 1974: 175).

Kettle Scrap

A total of 170 sheet copper fragments have been found at the fort, many of these obviously coming from broken kettles. Numerous rim fragments are present, as well as several scraps which show evidence of repair or reutilization.

Rivets

Four solid rivets similar to those found on some kettles are present in the collection, as well as twelve diamond-shaped copper rivet blanks. See Stone (1974: 192-193).

KEYS

A total of twelve keys are present in the Fort St. Joseph collections. Stone (1974: 225) presents three terms used in the description of key attributes. He states that "Key shank refers to a handle-like loop at the proximal end of the key shank. Key blade refers to a projection (usually rectangular) near the distal end of the key shank." Due to the oxidized condition of many specimens a detailed description of the key blade and shank is often not possible. However, when such descriptions are possible, they will be provided. The classification of keys is based upon variations in the key shaft and its proximity to the blade. All twelve specimens are manufactured of iron.

Series A Hollow Shank

These specimens exhibit shank ends which are hollow in order to accommodate the keyhole shaft projecting from the inside of door locks, hasp locks, and padlocks. One specimen (Figure A) lacks the blade and cannot be further described.

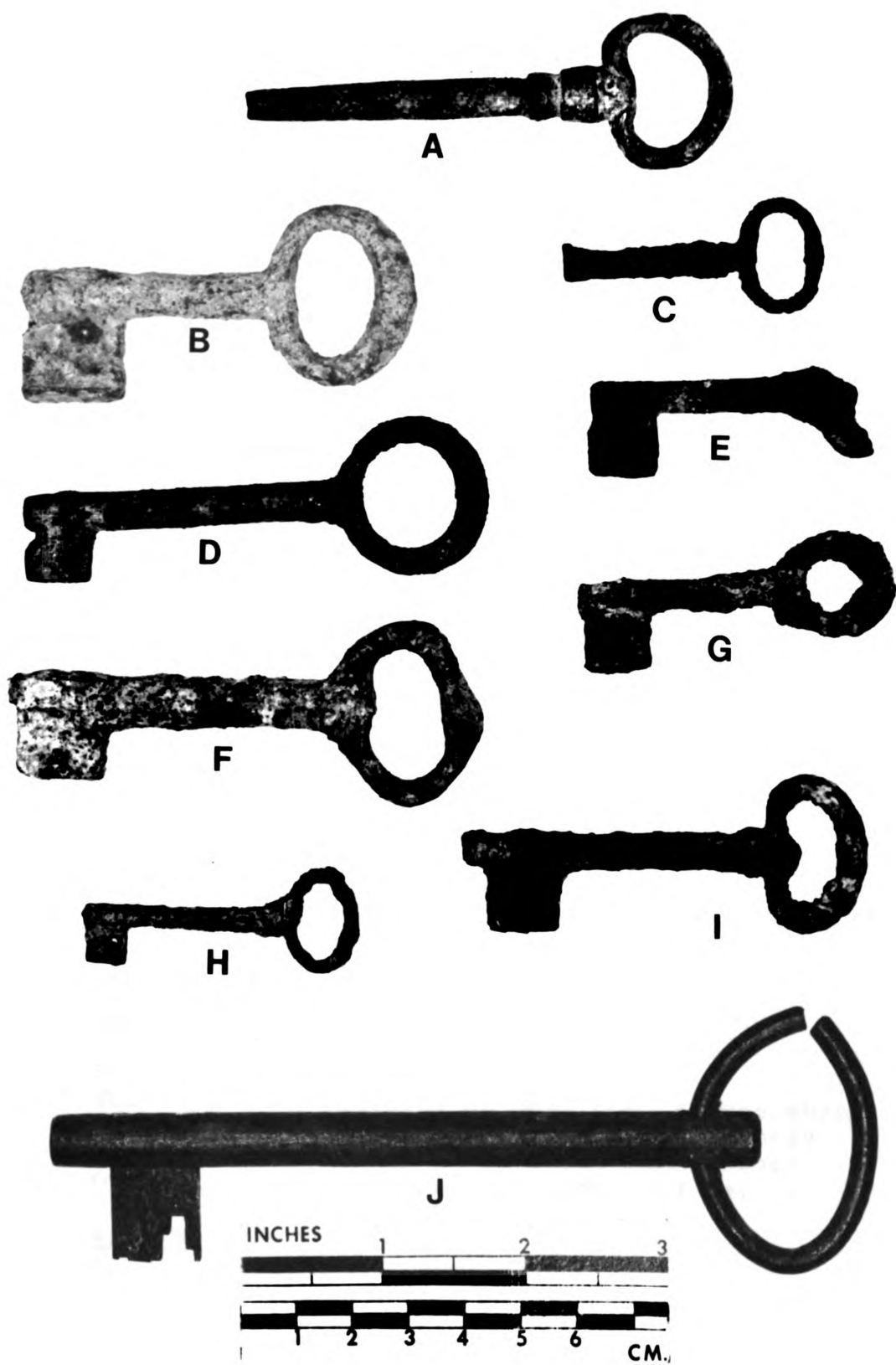
Type 1 Key shank terminates at the distal end of the key blade

Figure 51B
1 specimen

This example exhibits an oval shaped bow, round hollow shank, and blade with two notches. The key blade when

Figure 51 Keys

Figure Designation	Taxonomic Designation
A	SB, T2, Sp #1
B	SA, T1
C	SB, T1, Sp #1
D	Sp #2
E	Sp #3
F	Sp #4
G	Sp #5
H	Sp #6
I	T2, Sp #2
J	T2, Sp #3



viewed from the front is an inverted T-shape with one notch directly under the shank on the distal end. The second notch is placed in the proximal end of the blade halfway between the shank and the flared blade base. Overall length 6.9 cm., bow width 3.2 cm. While nine Series A specimens have been recovered from Fort Michilimackinac, none of the examples are identical to this specimen from Fort St. Joseph.

Series B Solid shank

Type 1 Key shank terminates at the distal end of the key blade

Specimen #1

Figure 51C

This key exhibits a small square blade at the distal end of the cross sectional round shank. It has an oval shaped bow 2.0 cm. in width, and an overall length of 4.5 cm.

Specimen #2

Figure 51D

This key exhibits a round bow, round solid shank, and flat key blade with a single notch in the distal end tangent to the shank. Overall length 8.2 cm., bow width 2.8 cm.

Specimen #3

Figure 51E

This key fragment exhibits a round solid shank and an unnotched blade flared at the base to form an inverted T-shape.

Specimen #4

Figure 51F

This specimen exhibits an oval bow, square shank, and flat unnotched blade. This key is poorly manufactured and may be of local manufacture. Overall length 8.2 cm., bow width 3.3 cm.

Specimen #5

Figure 51G

This key exhibits a round bow, round solid shank, and a key blade with a single notch in the distal end tangent to the shank. Unlike specimen #2,

this key is 5.5 cm. in length and has a blade which flares outward at the base.
Bow width 1.9 cm.

Specimen #6

Figure 51H

This key exhibits an oval bow, round shank, and flat unnotched blade. Length 4.9 cm., bow width 1.9 cm.

Specimen #7

Figure 52D

This key exhibits an oval bow, round shank, and flat unnotched blade similar to the previous specimen although 7.4 cm. in length, bow width 3.4 cm.

Type 2 Key shank extends beyond distal end of key blade

Specimen #1

Figure 52B

This key exhibits a heart-shaped solid bow with a single perforation in the center. The shank is round in cross section and extends beyond the flat unnotched blade. Overall length 7.1 cm., bow width 3.3 cm.

Specimen #2

Figure 51I

This key exhibits an oval to heart-shaped bow, round shaft, and an inverted T-shaped blade with a single notch in the proximal end halfway between the shank and the blade base. Overall length 7.1 cm., bow width 2.3 cm.

Specimen #3

Figure 51J

This large key exhibits an oval to round bow made of round heavy gauge wire which has been inserted through a drilled hole in the round shank. The blade is flat and is extensively notched in the basal portion, and has been pinned into a groove in the shaft at two points. Overall length 14.5 cm., bow width 1.6 cm.

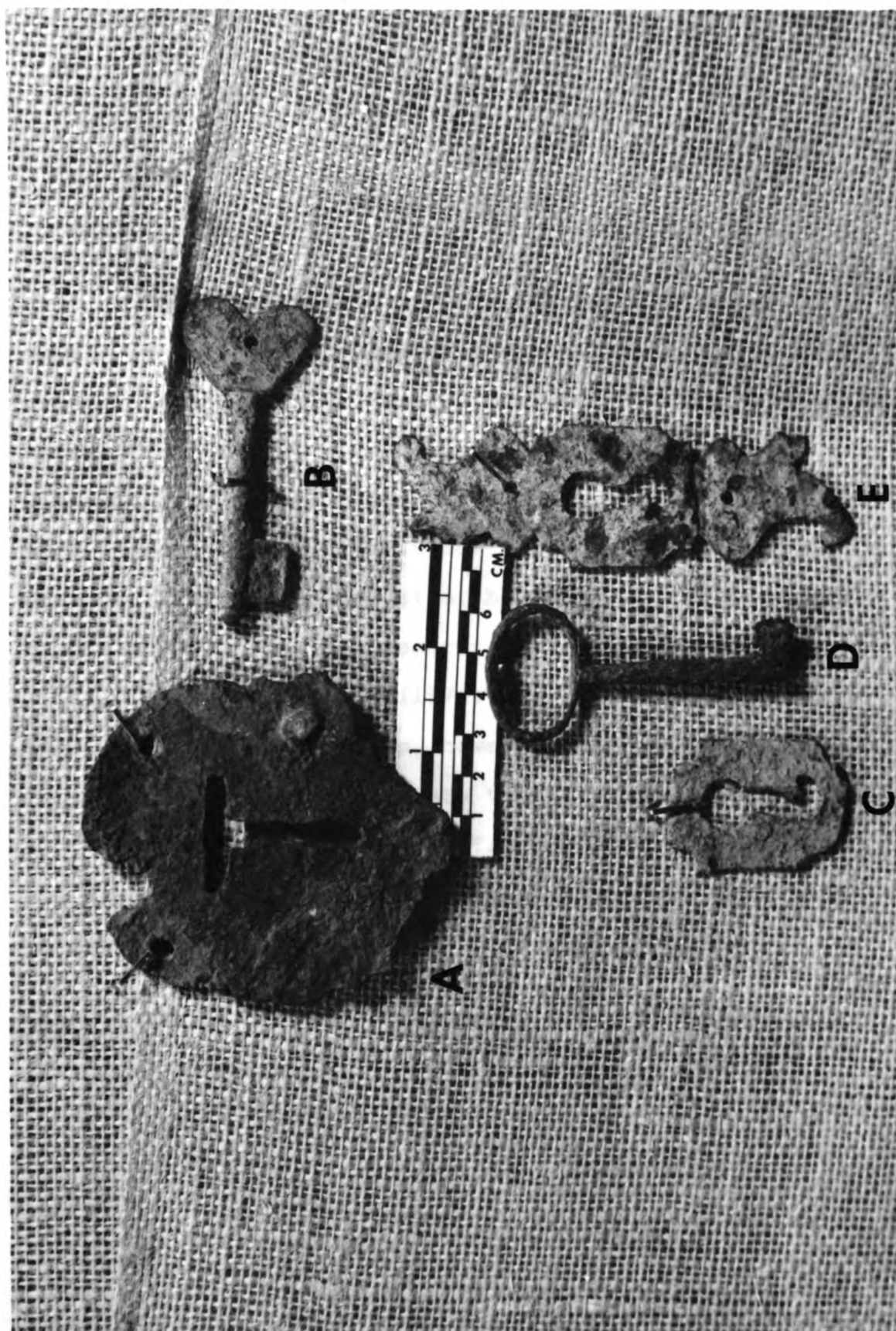
Discussion.--Both Series A and Series B keys (42 specimens) have been recovered from Fort Michilimackinac and are generally quite similar to the St. Joseph samples, though not identical. Stone (1974: 229) points out that keys most commonly found at Michilimackinac were in contexts dating after 1755, but were also used prior to that date. The difference in frequencies between the sites illustrates the larger population at Fort Michilimackinac and suggests a more affluent way of life than at Fort St. Joseph.

KEYHOLE ESCUTCHEONS

Five keyhole escutcheons are present in the Fort St. Joseph collections. Three of the specimens (Figure 52 A,C,E) are in the NIHS museum in South Bend, while the remaining two are in the Niles collections. Four of the escutcheons are made of iron, while one smaller specimen is brass. The sizes and shapes of the specimens vary considerably and range from a large, probably rectangular escutcheon with a T-shaped keyhole, to a small ornate example with a hooked shaped keyhole. Two of the five are very similar to specimens illustrated from Fort Michilimackinac (Stone 1974: 220 Plate 117 E,H,J), which were concluded to be from furniture of the 18th century. The single brass escutcheon is quite small (length 3.5 cm., width 1.6 cm.) and is oval in shape with two fan-shaped ends. The size of this specimen, as well as its brass composition points towards use on a small box or chest.

Figure 52 Keys, Keyhole Escutcheons

Figure Designation	Description
A	Possible lockplate
B	Key SB, T2, Sp #1
C	Escutcheon plate
D	Key SB, T1, Sp #7
E	Escutcheon plate



KNIVES (IRON)

This description of iron knives is based upon a sample of 225 blades, blade fragments, and blade handles present in the Fort St. Joseph collection. The form of the knife blades is the primary criteria for division in classes, groups, types and varieties, and is dependent upon diagnostic characteristics such as: hinge presence or absence, hinge shape and size, blade shape and size, and handle shape, size, and decoration.

Stone's typology (1974: 263-273) is used as a model for this description, however, it has been modified in order to better accommodate the St. Joseph material.

Of the sample, thirty fragments of blades lacked all diagnostic characteristics, and therefore could not be assigned to either of the two following classes.

Class I Clasp Knives (presence of hinge element)

Group I Blades

Type 1 Knob or flanged hinge element

Variety a Angular back blade shape

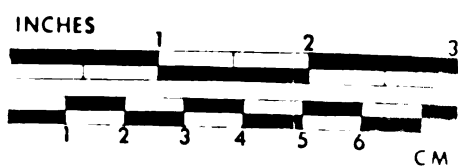
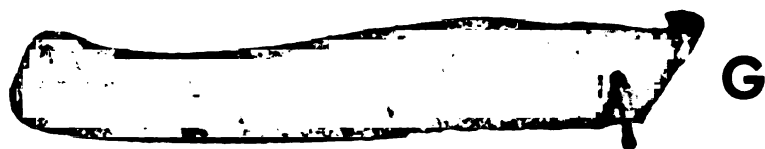
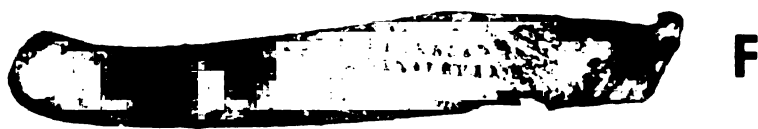
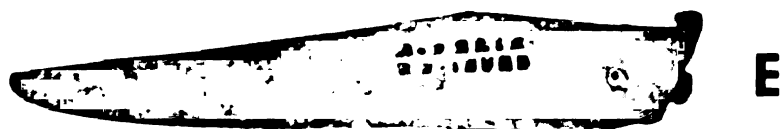
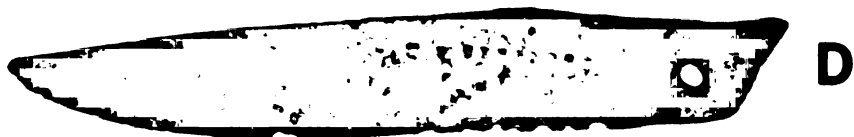
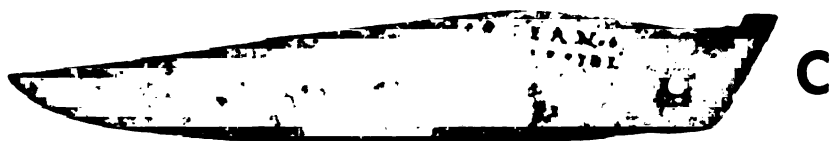
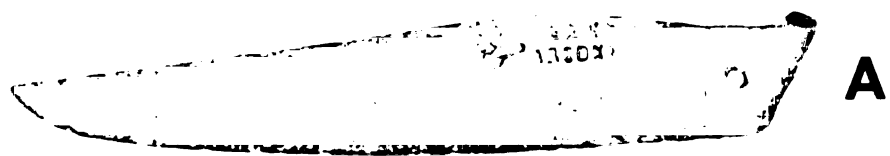
Figure 53A through E

70 specimens

Length range 11.5 cm.-14.5 cm., width range 1.8 cm.-2.5 cm. Of these specimens, thirty show evidence of maker's marks. The following

Figure 53 Knives (Iron)

Figure Designation	Taxonomic Designation
A-E	CI, GI, TI, Va
F-G	Vb



marks are distinguishable on twenty-one specimens.

Maker's Mark #1 (flower motif) IEAN
Figure 53A ARCONÉ
1 specimen
This specimen is similar to one found at Michilimackinac and reported by Stone (1974: 275) and is pictured in Figure 166I.

Maker's Mark #2 (flower motif) HVGVE
1 specimen PALL ·E

Maker's Mark #3 IVET-CH
Figure 53B APELO__
2 specimens
These marks can be identified as those of Ivet Chapelon. Similarly marked specimens are represented at the Guebert Site (Good 1972: 157) and at Michilimackinac (Maxwell and Binford 1959: 106). Stone presents three specimens which, although fragmentary, may represent the marks of Chapelon. These marks are:

IV(ST).CH	-VST.CH	_V(ST).(CH)
APELON	AP(E)LON	_ION

Variety b Rounded tip blade shape

Figure 53F,G
6 specimens
Length range
Four of these specimens exhibit maker's marks.
They are:

Maker's Mark #1 IVS(E) ·CH
1 specimen APELON
This mark appears on Variety 'a' blade types from Fort Michilimackinac, the Guebert Site, and Fort St. Joseph.

Maker's Mark #2 PIERRE·PER
Figure 53F (R)IN·IEFIL·S
2 specimens
This mark may be represented at Fort Michilimackinac by the fragmentary marks shown below.

IERRE·B(E) -
(I) -· (LEI) ILS

PIERRE·B_(R)

(Stone 1974: 265)

Maker's Mark #3
1 specimen

ANDRE
(A)VNON

Maker's Mark #4
Figure 53C
3 specimens

IEAN
FERRIDL

Maker's Mark #5
Figure 53D
2 specimens

FE EOM
SB IE

Maker's Mark #6
Figure 53E
4 specimens

A.FELIS
_IEVNS

Maker's Mark #7
1 specimen

AT.OM
ILOM

Maker's Mark #8
1 specimen

IEAN.B
IVE

This mark is probably that of Iean B. Tivet. A similar marked example is present at the Guebert Site (Good 1972: 159), and

Maker's Mark #9
4 specimens

V
IB
S

Similar specimens have been found at Fort Michilimackinac and reported by Stone (1974: 265-75). This mark appears in Figure 166A of Stone's work.

Maker's Mark #10
1 specimen

IEAPEIS
ER_RIS

Maker's Mark #11
1 specimen

AVDE
OEDE

Variety c Convex blade shape

Figure 54A

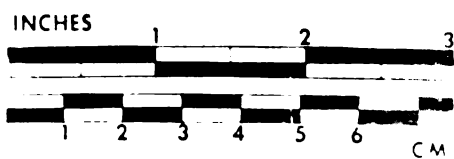
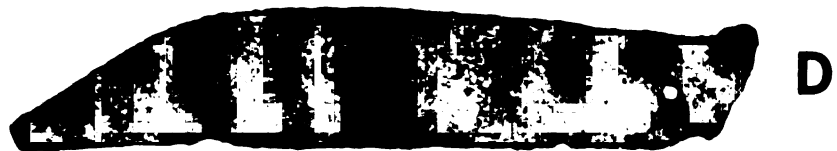
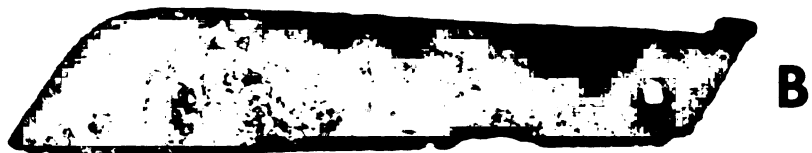
2 specimens

Length 12.5 cm., width 2.0 cm.

These specimens exhibit convex blades and edges which taper evenly to the point. Neither example shows evidence of maker's marks.

Figure 54 Knives

Figure Designation	Taxonomic Designation
A	Ci, Gl, Tl, Vc
B	Vd, sbt i
C	sbt i
D	sbt ii
E	sbt ii
F	sbt i



Variety d Hawk-bill blade shape

The hawk-bill shape exhibits a blade back which tapers downwards at the blade tip. The other section of the blade back may or may not remain parallel to the blade edge.

Subtype i Sharply tapered

Figures 54B,C,F

5 specimens

Length range 12.0 cm.-14.2 cm., width range 2.0 cm.-2.4 cm.

These examples, none of which are marked, exhibit a blade back which tapers sharply at the blade tip.

Subtype ii Long tapered

Figures 54D,E

10 specimens

Length range 11.1 cm.-12.6 cm., width range 1.9 cm.-2.4 cm.

These examples exhibit a hawk-bill shape where the blade back gradually tapers to the tip. One specimen is marked with

_OIN JAVM

Comments: An additional twenty-nine fragments can be assigned to CIGlTl, however further division into Varieties is not possible.

Type 2 Ring and knob hinge elementVariety a Angular back blade shape

Figure 55A

1 specimen

Length 13.2 cm., width 2.1 cm.

This example exhibits no evidence of maker's marks.

Type 3 Extended back hinge element

These specimens exhibit a knob which extends past the rear of the blade, and which is a horizontal extension of the blade back.

Variety a Angular back blade shape

Figure 55B

5 specimens

Figure 55 Knives

Figure Designation	Taxonomic Designation
A	CI, G1, T2, Va
B	T3, Va
C	T4, Va
D	T5, Va
E	G2, T1, Va
F	T2, Va
G	Vb
H	Vc

Length range 11.0 cm.-14.0 cm. (estimated),
width range 2.0 cm.-2.6 cm.
None of the specimens exhibit evidence of
maker's marks.

Type 4 Indented hinge element

Variety a Convex blade shape

Figure 55C

1 specimen

Length 10.3 cm., width 1.8 cm.

This example exhibits a lowered blade back
which serves as the hinge stop. This specimen
exhibits no evidence of maker's marks. The
form of this knife is similar to those illus-
trated by Neumann (1973: 242-250) of American
or British origin.

Type 5 Hooked hinge element

Variety a Convex blade shape

Figure 55D

1 specimen

Length 10.2 cm., width 1.1 cm.

This example exhibits a long, thin convexly-
shaped blade. The hinge element is formed by
a hook which serves to secure the blade in a
locked position when open. This type of hinge
mechanism resembles those found on British or
American knife specimens.

Group 2 Handles

Type 1 Spring and handle plate construction

Variety a Angular handle shape

Figure 55E

1 specimen

Length 5.5 cm., width 1.0 cm.

This example consists of a cast brass handle
with ornate floral decoration. The back of
the handle (spring side) is angular, with the
apex of the angle formed at the meeting of two
convex indentations.

Type 2 Spring, handle and bolster lining construction

Variety a Curved handle

Figure 55F

2 specimens

Length range 10.0 cm., width range 1.5 cm.

Variety 'a' consists of two bolster linings with springs. The handles do not remain but most probably consisted of wood or bone. The end opposite the hinge curves downward at the butt end of the handle in order to facilitate blade opening. This handle shape has been found at Fort Ligonier, a British military post in Pennsylvania. See Grimm (1970: 146).

Variety b Slight-curved handle

Figure 55G

1 specimen

Length 8.0 cm., width 1.6 cm.

Variety 'b' consists of one bolster lining which has a straight spring back and a rounded handle butt and a curved blade groove.

Variety c Spatulate-shaped handle

Figure 55H

1 specimen

Length 11.4 cm., width 2.6 cm.

Variety 'c' consists of one specimen with a bone handle and spatulate shape.

Class II Case Knives

Group 1 Blades

Type 1 Pointed handle shaft

Variety a "Butter Knife" blade shape

Figure 56A,B

3 specimens

Length 15.5 cm., width 2.5 cm.

These specimens exhibit wide blades and a rounded blade tip. The blade back is slightly convex. No maker's marks are present. A bolster is present between blade and handle shaft.

Figure 56 Knives

Figure Designation	Taxonomic Designation
A	CII, G1, T1, Va
B	Va
C	Vb
D	Vc
E	Vd



Variety b Snub-nose blade shape

Figure 56C

1 specimen

Length 12.1 cm., width 2.0 cm.

This example exhibits a straight blade back and a sharply upturned blade edge which forms the tip. A slight bolster is present between the blade and the handle shaft. No maker's marks are present.

Variety c Tapered blade shape

Figure 56D

1 specimen

Length 22.0 cm. (estimated), width 2.4 cm.

This example exhibits a straight blade back and slightly convex blade edge which tapers (presumably) to a point. A bolster is present. This specimen is also unmarked.

Variety d Convex rear blade shape

Figure 56E

1 specimen

This example consists of the rear half of a blade with the handle shaft. The rear portion of the blade back and the edge convexly taper to the handle shaft. Unlike the variety a,b,c specimens, no bolster is present between the blade and handle shaft. This specimen is unmarked.

Type 2 Flat handle shaftVariety a Wide flat handle with no pin holes

Figure 57A

1 specimen

This example consists of the rear portion of a blade with a complete handle section. The blade is extremely wide as is the handle area, and no pin holes on the latter are present. No marks are present.

Variety b Straight blade back with tapered point

Figure 57B,C,D

35 specimens

Length range 17.6 cm.-24.0 cm. (estimated), width range 1.9 cm.-2.8 cm.

Figure 57 Knives

Figure Designation	Taxonomic Designation
A	CII, G1, T2, Va
B	Vb
C	Vb
D	Vb
E	T3, Va
F	Vb
G	G2, T1

These examples exhibit a straight, slightly tapering blade back and a blade edge which tapers at the tip. The handle shaft is a projection of the blade back and has two or three pin holes for attachment to the handle. Thirteen specimens exhibit maker's marks. They are:

Maker's Mark #1	(crown)
2 specimens	L + C
	DORON

A similar example was found at Michilimackinac (See Figure 166BB).

Maker's Mark #2	A
1 specimen	-----
	-WER

Maker's Mark #3	(crown)
2 specimens	I
	ROYEI

Maker's Mark #4	(crown)
1 specimen	(goblet)
	-- (N)

Maker's Mark #5	(crown)
3 specimens	(inverted goblet)
	DORON

This mark has also been reported by Stone from Michilimackinac (see Figure 166Z) although the crown was not described. This mark and the previous one may also be of the same maker, with the variance in goblet orientation a mistake.

Maker's Mark #6	CLAUDE
1 specimen	-IRODTE

Maker's Mark #7	(feather like B-(N)IR
1 specimen	motif) (O)DISR

A similarly marked specimen has been reported from Michilimackinac (see Stone 1974: 275, Figure 166CC).

Maker's Mark #8	AN(W)DE
1 specimen	-WER

Maker's Mark #9	----
1 specimen	-EAD

Type 3 Flat handle shaft with bolsters addedVariety a "Table Knife" shape

Figure 57E

3 specimens

Length 22.0 cm., width 1.7 cm.

These examples exhibit rounded points, bolsters, and slightly convex blade backs and edges. These specimens appear quite similar to modern day table knives. One complete specimen has remnants of a bone handle still attached to the handle area. None exhibit maker's marks.

Variety b Tapered blade shape

Figure 57F

2 specimens

Length

These examples exhibit long, tapering points and bolster pads between the blade and the handle. One specimen is marked with a rectangular indentation.

Comments: An additional fourteen fragments can be assigned to Class II Group 1, but lack diagnostic characteristics for assignment beyond the group level.

Group 2 HandlesType 1 Cylindrical-reutilized

Figures 57G, 26A

2 specimens

Handle lengths 9.0-11.2 cm.

Only two specimens exhibit any form of unattached handles. These examples consist of iron tubes filled with wood into which CII G1 T2 Va blades have been implanted. The iron tubes could possibly be portions of a musket barrel broken and reused for this purpose.

Type 2 Rectangular bone

Not illustrated

1 specimen

Handle length 8.1 cm.

This single specimen is rectangular in shape with rounded edges. Inserted in it is a CII G1 T1 Va blade.

LOCKS

A total of sixteen complete locks, and seven lock fragments are present in the Fort St. Joseph collections. These locks consist of both hasp and door lock mechanisms in various degrees of preservation. Hasp locks were used primarily on objects with movable lids such as trunks and chests, although they could also have been used on door and gates (Stone 1974: 195). These locks contained two separate functional pieces--the strap-like hasp, and the actual lock mechanism. Only one hasp is in the collection while fifteen hasp lock mechanisms are present. The one hasp is similar to a specimen found at Michilimackinac (Stone 1974: 201, Figure 116D) and is composed of a hinge and teardrop strap from which the ring protrudes. The hasp locks from St. Joseph are remarkably similar to specimens found at Michilimackinac which were found most commonly in contexts dating 1755 to 1780 (Stone 1974: 199).

One door lock is also present in the collection. It is a rim lock with a single keyhole and would have been operated from only one direction. The classification of locks is based upon function and overall shape.

Class I Hasp locksType A Rectangular shaped

Figure 58A,B,D

13 specimens

These examples exhibit a flat rectangular shaped main plate. Three specimens have serrated sides. All the locks have split bolts and are spring operated. Length range 5.5-7.3 cm., width range 4.0-6.0 cm.

Type B Shield shaped

Figure 58E,F

2 specimens

These examples exhibit a flat escutcheon shaped main plate. Both specimens have complete cover plates which fully enclose the lock mechanism. Stone (1974: 197-198) presents further description of an identical lock. The specimens at Michilimackinac and at Fort St. Joseph so greatly resemble one another in size and pattern that there is a good possibility that all specimens were part of one original shipment of locks. Length 7.0 cm., width 8.0 cm.

Class II Door locksType A Rectangular shaped rim lock

Figure 58C

1 specimen

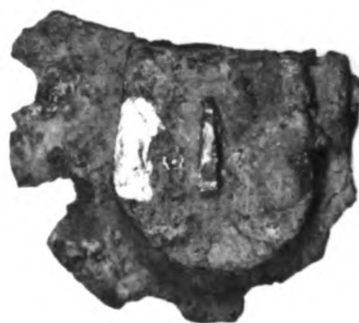
Only one specimen of a stock lock is present in the collection at Niles. This example exhibits a rectangular shaped main plate and a smaller iron cover plate. Length 7.0 cm., width 6.5 cm.

An additional seven lock fragments are present, but cannot be placed into the classification due to their fragmentary condition. These specimens consist of cover plate, spring, and ward fragments.

The similarity of many of these hasp locks to those found at Michilimackinac suggests supply from the same source. The frequencies of hasp locks from both

Figure 58 Locks

Figure Designation	Taxonomic Designation
A	CI, TA
B	TA
C	CII, TA
D	CI, TA
E	CI, TB
F	TB

**A****B****C****D****E****F**

sites in comparison to door locks may also point towards the use of trunks or chests for storage or shipping of supplies. One hasp lock is reported from the Gros Cap Cemetery Site (Nern and Cleland 1974: 4) in St. Ignace, Michigan.

MOUTH HARPS

Mouth harps are small musical instruments held against the teeth and played with a rhythmic motion. These harps are composed of two metal elements--a brass or iron frame, and an iron vibrator which is attached to the frame at the head section. Of the eleven harp frames found at Fort St. Joseph, only two are composed of iron. Based upon contextual data, Stone (1974: 145) suggests that brass harps found at Michilimackinac may occur earlier than do the iron specimens, although he notes that both were in use during the 1760-1780 occupational period. Stone also notes that the extremely large number of harps (122 pieces) recovered from Michilimackinac was unusual in that only a few specimens are noted from a total of 14 comparative sites. The eleven specimens found at Fort St. Joseph are therefore small in comparison to Michilimackinac, but large when generally compared to historic sites in North America.

The harp sample from St. Joseph is classified based upon head shape and material of manufacture. Those specimens which are composed of brass have been cast in a

mold and smoothed by filing. On the other hand, the two iron specimens appear to have been hand forged.

Class I Triangular shaped head

Type 1 Iron

Figure 59A

1 specimen

This example exhibits a triangular shaped head and parallel shanks.

Length 5.5 cm., width 4.0 cm.

Type 2 Brass

Figure 59B

1 specimen

This example exhibits a triangular shaped head. One shank has been broken-off and the other shank distorted from its original position through outward bending.

Stone (1974: 142) pictures an identical example of a distorted harp in his discussion of jews harps.

Although this deformation may be coincidental, there may be a chance that these jews harps were intentionally modified to form some other function. File marks are present.

Length 5.2 cm. (estimated), width 2.8 cm.

Class II Rounded head

Type 1 Iron

Figure 59C

1 specimen

This example exhibits a rounded head and parallel shanks, with oval and square cross sections respectively.

Length 6.5 cm., width 3.4 cm.

Type 2 Brass

Figure 59D,E,F,G,H,I

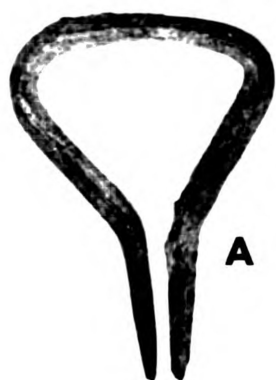
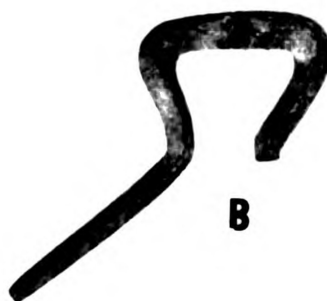
8 specimens

These examples, as with CI, T1 and T2 specimens, are square in cross section. The shanks taper downward from the head and are not parallel. File marks are present. Two size categories are clearly distinguishable, and are listed below as (1) and (2) respectively.

(1) Length 5.7-4.7 cm., width 2.3-2.5 cm.	6 specimens
(2) Length 2.8 cm., width 1.4 cm.	2 specimens

Figure 59 Mouth Harps

Figure Designation	Taxonomic Designation
A	CI, T1
B	CI, T2
C	CII, T1
D-I	CII, T2

**A****B****C****D****E****F****G****H****I**

MUSKET BALLS AND SHOT

A total of 238 musket balls and approximately 1400 pieces of buck shot are present in the Fort St. Joseph collection in Niles. The musket balls and shot range from .1135-.6965 in caliber, with those balls between .30 and .38 caliber being either large buck shot or small rifle balls. The following list provides an inventory of the 192 specimens over .30 caliber which were measurable.

<u>Caliber Size</u>	<u>#</u>	<u>Caliber Size</u>	<u>#</u>	<u>Caliber Size</u>	<u>#</u>
.30	5	.44	2	.58	8
.31	1	.45	0	.59	12
.32	2	.46	0	.60	8
.33	2	.47	0	.61	5
.34	3	.48	1	.62	0
.35	8	.49	0	.63	1
.36	4	.50	8	.64	0
.37	4	.51	10	.65	0
.38	2	.52	12	.66	1
.39	1	.53	7	.67	0
.40	1	.54	20	.68	0
.41	0	.55	23	.69	2
.42	0	.56	26	.70	0
.43	3	.57	10		

It can be seen from this list that the great majority, 74 percent, of balls fall into the .50 to .60 range, with the highest frequencies at .54, .55, .56. The .53 to .59 caliber range encompasses 55 percent of the total, and this can be compared to Fort Michilimackinac and the

Guebert Site where this same span yielded 68 percent and 60 percent of the population respectively (Good 1972: 148; Hamilton 1976: 33). Since French military weapons were .69 caliber and larger, and British ones ranged from .75 to .80, a military component cannot account for the large number of specimens in the middle .50s range. Rather, these .53 to .59 balls were probably used in trade muskets throughout the eighteenth and early portions of the nineteenth centuries (Good 1972: 150). Hamilton (1976: 6) further qualifies this and states that .57 and .59 calibers were standard for French trade guns. He also mentions that barrels in British contexts have been found to range from .53 to .59.

An estimation of the patch size is essential in determining which caliber of ball could be used from specific weapons. Hamilton (1960: 53) suggests that a patch .02 in size would have been used, while regular military personnel may have used paper cartridges with balls .05 to .10 smaller than bore size (Neumann 1967: 53). Local civilian and aboriginal populations in and around Fort St. Joseph would have probably used a plain cloth or leather patch, so those musket balls of the middle range would have been fired from .55 to .60 caliber weapons. In addition, the sizes of balls above .59 (17 specimens) could have come from military weapons in the .69 to .75 caliber range and could have been either French or British.

This is assuming that cartridges would have been with those specimens under about .65 caliber.

Those specimens which are under .50 caliber are unusual in that they probably did not come from muskets, but rather were made for smaller fusils, pistols or perhaps rifles. The possibility also exists that many balls in the smaller ranges were designed for use as buckshot. As previously mentioned, the .38 caliber and less would have fallen into this category.

The fact that shot and balls were being cast at the site is evident with the presence of sprue scraps. Ten sprue ribbons are present in the collections and represent both small buckshot and larger balls. Several other phenomena should be mentioned in relation to shot, one of which is the presence of balls which have been "chewed." A total of thirty-three chewed specimens are present, twelve of which were measured and found to be primarily of the .53 to .59 caliber range. The balls were chewed in order to create a tearing wound on the unfortunate victim.

Reutilized musket balls have also been found at the site in the form of whizzers and weights. Two specimens which had been flattened were perforated with two holes, and probably had been used as whizzers, similar to the still popular button and string toy still in use today. Fifteen other specimens had been similarly flattened, but were perforated with a single hole. These

specimens could have been employed as weights for fishing nets and lines, or possibly as beads.

NAILS

A total of 1,505 iron nails are present in the Fort St. Joseph collections, 109 of which are point fragments and therefore unidentified. The classification of the remaining 1400 specimens is based upon variations in nail head shape and shaft shape.

Type 1 Rose head

The rose head nail is the classic nail type found on eighteenth century sites. The name is derived from the presence of numerous (usually 4 to 8) facets radiating outward from the center which are caused by hammer blows during the production process. The stylized rose head nail is convexly rounded or even pointed at the apex, and is round when viewed from the top. At Fort St. Joseph, the rose head type comprises 94 percent of the total number of nails. This type, however, varies considerably in the degree to which the ideal form is approximated. Only about 10 percent of the Type 1 specimens actually have "perfect" multi-faceted heads. The majority of the specimens, on the other hand, are crudely flattened by numerous hammer blows and are often misshapened and off center. This phenomena may be due to production by inexperienced local craftsmen, by rapid production, or by reuse over a period of time. High corrosion and oxidation may also be a factor by disguising such features as faceting or head shape. Since a blacksmith is known to have worked at the fort, the majority of nails were probably locally made. In addition, approximately 15 percent of the nail sample show discoloration due to burning. These nails could have been burned at the time of the fort's destruction, or as a method of nail reclamation from unwanted timber.

Two varieties of rose head nails can be distinguished due to differences in shank taper and point.

Variety a Pointed shank end

Figure 60A-H, J-O

1,317 specimens

All but one rose head nail falls into this variety. This variety consists of specimens which exhibit shanks which are square to rectangular in cross section and which taper on all four sides to a sharp point. Within this group are ten nails which exhibit exceptionally large heads for shank size (Figure 60J-O). In general, these specimens have shank to head ratios of 2.5 to 1.0 or less. These heads are also more flattened than the average rose head, which may point towards a different functional use. The length of these nails vary from 1.6 to 4.5 cm., while the entire Variety 'a' sample ranges from 1.6 to 18.2 cm. The majority of the sample is within 6 to 11 cm. in length.

Variety b Flattened shank end

Figure 60I

1 specimen

This specimen is square in cross section near the nail's head, but rectangular nearer the point. This change in shape is due to the fact that two parallel sides taper sharply to the point while the other two sides taper very little. The point therefore ends in a wide chisel-like point unlike the sharply tapered point of Variety 'a' specimens. Length 7.4 cm.

Type 2 L-shaped head

Figure 60P-S

9 specimens

The nails exhibit a rectangularly shaped head which is bent or offset to form a ninety degree angle with the shank. With this head shape, three sides are held even with the shank size while one side is elongated or extended. All points taper to a sharp square point. Length range 4.9 to 13.6 cm.

Type 3 T-shaped head

Figure 61A-D

8 specimens

As the name implies, the head of the nail forms a T with the nail shaft. Type 3 specimens exhibit heads which are rectangular from a top view, and which vary in thickness proportionately to the shaft size. All specimens are square to rectangular in cross section and taper to a sharp point. Length range 5.0 to 12.2 cm.

Figure 60 Nails

Figure Designation	Taxonomic Designation
A-H	Type 1, Va
I	Vb
J-O	Type 1, Va (large-headed)
P-S	Type 2

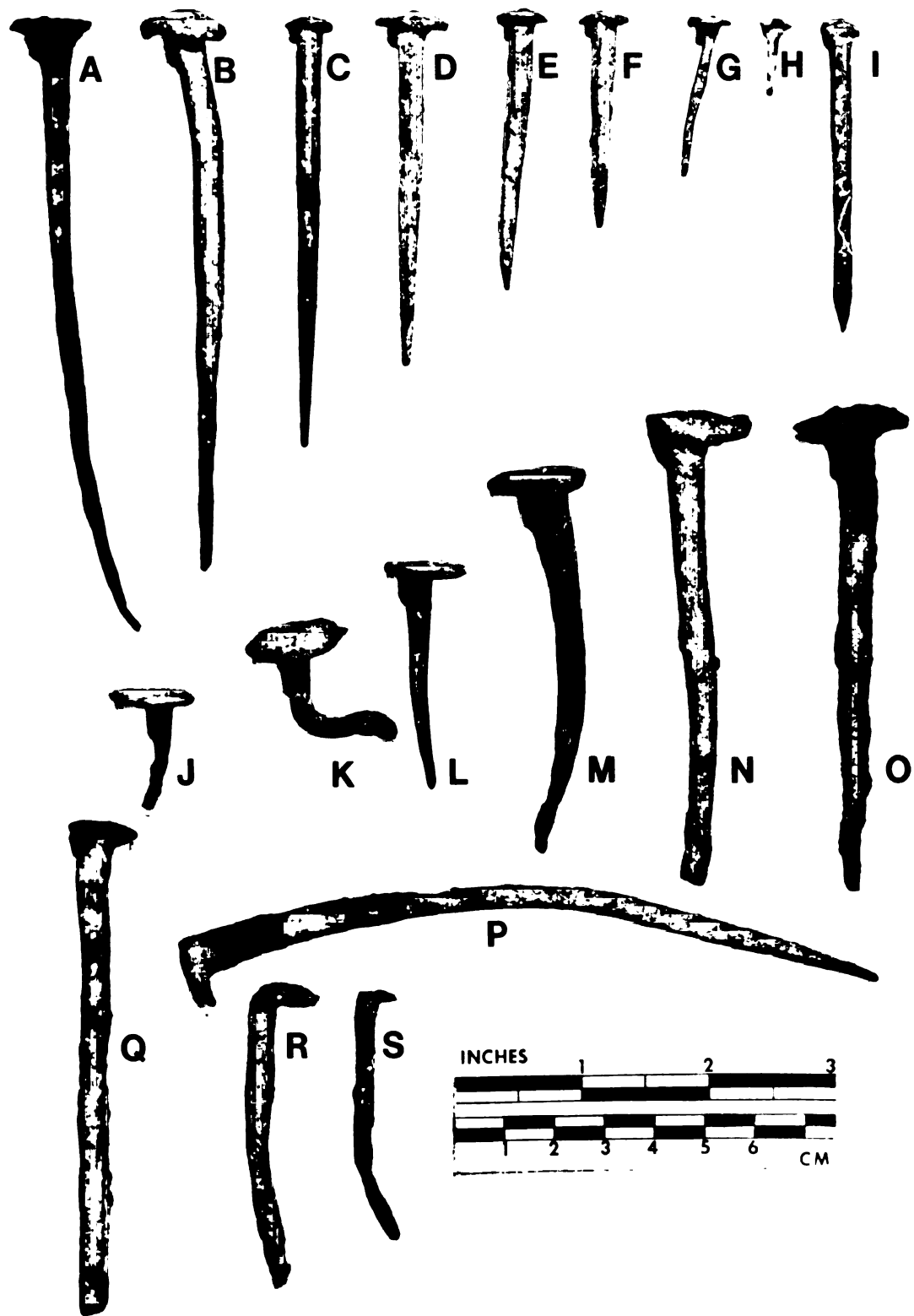


Figure 61 Nails

Figure Designation	Taxonomic Designation
A-D	Type 3
E-G	Type 4
H-K	Type 6
L-N	Type 5, Va
O-P	Vb

Type 4 Square-shaped head

Figure 61E-G

4 specimens

These nails exhibit heads which are extremely large and thick, and which are square when viewed from the top. The shanks of these specimens are also quite thick, and although broken may have been quite long. One specimen is, however, only 7 cm. in length and although fragmentary appears to end in a chisel-shaped flat point.

Type 5 Rectangular-shaped head

These specimens exhibit a head which is thick, rectangular in shape, and flat on the top surface. The shank to head ratio is also quite large and the shank cross sections are markedly rectangular. Similar to the case head nails, these specimens may be classified into two varieties based upon shank taper and point.

Variety a Pointed shank end

Figure 61L-M

7 specimens

These nails taper on all four sides into a sharp pointed end.

Length range 9.5-11.0 cm.

Variety b Flattened shank end

Figure 61 O,P

10 specimens

These specimens taper greater on two of the four sides, and the shank end is flat and with either a slightly rounded or diesel-shaped tip.

Length range 3.2-11.2 cm.

Type 6 Headless

Figure 61H-K

18 specimens

These nails exhibit no heads and consist only of a tapered nail shaft. The head end of these specimens appear flat and smooth and are slightly compressed through use. All nails are square and rectangular in cross section and taper towards a pointed end. Length range 3.7-13.5 cm.

The nail types found in the Fort St. Joseph sample are very similar to those reported from Michilimackinac.

Although frequencies of nail types were not reported from Fort Michilimackinac, Stone (1974: 231) states that rose head nails with pointed, tapering ends comprised "between 90 and 95 percent of the nail collection." This can be compared to the 94 percent from Fort St. Joseph. In addition, the L-shaped and T-shaped nails were present from both sites, as were rose head nails with large heads and short shanks. The only difference between the samples at the sites were the presence of square and rectangular types at St. Joseph, and the fact that the Michilimackinac sample was a great deal larger.

NEEDLES

Eight iron needles are present in the Fort St. Joseph collections. These needles were probably items used in leather working, fishing net construction, and other repair activities. Needles found at Michilimackinac were recovered in French contexts and were suggested to date from the latter part of the eighteenth century (Stone 1974: 161). The fact that French inhabitants at Michilimackinac were more dependent upon fishing as a food resource than were their British successors (Cleland 1970: 17) suggests that net-making activities would have been predominant during the French period. If, indeed, these needles were used in fishing activities at Michilimackinac, they probably would have served a similar function at St. Joseph.

The needles from Fort St. Joseph are classified upon point and eye-hole shape. While brass and bone needles were also recovered from Michilimackinac, no such needles have been found at St. Joseph.

Class I Triangular pointType 1 Rectangular eye hole

Figure 62B,C,D,E

5 specimens

Lengths 18 cm., 15.5 cm., 13.2 cm., 11.2 cm., 12.0 cm. These specimens are constructed of iron. Near the eye the shaft is round, however approximately halfway to the point the shaft becomes three sided. The thickest part of these needles is the middle area where the change from round to triangular takes place. From that area the shaft tapers to a sharp point. The eye holes of these examples are rectangular slits varying in length from 1.8 cm. to 1.2 cm.

Type 2 Round eye hole

Figure 62A

1 specimen

Length 9 cm.

This specimen is identical to T1 examples except that it exhibits an eye hole which is round to oval in shape. It is the shortest needle in the collection.

Class II Diamond shape pointType 1 Rectangular eye hole

Figure 62F

1 specimen

Length 15.3 cm.

This specimen is round from the eyehole to the midpoint. It then changes into a flattened four sided point which is diamond shape in cross section. The point is broadest at the midsection and tapers to a fine point. The eyehole is a rectangular slit.

Class III Flattened pointType 1 Round eye hole

Figure 62G

1 specimen

Length 16.2 cm.

This specimen has a round shaft from the eyehole four fifths the distance to the point. It then flattens and broadens to a width of 1.5 cm. The broadest point is reached at the midpoint of the flattened area. From that area the tip tapers to a blunt point.

Figure 62 Needles

Figure Designation	Taxonomic Designation
A	CI, T2
B-E	T1
F	CII, T1
G	CIII, T1

PINS

Straight pins were a common item of trade and have been found in large quantities at such sites as Fort Michilimackinac and Fort Ouiatenon. The pins are usually composed of brass and exhibit ball-like heads which have been produced by coiling. At Fort St. Joseph, 37 pins were collected which range in size from 24 to 42 mm. with a mean of about 31 mm. All the pins are brass and about half show some trace of silver or pewter plating. Although pins are not good chronological indicators, they represent another category of trade goods which flowed into the area during the time of occupation. Remembering that Fort St. Joseph artifacts are all specimens which were primarily surface collected, the fact that small items such as pins were not overlooked attests to the thoroughness of the search.

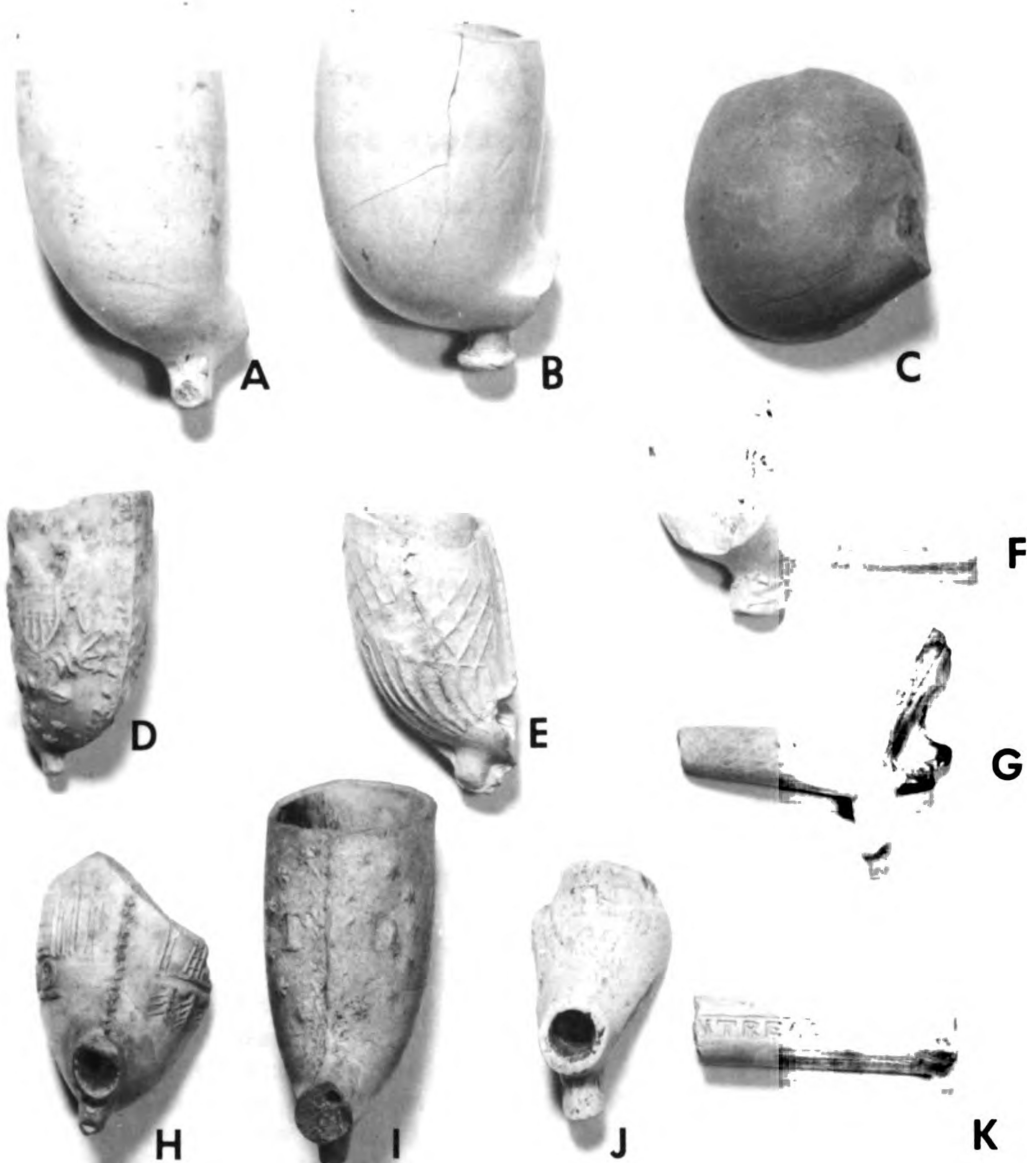
PIPES (KAOLIN)

A total of thirty-four Kaolin pipe fragments are present in the collections of the Fort St. Joseph Museum. This is an extremely small number in relation to other sites, and may indicate a lack of use at the site, or bias during the collection process. Of this total, sixteen are pipe stems, only one of which is marked or decorated. This specimen, although broken along the mark displays the block letters HENDER--- (Henderson) on one side, and NTREAL (Montreal) on the reverse side (Figure 63K). Although numerous formulaes for the dating of pipe stems based on bore diameter have been proposed in recent years (Binford 1962; Heighon and Deagam 1971; Harrington 1954), all methods are dependent upon large sample sizes and are not applicable to the sample from Fort St. Joseph.

The remaining eighteen fragments consist of five stem/bowl elbow fragments and thirteen bowls and bowl fragments. Elbow fragments are those specimens which contain a portion of the pipe stem as well as the rear portion of the bowl. Since these fragments often lack in diagnostic attributes conducive to grouping, they will

Figure 63 Pipes (Kaolin)

Figure Designation	Taxonomic Designation
A	CII, GA, T1, Vb
B	CI, GA, T1
C	GB, T2
D	CIII, GA, T1
E	T3
F	CII, GA, T2
G	CI, GA, reworked
H	CIII, GA, T2
I	CII, GA, T1, Vc
J	Va
K	Stem fragment



examples. Numerous other specimens from Michilimackinac have been observed but never commented upon in the literature.

All five of the elbow fragments from Fort St. Joseph have spurs which are round to oval in cross section, one of which is marked with a W and G on the left and right sides respectively. This specimen is also one of those reworked examples previously discussed. In addition, one elbow fragment contains a portion of bowl which has been decorated with a series of raised vertical lines, a type of decorative motif common in the late eighteenth and early nineteenth centuries.

The thirteen bowls and bowl fragments can be classified as follows:

Class I Plain (undecorated, unmarked) bowls

Group A Presence of spurs on bowl

Type 1 Footed spur

Figure 63B

1 specimen

This specimen has a large plain complete bowl measuring 3.93 cm. in height and 2.95 cm. in diameter. The spur is round to oval in cross section and consists of a straight shaft with a flared foot on the distal end.

Group B Spurs not present

Type 1

Not illustrated

1 specimen

Height 3.51 cm., diameter 2.53 cm.

Type 2

Figure 63C

1 specimen

This bowl fragment is composed of a fine red clay. In general form it is short and rounded and suggests a date in the early nineteenth century. Height 3.15 cm., diameter 3.10 cm. (estimated)

Class II Marked bowlsGroup A Presence of spursType 1 "TD" markVariety a Variant #1

Figure 63J

2 specimens

These specimens exhibit an incised TD stamp in a round cartouche. Similarly marked specimens found at Fort Michilimackinac were assigned a post 1750 date, and were interpreted as being of English manufacture with both French and English use (Stone 1974: 149). Both spurs are round to oval with one specimen having a raised T and D on the left and right sides respectively. That same specimen is also interesting in that it has been reworked at the stem area of the bowl to permit a stem to be inserted into it. This was accomplished through the expansion of the stem hole to 6 mm. in diameter.

Variety b Variant #2

Figure 63A

1 specimen

This specimen exhibits a raised T D on the back of the bowl with the letters on opposite sides of the mold seam. The spur is round and unmarked.

Height 4.08 cm., diameter 2.51 cm.

Variety c Variant #3

Figure 63I

1 specimen

This specimen exhibits a raised TD mark on the back of the bowl which is surrounded by thirteen stars. The front mold seam has a leaf

pattern running from it which extends from the lip to the round unmarked spur. This pattern of TD design is common of marks used during the early to middle nineteenth century. Bowl height 3.85 cm., bowl diameter 2.38 cm.

Variety d Variant #4

Not illustrated

2 specimens

These specimens exhibit an incised TD and the bowl back. Both have round unmarked spurs. Bowl height 4.38 cm., bowl diameter 2.70 cm.

Type 2 "WG" mark

Figure 63F

1 specimen

This bowl fragment exhibits a partial "WG" mark which is incised and enclosed within a round cartouche. Similar examples found at Michilimackinac exhibit oval spurs usually marked with WG on the sides. As previously mentioned, one elbow fragment with such a marked spur is also put in the sample.

Class III Decorated bowls

Group A Presence of spurs

Type 1 American eagle motif

Figure 63D

1 specimen

This specimen is highly decorated having a raised pattern consisting of an American eagle on both right and left sides which is surrounded by thirteen stars. Half of the stars are arranged in a semi-circular pattern above the eagle, while the remainder are clustered in a group below. Both front and back seams are decorated with a leaf pattern. The eagle is long necked and has its wings semi-spread and its head facing left, while a striped shield composes its breast. In the eagle's claws is held an olive branch in the left and the arrows in the right. The spur is extremely small and unmarked. The general form of the motif points towards an early nineteenth century date extending perhaps to mid-19th century. Bowl height 3.10 cm., bowl diameter 2.03 cm.

Type 2 Wagon motif

Figure 63H

1 specimen

This specimen is unfortunately fragmentary and consists of the rear and side sections of the bowl. The left side is decorated with a box-like wagon with a stick figure person to its right. The right bowl side appears to depict a house, however very little remains. The rear seam is beaded and most probably extends from the lip to the stem. The spur is oval and unmarked.

Type 3 Hatched motif

Figure 63E

1 specimen

This specimen exhibits a hatched pattern of raised lines over the upper half of the bowl, while the lower half consists of a series of vertical lines extending from the midline to the plain unmarked spur.

Bowl height 3.20 cm., bowl diameter 2.00 cm.

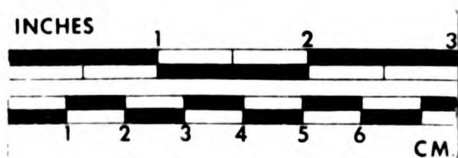
The low frequency of clay pipes from Fort St. Joseph, in comparison to the number of stone pipes found at the site, suggests a preference for stone over clay. Since reworking was found in the sample, clay pipes appear to have been limited in supply thereby necessitating the use of more durable and easily obtainable stone pipes. The fact that some clay pipes are similar to those used during the early nineteenth century suggests occupation of the site during the post 1781 period.

PIPE (PEWTER)

This specimen (Figure 64B) was found on the west side of the St. Joseph River in a grave containing other trade items such as a pewter porringer, glass ball or marble, and a porcelain doll (see page 445). This pipe is pewter and is T-shaped with the bowl protruding from the center of the platform. The end of the pipe is tapered and beveled while the mouthpiece end is square and set with a ring on the upper face. The bowl is conical and sits 3.0 cm. above the base. Although this specimen is poorly preserved, no evidence of either cast or incised decoration is indicated. Overall length: 11.5 cm.

Metallic pipes and pipe fragments are reported from the Lasanen Site (Cleland 1971: 86) and Jamestown (Cotter 1958: 192), and are quite rare.

Figure 64 Pewter Porringer (A) and Pewter Pipe (B)

**A****B**

PIPES (STONE)

A total of one hundred and nineteen stone pipes and pipe fragments are present in the Fort St. Joseph collections in Niles, Michigan and South Bend, Indiana, only four of which are complete specimens. The subject of stone pipes from historically documented sites has been generally neglected in the literature, and as a result we know little of their origins or chronology. Although commonly thought to be exclusively of aboriginal manufacture, studies of the incompleated pipes recovered from Fort Michilimackinac indicate deposition in predominantly European areas of the Fort, indicating possible production of these objects by white as well as aboriginal populations (Armour 1966: 4).

At Fort St. Joseph numerous specimens were found which were either broken or discarded during the manufacture process. Due to the lack of controlled provenience of the Fort St. Joseph artifacts it is impossible to determine whether these pipes were being manufactured by Indians or Europeans using stone tools. Putting that matter aside, it is however possible to infer the stages of pipe production which can be drawn from the incompleated specimens.

These five stages are: (1) the general form of the pipe was roughed out of stone through cutting and chipping, (2) the shape was refined by some grinding but not to the polished state, (3) the pipe bowl was drilled and reamed out, (4) the stem hole was drilled, and (5) the pipe was polished and decorative embellishments added. The third and fourth stages were undoubtedly the most difficult to execute and at that stage the largest percentage of breakage occurred.

Various kinds of stone were used as the raw material for pipe manufacture. Although limestone was the predominant type accounting for eighty-nine of the one hundred and nineteen total specimens, other materials such as catlinite (21 specimens), sandstone (5 specimens), serpentine (1 specimen), and soapstone (3 specimens) were utilized to a lesser extent. On a comparative basis, those pipes of various overall forms which were carved from catlinite were more highly embellished with drilled or incised decoration than were their counterparts. This was probably due to the softness of catlinite and the ease of workability of that material. Approximately 10 percent of the limestone fragments also exhibit some form of embellishment while the serpentine, sandstone, and soapstone specimens are for the most part void of decoration.

The pipes and pipe fragments from Fort St. Joseph are found in both familiar and unusual forms, the latter

of which are difficult to classify and will be grouped under the heading "Miscellaneous Form." Those pipes which are common to the literature are designated as "Micmac" or "Vase-shaped" and fall under the classification of reed stem pipes.

Class I · Reed stem pipes

These pipes require the addition of a hollow stem in order to be smoked. They therefore consist only of a stone bowl or base.

Group A Micmac style

Figure 65A,B,C,D,E,K,M

71 specimens

These pipes are characterized by the presence of an inverted acorn-shaped bowl attached to a base by a narrow neck (West 1937: 227). These specimens may have a variety of basal shapes either cylindrical, round, square, or keel-shaped, and often display a drilled hole through which a thong, cord, or ornamental decoration can be attached.

Only one complete Group A pipe is present in the collections (Figure A) and exhibits a keel-shaped base. It is composed of finely grained sandstone. In addition to this specimen, seventy bowl and base fragments are also present in the sample. Of these fragments, sixty-five are limestone, three are Catlinite, and two are sandstone. Two bowl fragments are octagonal in cross section and are decorated heavily with incised geometric patterns (Figure D) while nine other specimens exhibit some form of embellishment. All the fragments which exhibit decoration are made from limestone. Micmac style pipes have also been reported from Fort Michilimackinac, Fort Ouiatenon, the Fletcher Site, and the Guebert Site.

Group B Short elbow (L-shaped) style

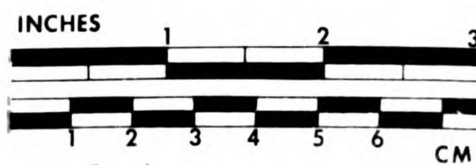
Figures 65G,H,I,L

7 specimens

These pipes are characterized by straight sided or flared bowls which are set to the end of a rectangular-shaped base. Similar to Micmac pipes, these specimens exhibit a basal ridge on the bottom of the pipe into which a hole has been drilled. The hole for a hollow

Figure 65 Stone Pipes

Figure Designation	Taxonomic Designation
A-F	CI, GA
G-I	GB
J	GD
K	GA
L	GB
M	GA

**A****B****C****D****E****F****G****H****I****J****K****L**

stem is drilled lengthwise through the base until its juncture with the bowl shaft. A total of seven bowl fragments are present in the Fort St. Joseph collections, all of which are made from limestone. Similar pipes have been reported from Fort Ouiatenon near Lafayette, Indiana (Tordoff 1977).

Group C Vase shape style

Figure 66I,J,L

3 specimens

These complete pipes exhibit an overall shape which is conical or vase shaped. They are quite simple in form and have a drilled central bowl intersected from the side by a stem hole. Two of the pipes (Figures I, G) are sandstone, while the third is composed of chalky limestone. No fragments of this type are present in the collection, and the general style is probably much less subject to breakage than are the Group A and B pipes. Vase shaped pipes are found on late woodland sites of the Great Lakes and Midwest regions, as well as at historic sites. The two sandstone specimens of this style are decorated with incised lines running the length or circumference of the bowl while the third specimen is undecorated. Vase shaped pipes are reported also from the Guebert Site in southern Illinois (Good 1972: 73-77).

Group D Long elbow (L-shaped) style

Figure 66C,H

3 specimens

Only fragments comprise this group of pipes. This style consists of a long cylindrical base onto which a tall conical bowl is set. Two fragments from St. Joseph are carved from catlinite and one (Figure H) is deeply channeled probably for the addition of a lead inlay. This pipe style has been recovered from the Fletcher Site in northern Michigan. One limestone specimen (Figure J) may represent a fragment of the cylindrical base.

Class II Miscellaneous Form Carved Stem Pipes

These pipes, unlike Class I specimens, do not require the addition of a reed stem since the stem has been incorporated into the carved design.

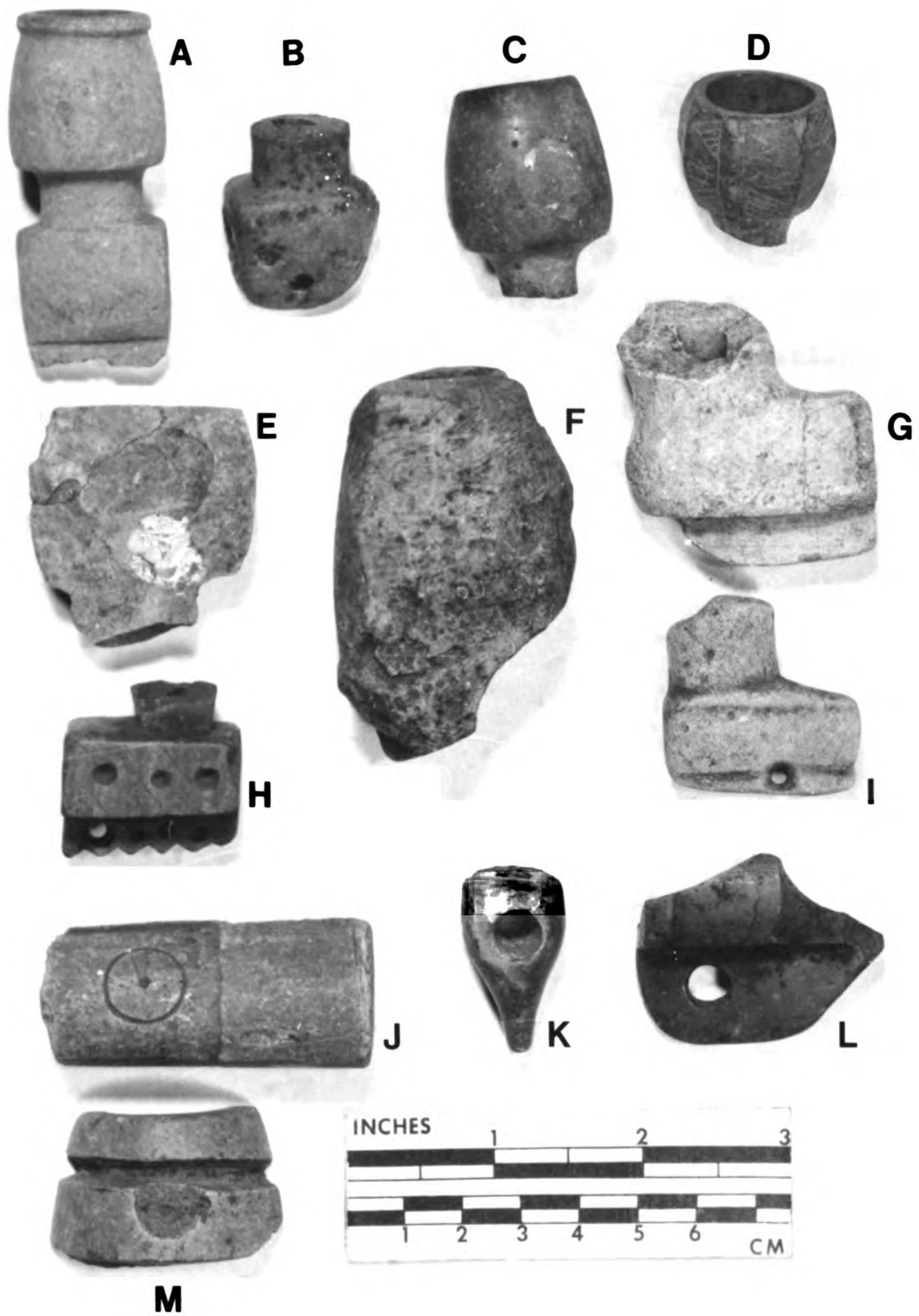
Group A Long elbow style

Figure 66D,E

2 specimens

Figure 66 Stone Pipes

Figure Designation	Taxonomic Designation
A	CI, GA
B	GA
C	GD
D	CII, GA
E	GA
F	Miscellaneous
G	Miscellaneous
H	CI, GD
I	GC
J	GC
K	Miscellaneous
L	CI, GC



These pipes consist of a long cylindrical base and a short round bowl which is located at the far end of the pipe. Only two specimens from Fort St. Joseph characterized this pipe style, and both are composed of catlinite. These specimens are highly embellished with drilled holes and incised geometric patterns. The end of the long cylindrical body serves as a pipe stem so that no additional stem is required.

Stone Pipe Discussion.--An additional three pipe fragments are present in the collections. These specimens cannot be placed into the existing types due to their fragmentary nature. Of this total, sixteen are catlinite--many of which are highly carved such as Figures F and G, but which are not classifiable. The remaining specimens are limestone (15) and soapstone (2) (Figure 66K).

PIPE TOMAHAWK

Introduced to North America shortly after 1700, the pipe tomahawk gained widespread acceptance by 1750 (Neumann 1973: 257). The combined need for a durable pipe as well as a functional tool and weapon made the pipe tomahawk indispensable to Indian, frontiersman, and soldier alike. The blade of most tomahawks were shaped in the typical trade axe style common on belt axes of the period. These specimens exhibited round polls, straight tops, and curving bottom edges. An inverted acorn-shaped bowl similar to the stylized micmac was added to the rear of the poll. Handles were split and grooved or drilled to form long pipe stems, and were often fitted with a metal mouthpiece. At the NIHS museum in South Bend, one pipe tomahawk is present in the Fort St. Joseph collections. This example (Figure 67) is quite long, extending 22.5 cm. (8") from bowl to blade, and with a blade width of 6.4 cm. The entire head is iron and has no inset steel blade tip as was common on many specimens. In addition, the poll is built up on the bowl end of the poll, slightly squaring it off. A ridged bowl and neck add slight decorative qualities to the specimen.

Figure 67 Pipe Tomahawk



The pipe tomahawk from Fort St. Joseph is very typical of the 1740-1800 time period and was an item of trade or personal use. Neumann (1973: 251) states that most pipe tomahawks "appear to have been supplied by the English and Americans." Remembering that the British did not arrive at the St. Joseph post until 1761, the time period of this specimen may be further refined to a 1760-1800 date.

PIPE ACCESSORIES

"Smokers Companion" or fire tongs

1 specimen

The "smokers companion" was an ingenious little device designed to pick up and hold burning embers while lighting a pipe. Although these tongs varied somewhat, all were quite similar in design having two tong-like ends, two handles (both disc shaped, one being upturned for use as a tamper) with a spring in between, and a pivot point at the center. The upper arm of the companion is normally much thicker and heavier than the lower one, and when viewed separately often resembles a miniature ice skate (Hume 1969: 309), this appearance being partially derived from the flat disc at the handle end. Stone (1974: 204, Plate 119B) illustrates a complete specimen found at Michilimackinac. The single specimen from Fort St. Joseph is quite similar, except that the tongs are curved upwards to a greater extent and terminate in in-turned pincer-like ends. The specimen is 10.5 cm. in length.

Similar specimens are also reported from the Lasanen (Cleland 1971: 20) and the Fletcher Sites (Mainfort n.d.) in Michigan.

PORRINGER

A porringer is a small one or two handled cup or bowl which was used for holding hot beverages or soups. While this object had many other assorted household uses, its function was not strictly limited to domestic domains, and was used also as a "bleeding cup" in medical contexts (Kerfort 1924: 27). The Fort St. Joseph collections contain one pewter porringer of a lead-tin alloy which was recovered from a burial on the west side of the St. Joseph River across from the fort. This grave was probably that of a Miami Indian and contained other goods such as pewter pipe (Figure 64B), small porcelain doll, glass ball or marble, and several bear claws.

The porringer at St. Joseph is 3.3 cm. deep and measures 11.3 cm. in diameter (Figure 64A). The sides of the porringer are rounded and curve inward at the top, while the lip itself has an outward flare. A flat foot approximately 2 cm. wide is present on the bottom with the center pushed in slightly, and the inside of the porringer bowl exhibiting a corresponding bulge and concentric groove. The handle is quite ornate and consists of a filigree surrounding a central shield, the entire length

of which is 1.6 cm. On the underside of the handle's shield is the remnant of a maker's mark; however, due to the pitted condition of the porringer, the content of that mark is not discernible. Stylistic changes in handle size and shape are not well documented in the literature, and handles similar to that on the St. Joseph specimen are found on porringers of British and American origin dating through the eighteenth and early portion of the nineteenth centuries.

PROJECTILE POINTS (METAL)

A total of 110 iron and brass projectile points are present in the Fort St. Joseph collections. This number is quite large in comparison to other sites such as Michilimackinac (Stone 1974: 277), Lasanen Site (Cleland 1971: 22), and the Guebert Site (Good 1972: 67-69) where considerably smaller samples were recovered. At Michilimackinac, a total of 48 points were found and were interpreted by Stone (1974: 277) as being more commonly used during the French 1715-1760 period of occupation.

The high frequency of points found at Fort St. Joseph may have been due to intensive hunting activity due to an isolated geographic location, or to temporal differences in the occupation periods of settlement. The specimens from St. Joseph have been classified based upon material of manufacture and overall form.

Class I Iron

Type A Stemmed

Variety 1

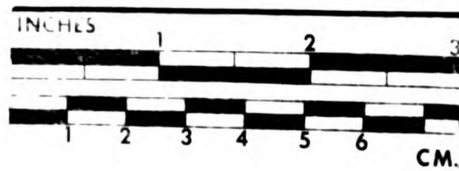
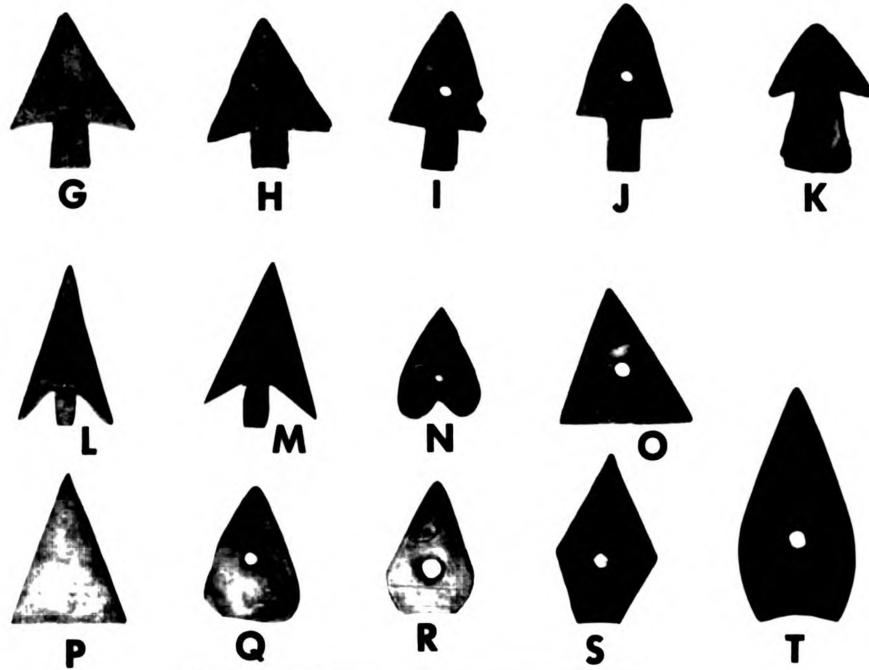
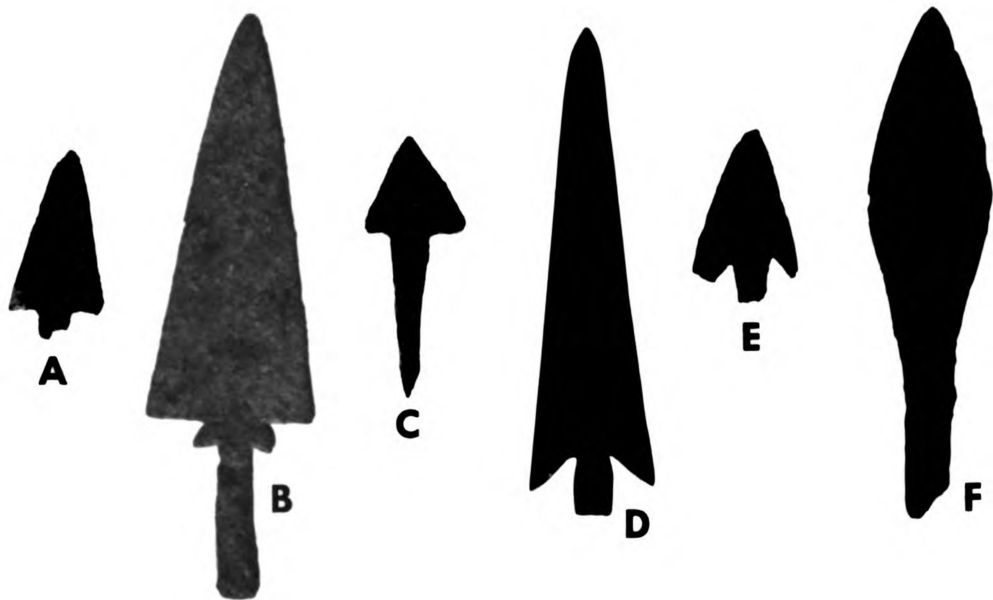
Figure 68A

1 specimen

This example exhibits a triangular head with a stem. The stem has parallel sides and forms a

Figure 68 Projectile Points (Metal)

Figure Designation	Taxonomic Designation
A	CI, TA, V1
B	V2
C	V3
D	TB, V1
E	V2
F	TC
G-J	CII, TA, V1
K	V2
L,M	TB
N	TC
O	TD, V1
P	V2
Q,R	V3



ninety degree angle with the head. Overall length is 3.2 cm., width 1.6 cm.

Variety 2

Figure 68B

1 specimen

This example exhibits a triangular head with long stem and two barbs protruding from the base of the point. The overall length is 9.7 cm. with the stem accounting for 3.0 cm. The width is 2.9 cm.

Variety 3

Figure 68C

1 specimen

This example exhibits a triangular head with a long tapering stem. The stem forms a point on the end and appears to be constructed so that the point may be driven into a wooden shaft. The overall length is 4.2 cm. with the stem accounting for 2.6 cm. of that length. The width is 1.6 cm.

Type B Corner-notched

Variety 1

Figure 68D

1 specimen

This example exhibits a long tapering triangular head with a short stem formed through corner notching. The overall length is 8.0 cm., and the width is 2.0 cm.

Variety 2

Figure 68E

1 specimen

This example exhibits a triangular head with a short stem formed through corner notching. Length measure 2.8 cm., width 1.6 cm.

Type C Tanged

Figure 68F

1 specimen

This example exhibits an elliptic shaped head with a long tapered rear tang. The length is 8.3 cm., width 1.9 cm.

Class II BrassType A StemmedVariety 1

Figure 68G,H,I,J

4 specimens

These examples exhibit a triangular head with a straight sided stem. Three of the four examples have a single hole in the center of the head. The length range is 2.4-2.7 cm., width range 1.4-1.6 cm.

Variety 2

Figure 68K

1 specimen

This example exhibits a triangular head with blunted point, and a long stem which tapers outward from the body. Overall length is 2.8 cm., width 1.7 cm.

Type B Corner-notched

Figures 68L,M

4 specimens

These examples exhibit a triangular head with a stem formed through corner notching. Two examples are deeply corner-notched, two are not. The length range is 2.5-2.7 cm., width range 1.6-2.0 cm.

Type C Heart shaped

Figure 68N

1 specimen

This example exhibits a shape resembling an inverted heart. The base is bifurcated and the sides are rounded. A single hole is present in the center of the head. The length is 1.7 cm., width 1.3 cm.

Type D TriangularVariety 1

Figure 68O

43 specimens

These examples exhibit triangular shaped heads with a single round hole in the center.

Variety 2

Figure 68P

45 specimens

These examples exhibit solid triangular shaped heads.

Variety 3

Figure 68Q,R

4 specimens

These examples exhibit a triangular shaped head with the two lower edges rounded. A single hole is present in the center of the head.

Comments: There is a possibility that Type C and D points may serve other functions other than projectile points. Only approximately 10 percent of these points have been sharpened and varying thicknesses of raw material are present. The specimens constructed of very thin material may have alternate uses such as pendants, earrings, or other forms of ornamentation.

Type E Pentagonal

Figure 68S

1 specimen

This example exhibits five sides, one of which forms the flat base of the head. The apex of two sides form the point. A single round hole is present in the center of the head.

Type F Elliptical

Figure 68T

1 specimen

This example exhibits an elliptical shaped head and a concave base. A single hole is present in the center of the head.

RELIGIOUS MEDALLIONS

A total of fifteen religious medallions are present in the Fort St. Joseph collections. These medals are made of brass or bronze and are found in round, oval and octagonal shapes. The medals were worn by both the European inhabitants at the site, as well as by those Indians who had converted to the Christian faith. Traditionally medals are given as rewards to those who learned their prayers and catechism.

Religious medallions have been reported from numerous historic sites of the seventeenth and eighteenth centuries including Fort Michilimackinac (Stone 1974: 117-122), the Lasanen Site (Cleland 1971: 30), the Guebert Site (Good 1972: 80-81), and the Marquette Mission Site (Stone 1972: 17). Found at these sites of the seventeenth and eighteenth centuries, religious medallions are noticeably absent from contexts dating after about 1750. In addition, no medals were found at the Fletcher Site, a mid-eighteenth century Indian Burial Site in Northern Michigan (Mainfort 1976).

At Fort St. Joseph, the known period of missionary activity lasted from 1687 to 1731. The quantity of medals

found at the site are large in comparison to the above mentioned sites which reported only a few specimens from each. The reason for this high frequency of medallions may be due to the extended time period of mission activity, especially in the years prior to 1700. This contention is supported by the large numbers of early Jesuit Rings found at the site which are thought to pre-date the eighteenth century.

The following description and classification of religious medallions is based upon overall shape, articulation of the ring hole element, and the decorative motif.

Class I Round

Series A Flattened ring element

These specimens exhibit a ring element which appear as a rounded protrusion at the top of the medal through which the hole has been drilled. This top knob is merely a rounded extension of the medal's body. Series A specimens in all classes are made of thin metal into which the design element has been stamped or embossed.

Specimen #1

Figure 69A, 70A

This medal is 24.6 mm. in diameter and is finely detailed on both sides. On one side the Virgin and Child are pictured in a frame surrounded by two angelical figures. At the bottom of that side appear the letters S. M. B. CONS ROMA. This medal was probably produced as a commemorative of the consecration of St. Mary's Basilica in Rome. Built in the fourth century A.D., the Basilica was rebuilt numerous times and served as a place of pilgrimage. This medal commemorates some event, possibly a rebuilding, which took place at the Basilica. On the other side of the medal the Sacred Hearts of Jesus and Mary are pictured with a crown overhead and the words, FILI PRAEBE COR TVUM, which may be translated as "Show us the

Figure 69 Religious Medallions I (Obverse)

Figure Designation	Taxonomic Designation
A	CI, SA, Sp #1
B	SB, Sp #1
C	Sp #2
D	CIII, SA, Sp #1
E	Sp #2
F	CII, SA, Sp #1
G,H	Sp #2,3
I	SC, Sp #1

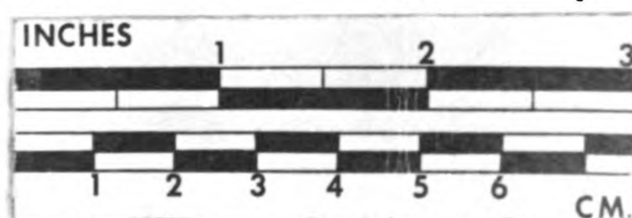
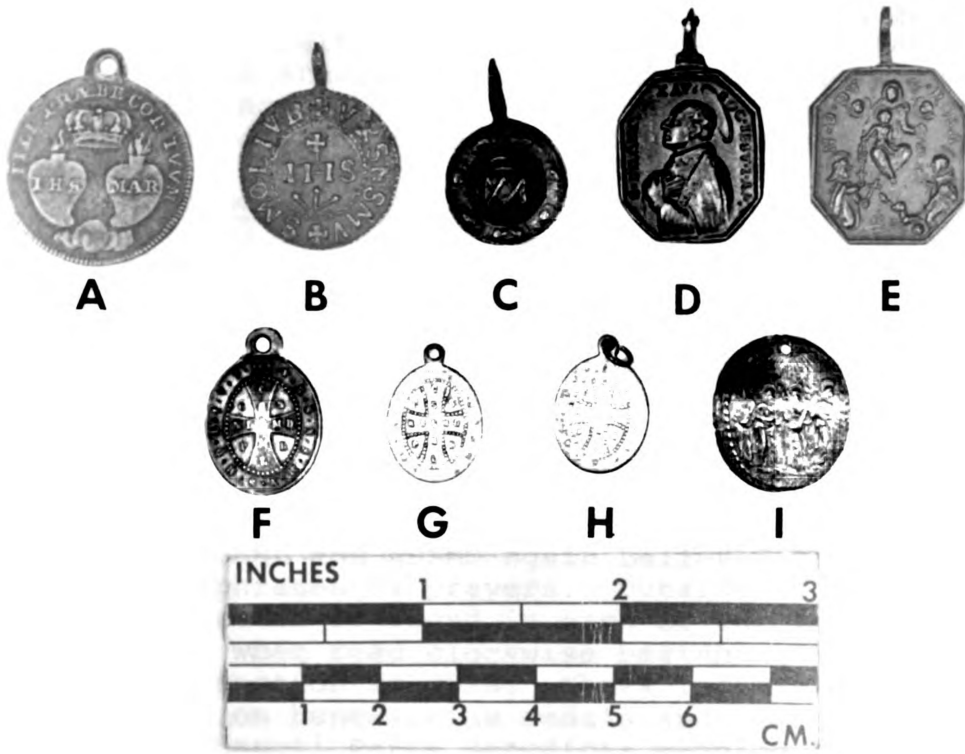
**A****B****C****D****E****F****G****H****I**

Figure 70 Religious Medallions I (Reverse)

Figure Designation	Taxonomic Designation
A	CI, SA, Sp #1
B	SB, Sp #1
C	Sp #2
D	CIII, SA, Sp #1
E	Sp #2
F	CII, SA, Sp #1
G,H	Sp #2,3
I	SC, Sp #1



heart of your Son." The letters IHS and MAR are on the left and right hearts respectively.
Diameter 2.4 cm.

Series B Twisted ring element

These medals exhibit ring elements which are set perpendicular to the horizontal plane of the body. Unlike the Series A specimens which required a link in order to be worn, these elements do not. The ring element of Series B medals is also much longer in proportion to body size than are the flattened elements, and appear as a cast appendage rather than as a rounded extension. Series B specimens also appear to be cast rather than stamped/embossed and detail work is generally not as fine. These medals are often found at historic sites while Series A specimens are not.

Specimen #1

Figure 69B, 70B

This specimen is unusual in that it bears an IHS and three nails on one side which is a Jesuit characteristic while a Benedictine cross is found on the reverse side. Surrounding the IHS are the letters SMOQLIVB VRSNSMV which are abbreviations of religious phrases. On the back side is a cross in which two rows of letters are presented in crossed form sharing the central letter "S." These letters are CSSML and NDSMD again believed to be abbreviated phrases or prayers. Outside of the cross, one letter is found in each of the four quadrants which when read clockwise beginning in the upper left section is CSPB. These letters are commonly found on Benedictine medals and represent the words Crux Sancti Patre Benedicti meaning "cross of our holy father St. Benedict."

Diameter 2.0 cm.

Specimen #2

Figure 69C, 70C

This medal exhibits a flat border and convex center which are circular in shape. One side of the medal bears a monogram of a superimposed M and A or perhaps M and M. This monogram is found on one style of Jesuit ring and has been suggested as representing the words Ave Maria (Hail Mary) or Mater Misericordia (Mother of Mercy) (Cleland 1971: 205; Wood 1974: 84). Another explanation is that the letters A and M may be superimposed to represent the single word Maris. On the left and

right sides of the monogram are the letters A and V respectively, while a crown hovers overhead.

The reverse side of the medal bears in IHS with a cross rising from the bar of the H, and with three nails below. The IHS which is a common Jesuit motif, representing the words Isus Hominis Salvator or "Jesus Savior of Mankind."

Diameter 1.5 cm.

Class II Oval

Series A Flattened ring element

Specimen #1

Figure 69F, 70F

This is a Benedictine medal which bears a picture of St. Benedict on the front accompanied by the letters CRUX S.P. BENEDICTI, meaning "Cross of our Holy Father St. Benedict." The figure of St. Benedict is holding a cross upwards in his right hand while a bird rests at his feet. The reverse side bears a cross with the same arrangement of letters found on the Class I, Series B, Specimen #1 medal.

Length 2.15 cm. (including ring element), width 1.50 cm.

Specimens #2,3

Figure 69G,H, 70G,H

These medals are identical in size and shape, and like the previous medal are Benedictine. Although the resemblance to the larger medal is very great, subtle differences do exist. For example, the figure of St. Benedict has been somewhat modified and a halo replaces outwardly radiating lines. The position of the bird at his feet has also changed, shifting from the right side of the medal to the left. The reverse is also modified to some extent, replacing the solid lines of the Benedictine cross with beaded ones.

Length 1.8 cm., width 1.2 cm.

Specimen #4

Figure 71E, 72E

This large medal is very worn and much of the finer detail is not discernible. The front side depicts the crucifixion and is bordered by the words PAR VOTRE MORT ET VOTRE SEPULTURE DELIVEREZ NOUS JESUS which translated from French means "By your

Figure 71 Religious Medallions II (Obverse)

Figure Designation	Taxonomic Designation
A	CII, SB, Sp #1
B	Sp #2
C	Sp #3
D	CIII, SA, Sp #3
E	CII, SA, Sp #4
F	CII, SB, Sp #4

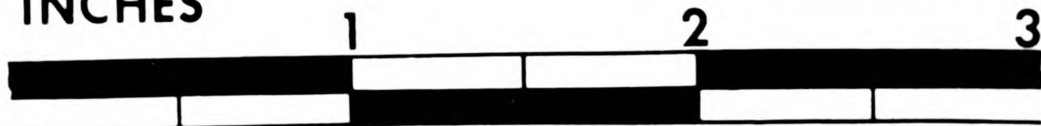
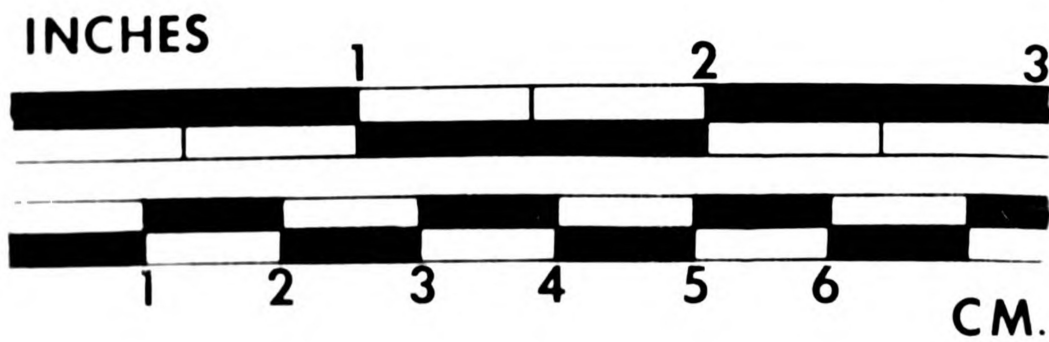
**A****B****C****E****D****F****INCHES****CM.**

Figure 72 Religious Medallions II (Reverse)

Figure Designation	Taxonomic Designation
A	CII, SB, Sp #1
B	Sp #2
C	Sp #3
D	CIII, SA, Sp #3
E	CII, SA, Sp #4
F	SB, Sp #4

**A****B****C****D****E****F**

death and your burial deliver us Jesus." The reverse of the medal shows the resurrection scene with the words PAR VOTRE RESIV__ION DEFIVERE JESUS which probably means "By your death and resurrection deliver us Jesus." Unlike the majority of the medals from this site, this specimen is worded in French rather than Latin. Length 3.3 cm., width 2.3 cm.

Series B Twisted ring element

Specimen #1

Figure 71A, 72A

This medal depicts St. Anna, mother of the Virgin Mary, on one side--while the reverse shows a scene with two angels kneeling before an altar. Similar scenes are present on the reverse side of medals also found at Michilimackinac (Stone 1974: 118) and at the Guebert Site in Illinois (Good 1974: 80-81).

Length 2.28 cm., width 1.52 cm.

Specimen #2

Figure 71B, 72B

This medal depicts a figure (Virgin) and Child on the front with the letters S M__TSIRAT. From these fragmentary letters it is not possible to determine which Saint is represented. The reverse is similar to the previous specimen with two kneeling angels. A medal which may be the same as this specimen is reported from the Guebert Site, although a verbal description of the piece was not provided (Good 1972: 71).

Length 2.50 cm., width 1.53 cm.

Specimen #3

Figure 71C, 72C

This medal depicts Jesus on one side accompanied by the words IESV FILI DEI VIVI or "Jesus Son of the Living God." On the reverse is pictured the Virgin Mary along with MATER DEI PRO; an abbreviated form of the phrase "Mother of God pray for us" or MATER DEI ORA PRO NOBIS. An identical medal was found at the Marquette Mission Site in Michigan's Upper Peninsula which dates from 1671-1705 (Stone 1972: 8). Medals with a similar Christ/Mary motif of this type have also been reported from the Lasanen Site in Michigan dating 1670-1715 (Cleland 1971: 30-31). Length 2.55 cm., width 1.71 cm.

Specimen #4

Figure 71F, 72F

This specimen bears a holy figure on one side and the letters S MATTHIA ORA P which probably stands for "St. Matthew pray for us" with the PRO NOBIS understood. The reverse of the medal shows another holy figure and the three letters I F R, an abbreviation for John Francis Regis, a Saint canonized in 1737. An identical specimen, although in much better preservation, is reported from Fort Michilimackinac, 1715-1781 (Stone 1974: 121).

Length 2.2 cm., width 1.86 cm.

Series C Punched eye element

This series is represented by a single specimen which does not exhibit a protrusion for the ring element, but rather has a single hole punched through the upper body of the medal.

Specimen #1

Figure 69I, 70I

This medal has been made from very thin brass and the design applied by a stamp or die. The obverse side pictures the crucifixion scene with the words MIRACVL: CRVCIFIXI or miracle of crucifixion. The reverse pictures four holy figures which may represent the four Evangelists--Mathew, Mark, Luke, and John.

Length 2.10 cm., width 1.73 cm.

Class III OctagonalSeries A Twisted ring elementSpecimen #1

Figure 69D, 70D

This medal is finely cast and on one side shows St. Francis Xavier and the letters S . XAV . SOC . IESV . I . AP . translated as "St. Francis Xavier, Society of Jesus, Apostle." On the other side is another figure and S . IGNATIVS . SOC . IESV . F or "St. Ignatius, Society of Jesus, Founder."

Length 3.0 cm., width 1.85 cm.

Specimen #2

Figure 69E, 70E

One side of this medal shows a woman looking upon the crucifixion and surrounded by S.M.MAGDALE or "St. Mary Magdale." The reverse side depicts the Virgin and Child handing down rosaries to two holy figures. The letters N·D·DV·ROSA are present, and represent the words "Our Lady of the Rosary," with "N" "D" standing for Notre Dame.
Length 3.0 cm., width 2.0 cm.

Specimen #3

Figure 71D, 72D

This specimen is extremely worn, making letters difficult to distinguish. The front bears a picture of the Virgin and Child and the letters DECO C ME. The reverse is not discernible beyond vague floral-like images.
Length 2.08 cm., width 1.80 cm.

RINGS (MISCELLANEOUS)

In addition to the Jesuit rings previously mentioned, eighteen finger rings of various shape and decoration are present in the collections. These rings can be divided into two major classes based upon composition--(1) those rings which are composed entirely of metal (always brass), and (2) those rings with metal bands which are set with glass stones. Since no chronological information is available on the Class I specimens they cannot be assigned a date except within the range of occupation at the site. This is not the case in regards to the rings with glass insets, which can be assigned a date no earlier than 1750 based upon information from several sites (Wood 1974: 83-103; Stone 1974: 131). At Fort St. Joseph this would indicate use during the last ten years of French occupation, as well as the length of the British dominance of the area. Rings of all types were common items of trade throughout the eighteenth century, and have been found in large quantities at numerous sites including Fort Michilimackinac.

Class I All metal compositionSeries A Plain nondecorated bands

Figure 73A,B

4 specimens

All four rings are made of brass. Two are well made and exhibit bands which have been carefully joined and sized. These specimens are 18.1 and 21.8 mm. in outside diameter with band widths of 3.9 and 4.1 mm. respectively. In contrast, the remaining two rings have been poorly shaped and are open, never having been soldered to close the band. These specimens are most likely of local manufacture, from bands of broken trade rings or scraps of metal. Their diameters are roughly 15 and 21 mm. with band widths of 2.0 and 2.5 mm. respectively.

Series B Rings with decorations or plaquesType 1 Rectangular plaque

Figure 73L

1 specimen

This specimen is brass, and exhibits a rectangular plaque formed by hammering and thinning of the band in one section. The bezel is 6.4 by 11.4 mm. in size, with a band diameter of 16.9 mm.

Type 2 Knot decoration

Figure 73C

1 specimen

This example is composed of brass wire twisted into a "French Knot" or "Love Knot" design similar to modern rings. The band is 20 mm. in diameter, and is composed of a double line of wire leading to the knot. The knot itself is 10.5 mm. in diameter, and rises above the band by 5.3 mm.

Class II Composite composition--metal bands with glass insetsType 1 One glass insetVariety a Circular inset with flower motif

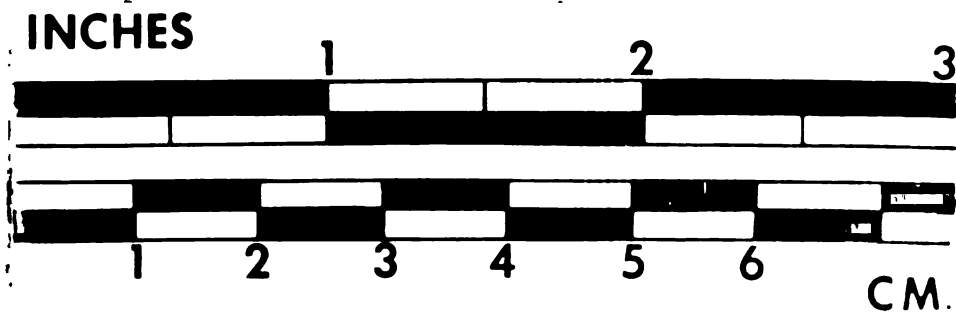
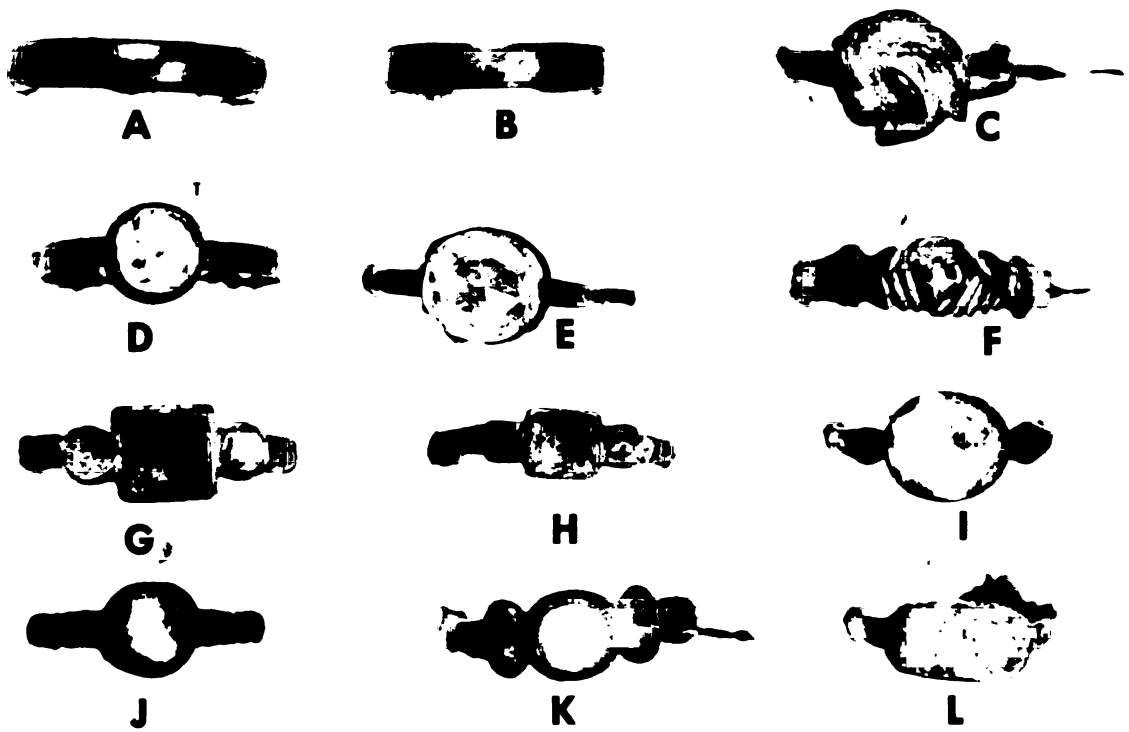
Figure 73D

2 specimens

These specimens exhibit plain bands 20 mm. in diameter with a single clear circular glass inset. The inset is 8.3 mm. in diameter, and overlays a

Figure 73 Miscellaneous Rings

Figure Designation	Taxonomic Designation
A	CI, SA
B	SA
C	SB, T2
D	CII, SA, T1, Va
E	Vb
F	Vc
G	T2, Va
H	Va
I	Vb
J	T3, Va
K	T4, Va
L	CI, SA, T1



flower motif which has been stamped into the well of the mounting.

Variety b Oval faceted inset

Figure 73E

1 specimen

This specimen exhibits a plain brass band set with a solitaire inset 9.0 mm. long and 9.9 mm. wide. This clear inset has twenty-four triangular-shaped facets which have been ground onto the surface. Ring diameter 18.5 mm.

Variety c Ornate band with inset

Figure 73F

1 specimen

This specimen has a very ornate band of cast brass, and a mounting for a single small inset. The inset does not remain, but is estimated to have been only 2 mm. in diameter. The overall ring diameter is 20.8 mm.

Type 2 Three glass insets

Variety a Square center mounting

Figure 73G,H

3 specimens

These specimens exhibit a single square center mounting with one small circular mounting on each side. Two of the specimens are totally void of stones and have brass bands with several ridges or grooves to each side of the stones. These two specimens have center mountings six to seven mm. square which were set on bands 17 and 20 mm. in diameter. The third specimen is larger and better made than the others, with a center mounting 7.5 mm. square, and a brass band with a diameter of 22 mm. This ring is missing the center and one outside inset, but still retains a circular glass stone on one side. Each side of the band has been decorated with a floral motif.

Variety b Oval center mounting

Figure 73I

1 specimen

This ring contains a single oval center mounting surrounded on each side with one circular mounting. The center inset is present, and is clear glass with approximately twenty-five irregular facets.

The center stone is 8.9 cm. long and 9.7 cm. in width. Unlike all previous rings, the band of this specimen is gold rather than brass, and is 19 mm. in diameter. Since gold was rarely used in trade, there is a good possibility that this ring was a personal possession of an European trader or soldier instead of an item of trade.

Type 3 Five glass insets

Variety a Circular center mounting

Figure 73J

2 specimens (1 complete, 1 fragment)

These rings exhibit plain brass bands, clear glass circular center stones, and two smaller blue insets on raised mountings placed on each side of the center. One of the rings has a center inset 8.0 mm. in diameter which has been laid over a decorated well so that a star pattern is visible. The other specimen has an inset 6.2 mm. in diameter, and a band size of 19 mm.

Type 4 Seven glass insets

Variety a Circular

Figure 73K

2 specimens (1 complete, 1 fragment)

These rings are brass, and have a mounting which consists of a circular center stone surrounded by three smaller stones on each side. One specimen has a clear center stone 7.0 mm. in diameter, while the other exhibits a blue glass inset 4.9 mm. in diameter. Both specimens have three blue insets on each side of the center, which are set upon raised mountings in a two-one arrangement.

RINGS (JESUIT)

"Jesuit Rings" are brass finger rings consisting of a bezel and one piece band. These rings are associated with French Jesuit missions occupied during the seventeenth and first half of the eighteenth centuries. First used as rewards for religious participation, the rings later became merely secular trade items. Cleland (1972: 202) suggests this had happened by the second quarter of the eighteenth century. Reporting on Fort Michilimackinac, Stone (1974: 131) notes that the majority of the rings were deposited in a 1720-1750 time span, and that they were not associated with religious structures such as the priests' home or church. This might suggest that the religious significance of the rings had been de-emphasized prior to the 1720 date which Stone provides.

The bezels of the rings are round, oval, octagonal, heart-shaped, or irregular and are decorated with motifs which are either stamped or incised into the face. Those rings with stamped or embossed designs most often depict religious figures or scenes such as the Virgin Mary, Jesus Christ, the Calvary scene, or religious monograms such as the double M or the IHS (to be discussed later). The rings

with incised motifs often are engraved with one or more letters such as N,M,PI,FI,BI,AI, or with numerals such as VI or VII. The incised rings also may depict abstract designs or figures which have no apparent meaning.

Cleland (1972) has presented a very plausible explanation for the meaning of the incised rings, and their relation to the higher quality stamped rings. He maintains that the rings which have been stamped-embossed are the prototypes for the later incised motifs. The rings which have been engraved have obviously been copied from earlier patterns, although it is not known by whom the rings were copied. The stamped rings therefore represent the patterns for the later incised motifs. Cleland's demonstration of style drift concept revolves around three prototype forms--the L-heart, IHS, and double-M designs. He demonstrates the transition of ring motifs from these prototypes to the later incised initial and abstract forms. Cleland also suggests a chronological sequence for this drift in stylistic characters.

Prior to 1700, all ring motifs were stamped onto small oval shaped bezels. For the most part these designs were enclosed by a rope-like border which encircled the center design. The rings at that time were used primarily in religious contexts. Sometime after 1700, the ring designs began to be copied after the prototype motifs, however, these were incised rather than stamped. The

copies were first done on oval bezels, but later began to appear on octagonal, heart shaped, or irregular shaped bezels. Before long the copies assumed the role of prototypes and eventually the original designs deteriorated into initials and incomprehensible forms. The process of style drift thus changed an embossed intricate design with religious symbolism into an incised abstract motif.

Those stamped prototypes which were easily copied soon provided patterns for later designs. The more complex the original design, the more rapidly a bastardization of it would take place. The L-heart, IHS, and double-M designs were simple depictions, therefore more frequently utilized as patterns for subsequent rings. Complex patterns such as the Virgin Mary, Christ figure, or clasped hands were difficult to duplicate, thus either none were reproduced, or the design deteriorated quickly with existing copies untraceable to their originals. By the 1720s the quantities of "Jesuit Rings" began to decline, and in the next twenty to thirty years disappeared altogether as trade items.

Forty-nine Jesuit Rings are present in the Fort St. Joseph collections. The following is a catalogue of Jesuit Rings from Fort St. Joseph.

Type 1 Clasped hands motif

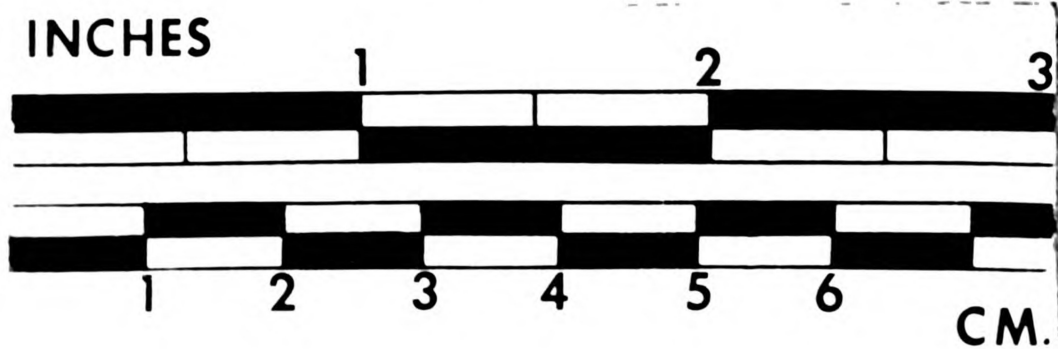
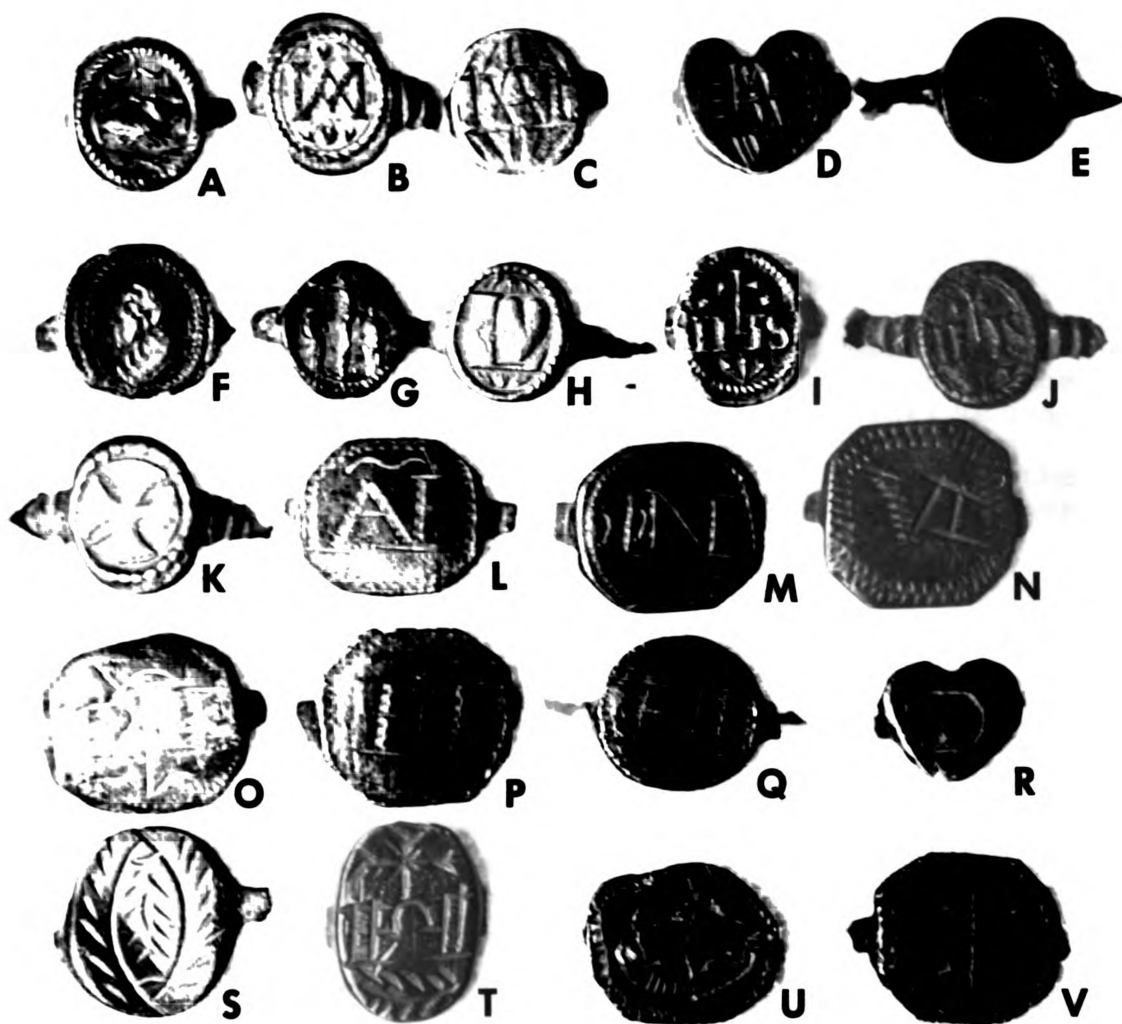
Figure 74A

3 specimens

These examples exhibit oval bezels, rope borders, and plain bands. The center motif is stamped-embossed and depicts

Figure 74 Jesuit Rings

Figure Designation	Taxonomic Designation
A	T1
B	T2, Va
C	Vb
D	Vb
E	T3
F	T4, Va
G	T5
H	T6
I	T7, Vb
J	Va
K	T8
L-R	T9
S-V	T10



two clasped hands. Above the hands is a shroud, and below them a crossed fronds.

Type 2 Double 'M' motif

Variety a

Figure 74B

2 specimens

These examples exhibit oval bezels, rope borders, and bands with three defined ridges at the band-bezel juncture. The center motif is stamped-embossed and depicts an inverted 'M' superimposed over an upright 'M.' Hearts and spikes appear above and below the center design. Cleland (1971: 205) suggests that the two M's stand for the Latin words Mater Misericordia or "Mother of Mercy." An alternate explanation is that the monogram represents a superimposition of the letters 'A' and 'M,' representing the Latin words Ave Maria or "Hail Mary."

Variety b

Figure 74C,D

4 specimens

Three examples exhibit bezels round to oval in shape, while the fourth is heart shaped. In all four examples the numerals IXXI are incised as a center motif. Incised lines appear above and below the numerals. No border design is present. Cleland (1971) points out that this motif is a deterioration of the double 'M' motif. All bands are plain.

Type 3 Virgin Mary motif

Figure 74E

1 specimen

This example exhibits an oval bezel, rope border, and plain band. The center motif is stamped-embossed and depicts a bust of Mary facing left. Lines radiate from the bust outwards toward the border.

Type 4 Christ motif

Variety a

Figure 74F

1 specimen

This example exhibits an oval bezel, rope border, and plain band. The center motif is stamped-embossed and depicts a bust of Christ facing left. During the

manufacture process, the ring was double stamped resulting in a double figure and border.

Variety b

Not illustrated

1 specimen

This example exhibits an oval bezel, rope border, and plain band. The center motif is quite worn but appears to depict a bust of Christ facing right. The design is stamped-embossed.

Type 5 Calvary motif

Figure 74G

2 specimens

These examples exhibit oval bezels, rope borders, and plain bands. The center motif is stamped-embossed and depicts Christ on the cross with a standing figure on each side.

Type 6 L-heart motif

Figure 74H

1 specimen

This example exhibits an oval bezel, rope border, and plain band. The center motif is stamped-embossed and depicts a large 'L' on the left side and heart on the right. Above and below the center design are three groups of lines (perhaps spikes).

Type 7 IHS motif

These examples exhibit oval bezels, rope borders, and stamped-embossed designs. The letters IHS compose the center motif, with a cross extending upwards from the cross bar of the 'H.'

Variety a

Figure 74J

1 specimen

This example exhibits a band with three ridges at the bezel-band juncture. A raised line is present inside the rope border and frames the IHS motif. Three spikes are present below the IHS, and the left and center spikes are merged, due to an imperfection in the die.

Variety b

Figure 74I

2 specimens

These examples exhibit two stars above the IH and the HS on either side of the cross. The bands are plain.

Comments: The letters IHS stand for the Latin words "Isus Hominis Salvator" or "Jesus Savior of Mankind" (Cleland 1971: 205). Wood (1974: 86) provides additional discussion on the meaning of the IHS.

Type 8 Cross motif

Figure 74

5 specimens

These examples exhibit oval bezels, beaded borders, and bands with three ridges at the juncture with the bezel. The center motif is stamped-embossed and depicts a cross with each arm flared outwards from the center. The end of each flared arm is rounded, giving the entire design a circular appearance.

Type 9 Initial motifs

Figure 74L through R

20 specimens

These examples exhibit octagonal (14), heart shaped (1), and elongated (5) bezels. The bands are plain and the motifs are incised. Border designs are solid incised, zig-zag, or dotted. The initials N (8 specimens), M (3), PI (1), FI (1), BI (1), HI (1), AI (1) appear, as well as the numerals VI (1) and VII (1). The heart shaped bezel has a 'D' as a motif. The most reasonable explanation for the meaning of these motifs is presented by Cleland (1971) in his discussion of style drift in the decoration of Jesuit finger rings. He states that the majority of these initial ring motifs can be "ultimately traced to only three prototype designs" (1971: 203). These prototypes are the double 'M,' IHS, and L-heart designs.

Type 10 Abstract motifs

Figure 74S through V

7 specimens

These examples exhibit octagonal (3), heart shaped (1), and irregular oval (3) bezels. The bands are plain and the motifs are incised. Borders are either solid incised, zig-zag, or nonexistent. The motifs are for the most part meaningless lines and symbols. There are two exceptions which will be mentioned later. Cleland (1971) states that these motifs are also degenerations from the three

prototype forms. I agree with his discussion on the matter. One ring depicts a shaped center motif with radiating lines away from it (Figure S). This ring as well as two others may be a degeneration of the L-heart motif. Another ring depicts a modified 'H' with a crude cross extending upwards from the cross bar (Figure T). This is a classic example of a modified IHS design. Following Cleland's assertion that the stamped-embossed motifs are earlier and that they serve as prototypes for later designs, three other rings may be discussed in terms of style drift.

Two rings have incised designs which form a cross in the center of the bezel. In each of the four quadrants formed by this cross are rounded or straight lines (Figure U). There is a possibility that these two rings are examples of style drift from the Type 8, Cross motif. The seventh example of this type is a motif which vaguely resembles a Calvary motif because of a center-like figure with incised lines on each side (Figure V).

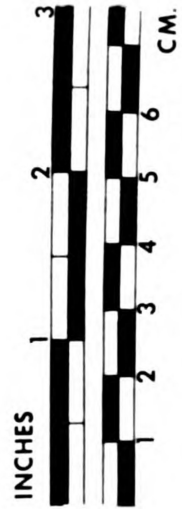
Discussion.--Eighteen of these represent the stamped-embossed prototypes which date prior to 1700. The remaining thirty-one specimens have incised designs and represent later deteriorations of original motifs. Within this latter category two heart shaped, three round, three irregular, five elongated (oval rotated ninety degrees), and eighteen octagonal bezels are represented.

Since the mission at Fort St. Joseph was the first in lower Michigan (1687) it is not surprising that such a large percent of the specimens predate 1700. At Michilimackinac, founded in 1715, only four of eighty specimens or 5 percent have stamped designs, while the remaining are incised (Cleland 1972: 207). The rings from Niles are therefore the earliest specimens found in Michigan's Lower Peninsula.

SAW BLADES

A total of six iron saw blade fragments are present in the Fort St. Joseph collections, three of which (Figure 75A,B,C) are held in the NIHS museum in South Bend. The six range in width from 11.5 to 39.3 m. and vary in the number of teeth per inch from 8 (Figure A) to 3.5 (Figure C). Five of the specimens, exhibit backs which are parallel to the teeth, and were most probably used in framed pit and bow saws. Those specimens (4) which have coarser teeth were used for rough cutting, while the specimens (Figure A) with the finely made teeth may have been designed for delicate, more specialized carpentry work. Figure B illustrates a specimen which exhibits a rounded back, width of 25 m. and length of 20.5 cm. This example represents a small hand saw which at one time may have had one or two handles. Saws in general were not common items of trade, but were tools of craftsmen and artisans. Though Fort St. Joseph was a frontier post there was still the need for craftsmen on a permanent or intermittent basis. At Michilimackinac, where craftsmen were more likely to have resided, twelve saw blades were recovered--two brass and ten iron (Stone 1974: 298).

Figure 75 Saw Blades (A-C)

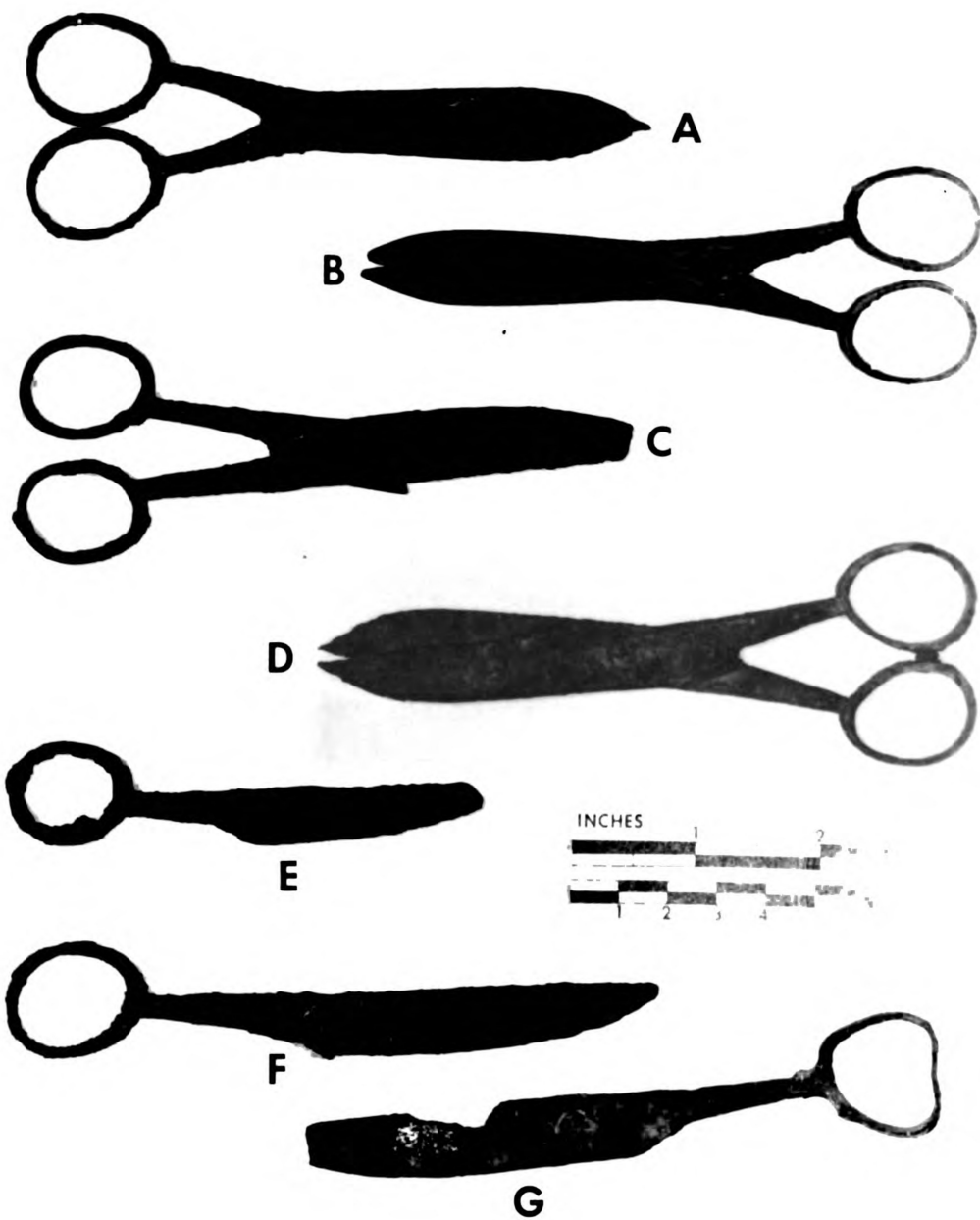
**A****B****C**

SCISSORS

Scissors have been found on numerous archaeological eighteenth century sites in North America (see Stone 1974: 161), and appear to have been quite common items for both domestic and trading purposes. Four complete scissors and four scissor fragments are present in the collections at Niles. All eight are composed of iron and are utilitarian in form with no evidence of decoration or embellishment. Seven specimens are quite similar in size and shape and have a length range of 12.5 to 13.2 cm., with a mean of 12.8 (Figure 76A,B,C,D,F,G). These examples exhibit oval finger rings and straight, flat shanks which are rectangular in cross section. The eighth specimen is markedly smaller, both in overall length and finger ring size (Figure E). This specimen has more rounded shanks and an estimated length of 10.0 cm.

At Michilimackinac five similar specimens are reported, while the remaining 19 scissors are more ornate brass and steel examples. The homogeneity of the scissor samples at Fort St. Joseph, and their similarity to the Michilimackinac specimens suggest that these large plain scissors were produced primarily for trade and were

Figure 76 Scissors (A-G)



imported in bulk quantities, rather than being individually brought in as personal possessions.

SPEARHEADS

The collections of Fort St. Joseph in the Northern Indiana Historical Society Museum contains three metal spear heads and one large metal projectile point. These spearheads were most probably items of trade. However they may have served other European domestic or military functions.

Specimen #1

Figure 77A

This specimen is a projectile point or small spear head, 76.3 mm. in length and 17.0 mm. in width. Three other specimens of this approximate length or slightly larger are present in the Niles collections (see projectile points, Figures B,D,F).

Specimen #2

Figure 77B

This example is a spearhead 154.2 mm. in length and 17.0 mm. in width. A long tapering shaft or tang is present for hafting into a shaft. The blade is long and tapering and is sharpened on both edges.

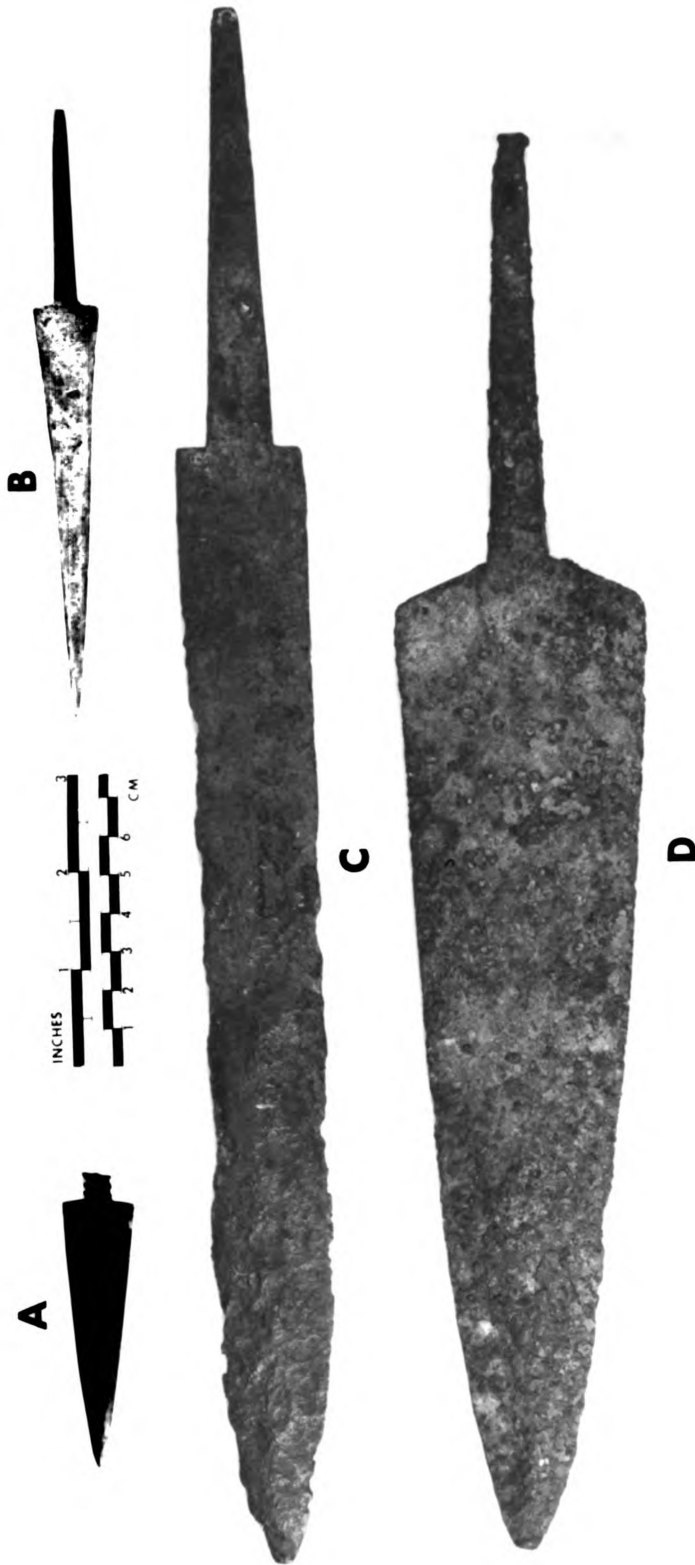
Specimen #3

Figure 77C

This specimen is a long slender spearhead 195.5 mm. in length and 31.7 mm. in width. The blade is convex in the center and tapers towards both sharpened edges. The tang is rectangular in cross section and tapers towards the end.

Figure 77 Spearheads

Figure Designation	Taxonomic Designation
A	Specimen #1
B	#2
C	#3
D	#4



Specimen #4

Figure 77D

This example is a wide spearhead which is quite flat except for the sharpened edges. It is 156.9 mm. in length and 62.5 mm. in width. The tang is rectangular in cross section and tapers towards the end.

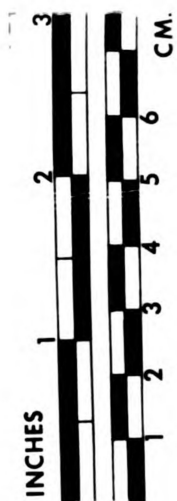
SPONTOON

Also called the half pike or espontoon, the spontoon was a pole arm used as both a fighting weapon and as an officers' symbol of rank and authority in directing troops during battle. Neumann (1973: 191) quotes Smith's Military Dictionary (1779) as saying "When the spontoon is planted, the regiment halts; when pointed forward, the regiment marches; and when pointed backwards, the regiment retreats." Usually hafted on a six to eight foot shaft, the head was normally leaf-shaped with a ring or crossbar at the base. These arms were used by the English from the 1600s to 1786, by the French from 1690 to 1758, and by the Americans throughout the Revolution (Neumann 1973: 191-192).

At Fort St. Joseph, one spontoon head is present in the collections. This specimen is hand forged from iron, and is leaf-shaped with a conical mounting socket (Figure 78). The overall length is 22.5 cm., with a blade width of 4.9 cm. The fact that the blade is widest at the midsection, rather than at the rear, indicates a time period in the last half of the eighteenth century (Neumann 1973: 212). Two nearly identical specimens are illustrated from Fort Ligonier 1758-1777, an English

Figure 78 Spontoon

418



military post in Westmoreland County, Pennsylvania (Grimm 1970: 81). Therefore, it is quite probable that the specimen at Fort St. Joseph is of English origin with a general date of 1760-1780.

SPOONS

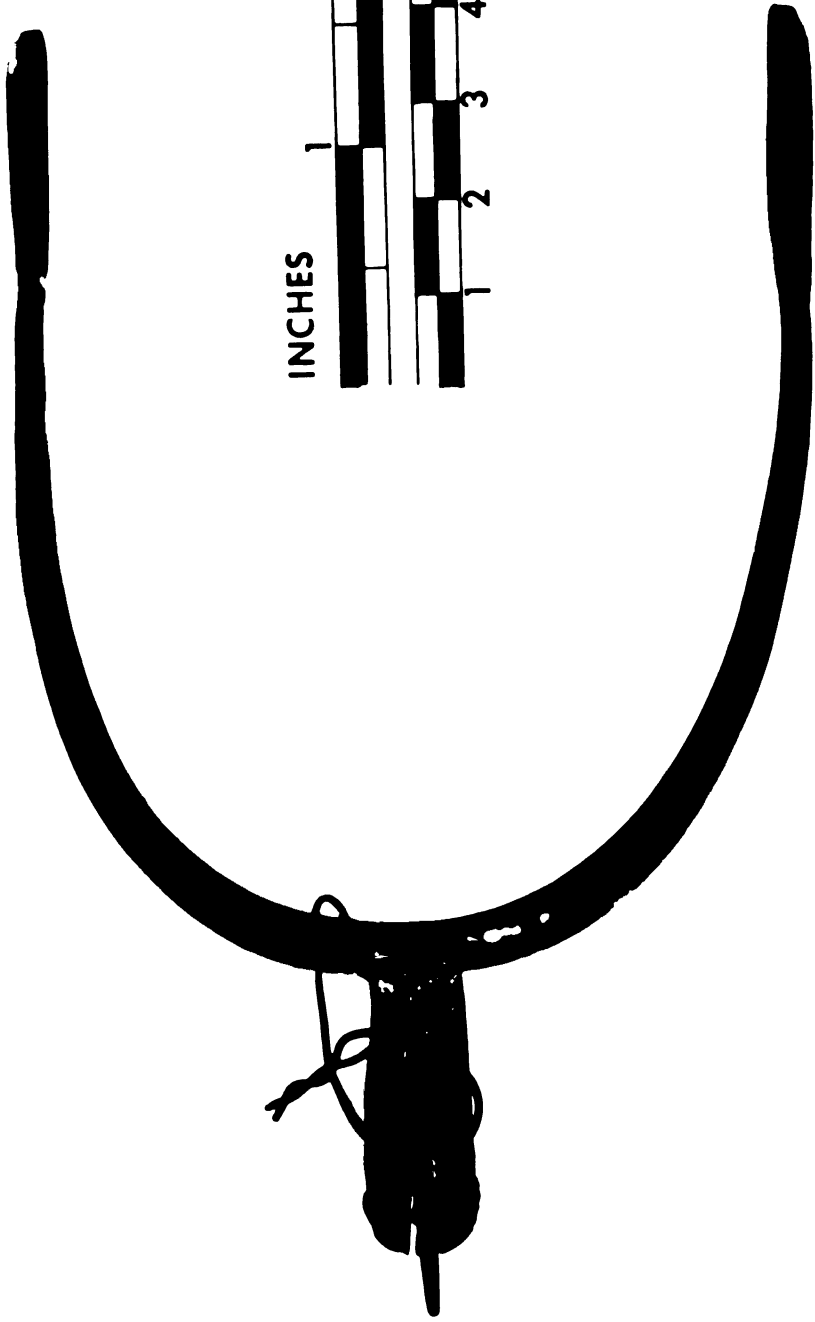
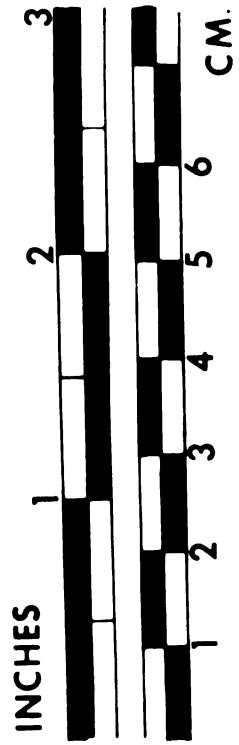
Three spoons were recovered from the site of Fort St. Joseph, two made from silver and one from copper. The silver spoons are both approximately 13 cm. in length and are identical in shape and articulation of the bowl. This shape was most commonly used on spoons of the post 1805 period (Ensko 1937: 14). Both spoons have at one time been marked on the back of the handle, one specimen (Figure 26C) with a single name or monogram which is now indistinguishable, and the others (not illustrated) with a five symbol hallmark. This hallmark is as yet unidentified and consists of an R, Crown, W, C, and WP set in diamond, round, round, teardrop, and crown-shaped cartouches respectively.

The third spoon is crudely fashioned from heavy sheet copper and has a deep round bowl and long wide handle (Figure 26D). It is 17.4 cm. in length and is unmarked. No specimen similar to this one is reported from Michilimackinac although several handle fragments similar to the silver ones are illustrated and assigned to the period of British occupation (Stone 1974: 182).

SPUR

One solid brass spur (Figure 79) is present in the collection. This specimen consists of a cast U-shaped loop with a protruding arm onto which a 21 spiked rowel is set. The ends of the loops are rectangular shaped buckles with a solid central bar. Noel Hume (1974: 243) states that "All spurs of the seven teenth and eighteenth centuries . . . terminated in figure 8 loops . . . but in the nineteenth century these were replaced by rectangular buckles cast as one with the spur itself, a single buckle at each end." Therefore, this spur from Fort St. Joseph is probably the result of post 1800 occupation at the site. Distance between loops 7.9 cm., overall length 13.3 cm.

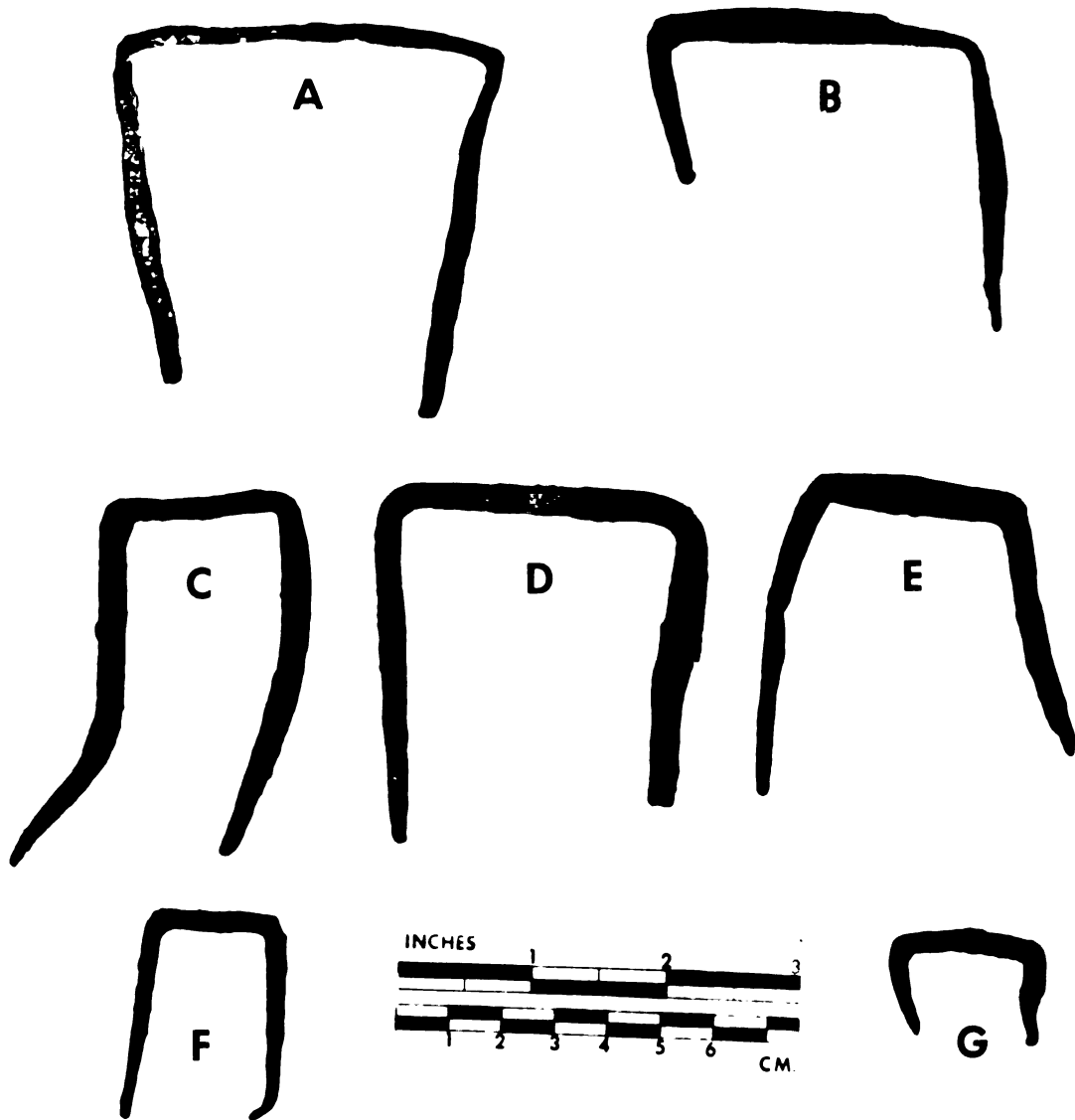
Figure 79 Spur



STAPLES

Staples are U-shaped pieces of metal used to join and hold wood or to secure latch elements in doors. Both sides are tapered to a point and are meant to be driven into wood or other soft material. The staples from Fort St. Joseph are all square to rectangular in cross section, although round specimens are reported from Fort Michilimackinac. Ten staples are present in the Niles collections ranging in width from 2.8 to 7.1 cm., and in length from 2.4 to 7.5 cm. (Figure 80A-G). The larger specimens probably served as keepers for door latch bolts (Stone 1974: 235), while the smaller examples were utilized in various woodworking situations. Stone (1974: 235) interprets the Michilimackinac specimens to French origin with a 1740-1780 time span.

Figure 80 Staples (A-G)



STRIKE-A-LITES

Also termed "fire steels," strike-a-lites are disc shaped pieces of iron used to draw a spark when used against a harder material such as flint. The fire steel is held in the hand and when stuck against flint a small red hot sliver of iron was dislodged, thereby allowing the user to start a fire. Until the friction match was invented in 1827, the fire steel was the primary tool in fire making used during the 18th century (Quaife 1937: 36). Strike-a-lites have been found on numerous historic sites including Michilimackinac where 40 specimens were recovered (Stone 1974: 187). This number can be compared to the 16 steels found at Fort St. Joseph.

The St. Joseph sample is divided into two major classes based upon form. Class I specimens have a handle element and a single flat striking edge, while Class II steels consist of closed rings with an outer striking edge on all sides. Both these classes were observed also from the Michilimackinac sample and were classified in a similar manner. Based upon contextual evidence, Stone (1974: 187-189) notes that while strike-a-lites were associated with both French and British features, they

could not be specifically attributed to either nationality based upon form.

Class I Single striking edge

Group A Rectangular shape

Figure 81A

1 specimen

This specimen consists of a single piece of iron shaped to produce a rectangular shaped strike-a-lite. There is a defined striking edge, as well as a handle element which is open at its center.

Length 7.8 cm., width 3.6 cm.

Class II Multiple striking edge

Class II specimens are single rings of iron. The ring is closed and there is no one defined striking edge or handle element. Any outside edge of the ring can be used as a striking surface.

Group A Oval shape

Figure 81B

1 specimen

A single specimen exhibits an oval shape whereby the opposing outer rings are not parallel.

Length 8.0 cm., width 4.0 cm.

Group B Rectangular shape

This group is composed of strike-a-lites which are rectangular in shape, but with slightly rounded ends. The opposing outer rings are parallel. Three distinct sizes are represented.

Type 1 Large

Figure 81C,D

3 specimens

Length 8.0 cm., width range 3.5-3.8 cm.

Type 2 Medium

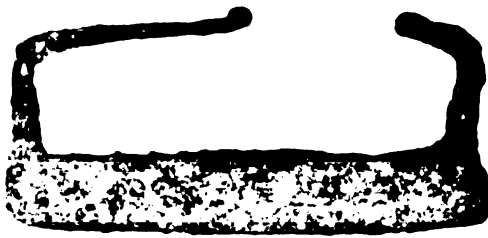
Figure 81E

7 specimens

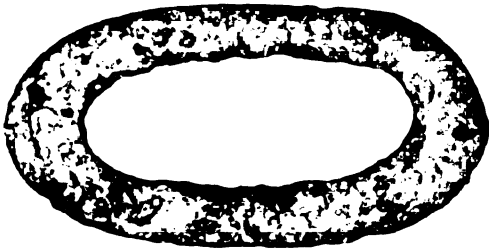
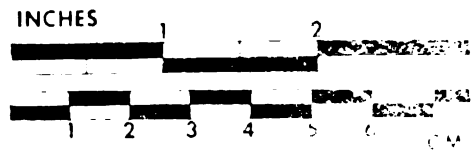
Length 7.2 cm., width range 3.3-3.5 cm.

Figure 81 Strike-A-Lites

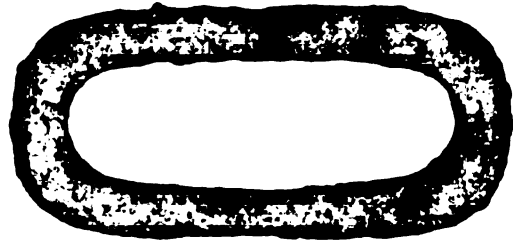
Figure Designation	Taxonomic Designation
A	CI, GA
B	CII, GA
C	GB, T1
D	T1
E	T2
F	T3
G	GC



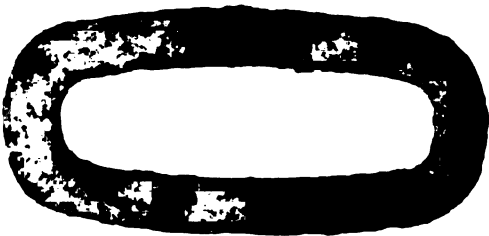
A



B



C



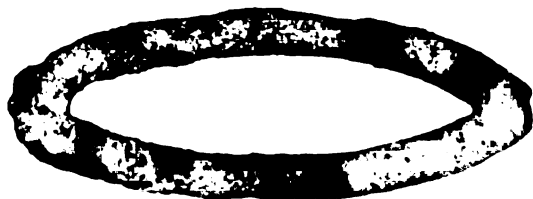
D



E



F



G

Type 3 Small

Figure 81F

3 specimens

Length 6.2 cm., width 3.0 cm.

Group C Elliptic shape

Figure 81G

A single group 'C' specimen is present in the strike-a-lite sample. It exhibits tapering ends and a broad middle.

Length 8.5 cm., width 3.0 cm.

SWORD POMMEL

One sword pommel is present in the Fort St. Joseph collections in Niles. This specimen consists of a spherical ball set upon a conical base or platform and with an ornamental top piece added. It is cast pewter and is quite ornate having beaded and ribbed embellishments included in the decorative motif. Due to the absence of an attachment with a knuckle bow or guard, it is evident that the pommel is from a sword with a simple or shell guard hilt profile. Such a sword would most probably not be of military issue, and would be a personally owned item of an officer or high status individual.

TACKS (BRASS)

Brass tacks were used primarily to ornament furniture, but were probably used also for decoration on other objects such as small chests, gunstocks and trunks. All thirty tacks from Fort St. Joseph were constructed in two pieces: the head and the tapered shaft were joined by soldering. Specimens similar to those at St. Joseph were recovered from Fort Michilimackinac and were interpreted as being of French origin within a 1740-1760 time span.

Series A Undecorated

Type 1 Flat

Figure 82A

1 specimen

This tack is constructed from heavy brass with a shaft 16 mm. long and a head 7.8 mm. in diameter.

Type 2 Convex

Variety a Smooth/regular

Figure 82B

5 specimens

These specimens exhibit heads which are smooth and circular in shape and which range in diameter from 9.6 to 11.6 mm.

Shaft length 12.5 mm.

Variety b Rough/irregular

Figure 82C,D

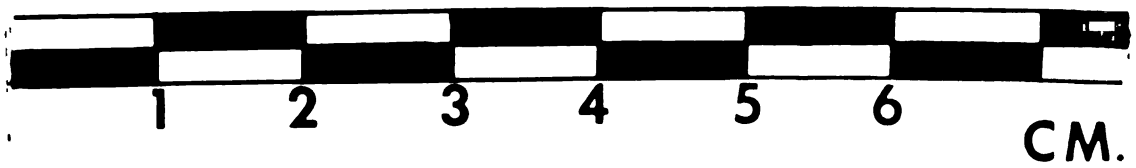
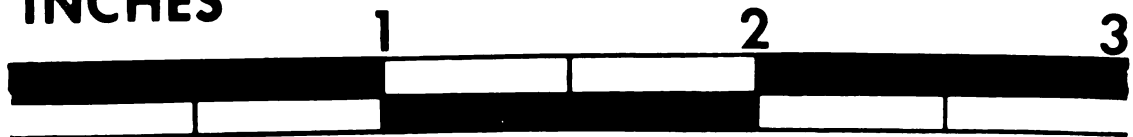
7 specimens

Figure 82 Tacks (Brass)

Figure Designation	Taxonomic Designation
A	SA, T1
B	T2, Va
C	Vb
D	Vb
E	SB, T1, Va
F	Va
G	Va
H	Vb
I	Vb
J	Vb
K	Va
L	Vb



INCHES



These tacks exhibit heads which are irregular in form, having no smoothness in convexity nor in edges. The overall rough and pitted condition of these specimens points towards the construction of the head sections by casting in a rough mold. Diameter range 7.2-7.5 mm., shaft length 10 mm.

Series B Decorated

Type 1 Convex

Variety a Nine-dot

Figure 82E,F,G,K
10 specimens

These tack heads were cast, and exhibit a design consisting of a central bulge or dot surrounded by eight others. Stone (1974: 205) Figure 121G illustrates identical specimens. Diameter range 6.9 to 8.1 mm. Shaft length range 9.7 to 10.7 mm.

Variety b Beaded

Figure 82H,I,J,L
7 specimens

These specimens exhibit a central bulging convexity surrounded by a beaded rim composed of 12 to 17 small dots. (See Stone 1974: 205 Figure 121E,H). Diameter range 6.7 to 7.5 mm. (7.3 average), shaft length approximately 7.0 mm.

Series B Discussion.--Series B specimens are reported also from the Gros Cap Cemetery Site (Nern and Cleland 1974: 4), 1670-1705, suggesting that the St. Joseph specimens may predate the 1740-1760 date which Stone (1974: 203) suggests.

THIMBLES

Thimbles are commonly found in eighteenth century sites and were used for domestic, decorative and trade purposes. A total of thirteen specimens are present in the Fort St. Joseph collections.

Type 1 Brass

Figures 83A-H

9 specimens

These examples range in diameter from 15.0 to 16.0 mm., and in height from 15.0 to 21.0 mm. Eight specimens are quite similar in size and shape and exhibit round impressions on their sides with square checked impressions on their crowns. These examples are of two piece construction with the convex crown made separately and brazed onto the body of the thimble. Three of these eight have perforated crowns indicating reuse as ornaments or tinklers.

The ninth specimen is considerably different from the previous examples, appearing more modern in appearance and construction. Circular impressions on both crown and sides extend halfway down the body, which appears to be of one-piece construction. On the smooth area near the base a small impressed "10" is present indicating thimble size. All nine specimens exhibit a pronounced basal ridge. At Fort Michilimackinac, forty-one specimens were recovered, all of which were brass with tapered sides and convex crowns (Stone 1974: 162). At that site the thimbles were interpreted as of British origin with a 1760-1780 time span. Maxwell and Binford (1961: 110) did, however, note that some brass thimbles were coming from French occupational layers at Michilimackinac which post-dated 1734.

Type 2 Tin

Figure 83I

1 specimen

This example is 16.0 mm. in diameter and 22.0 mm. in height. It is patterned with round impressions on both

Figure 83 Thimbles

Figure Designation	Taxonomic Designation
A-H	Type 1
I	Type 2
J	Type 3



A



B



C



D



E



F



G



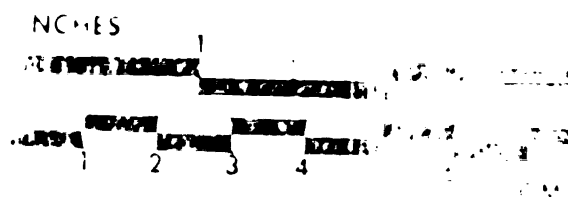
H



I



J



crown and sides extending three quarters of the distance from the crown to the base. The specimen is composed of thin tin and appears to have been constructed in a single piece. A rim or ridge is present around the base, but is poorly defined.

Type 3 Iron

Figure 83J

These examples are identical in size and shape having a 22 mm. diameter and a 15 mm. height. The timbles are patterned with a series of large round impressions extending from rim to base. They have no crown or cap and are open at the top. Heavy ridges are present around the bases on all three specimens.

TINKLING CONES

Tinkling cones are conical shaped ornaments made of copper or brass which are designed for attachment to clothing or hair. These cones were not primary items of trade, but were produced from scraps of metal goods such as copper kettles which were cut to a trapezoidal shape and bent (Stone 1974: 131-134).

At Michilimackinac, Stone (1974: 134) concludes that tinkling cones were "apparently worn as clothing ornaments by both Europeans (civilians) and Indians" and that they were worn by "both French and British inhabitants throughout the period of occupation." This, too, was probably the case at Fort St. Joseph where, although more isolated, the socioeconomic backgrounds of the inhabitants were similar to those at Michilimackinac.

Three hundred seventy three tinkling cones are present in the collections at Niles. Of this number, all but five specimens are made from copper or brass (Figure 84F-W) the remaining few being constructed from tin (Figure 84A-E). The size of tinkling cones ranges from 11.2 to 55.0 mm. in length with a mean size of approximately 31.0 mm. No size categories were immediately

Figure 84 Tinkling Cones**Figure
Designation****Taxonomic
Designation****A-E****Tin****F-W****Brass**

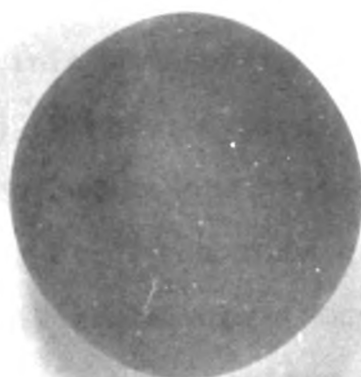
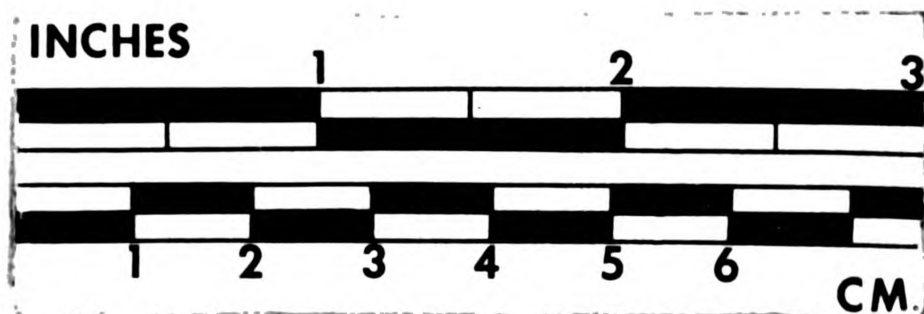
recognizable. Only six specimens retained their original attachment, with three leather and three sweetgrass fragments preserved.

TOYS

One porcelain doll and one glass marble were found on the west side of the St. Joseph River, near the Fort area. These objects were recovered from a grave containing other trade items such as a pewter porringer and pipe. The doll is 6.1 cm. in height and consists of a head, body, and legs, but no arms (Figure 85A).

The glass marble or ball is 2.8 cm. in diameter and exhibits a large pontil scar on one side (Figure 85B). Based upon the general form of the associated pipe and porringer, these goods may date to the first quarter of the nineteenth century.

Figure 85 Toys**Figure
Designation****Taxonomic
Designation****A****Porcelain doll****B****Glass marble**

**A****B**

TRADE SILVER

European metallic ornaments are known to have been used as trade goods throughout the eighteenth century, however, it was not until the 1760s or perhaps earlier when objects made from silver* came into widespread use (Quimby 1966: 91). Produced in England, France, Canada, and the United States, trade silver soon became one of the largest and most important items used in trade and gift giving with the Indian populations of central and eastern North America. For sixty years (1760-1820), and in some regions even longer, countless pieces of silverwork in various forms, were produced and distributed by silversmiths, traders, and government officials. In the Great Lakes region where French and English influence dominated until well into the nineteenth century, the great majority of trade silver came by various trade routes from France and Canada.

Silver ornaments were produced in many forms including gorgets, arm bands, locketts, broaches, earbobs, crosses, and pendants. Many of the pieces produced were

*The term "silver" is a misnomer due to the fact that the majority of the pieces produced were made of various metal alloys having little or no silver composition.

stamped with the mark of the silversmith and occasionally the city of origin. On English trade silver the hallmark system was used which indicated maker, city of manufacture, and date; making these pieces easily identifiable. This was not necessarily the case in France, Canada, and the United States where only a monogram of the maker was used as a touchmark. Many of these marks are well known and documented, while others may never be identified. Though the marked specimens especially lend themselves to dating, all specimens are in and of themselves chronological indicators of the 1760-1820 time span, or what Quimby (1966: 140-154) would term the Late Historic Period.

A total of 102 pieces of trade silver are present in the Fort St. Joseph collections. These specimens are grouped into functional categories and described as follows.

Armbands

Armbands are wide C-shaped bands of silver designed to be worn on the upper arm. Each end of the bands normally exhibits two punched holes for the lacing of leather or cord needed to secure the band. Three armbands, two at Niles and one at South Bend, are present in the collections. One band is 6.3 cm. wide and 23.2 cm. long and is decorated with the figure of a running deer or horse. The far right edge of the band is marked with the RC of Robert Cruickshank, while the other end exhibits the word MONTREAL

in block letters. The second band, also in the Niles Museum, is plain with ridges on the top and bottom but no decoration. This piece is however worked with a touchmark consisting of an eight-pointed pinwheel star and the block letter S, which is as yet unidentified. The width of this band is 4.5 cm., and its length approximately 20.5 cm. The specimen is in the Northern Indiana Historical Society Museum in South Bend, is unworked and bears an incised floral design. It is 5.5 cm. in width, and approximately 19 cm. in length.

Broaches

Broaches are circular discs designed for attachment to clothing by means of a cross pin through a circular open center. These broaches were produced in large quantities for trade, and are oftentimes found still attached to the original fabric. A total of seventy-four broaches are present in the collections at Niles and South Bend. Of those, sixty-nine are circular plain broaches ranging in diameter from 12 to 26 mm. with a mean of approximately 22 mm. Approximately half of these specimens remain attached to fabric. Quimby (1966: 143-144), discussing several burials found near Niles in 1952, states that: "Adhering to one of the skulls there was a fragmentary piece of trade cloth to which were attached about twenty-five or thirty small round broaches of silver so closely spaced or overlapping as to produce an appearance not unlike that of

chain mail." This piece of cloth, although in decay is illustrated in Figure 86.

Three broaches, unlike the others, have ornately cast, decorated frames consisting of wavy lines and ridges. One of these specimens exhibits a touchmark shaped like a scallop shell. A similar mark was found on a crucifix from the Fletcher Site, and is believed to represent a French discharge mark from Paris, France dating 1756-1762 (Mainfort 1977).

The largest and most decorative of the broaches is held in the Northern Indiana Historical Society Museum in South Bend. This specimen (Figure 87A) is 13.0 cm. in diameter and is decorated with a series of cut-out geometric designs coupled with an incised dot pattern. Although the cross bar does not remain, a small puncture is present where the attachment would have occurred. Unlike such objects as ear wheels which are flat, many of the larger broaches, including this specimen, are convex.

At Fort Michilimackinac a total of thirty-nine silver and pewter broaches were recovered, and were interpreted as of British 1760-1780 origin (Stone 1974: 135).

Crucifixes

Fourteen specimens are present in the Fort St. Joseph collections. See page 162 for Crucifix typology and discussion.

Figure 86 Trade Silver I

Figure
Designation

A-H

I

Taxonomic
Designation

Broaches

Broaches on fabric

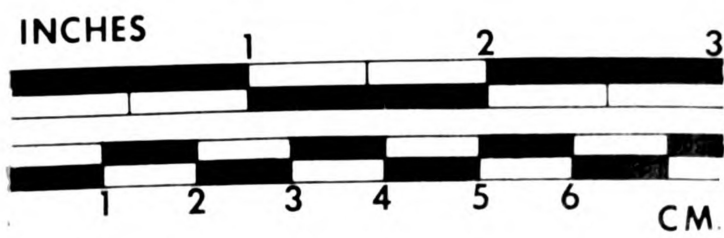
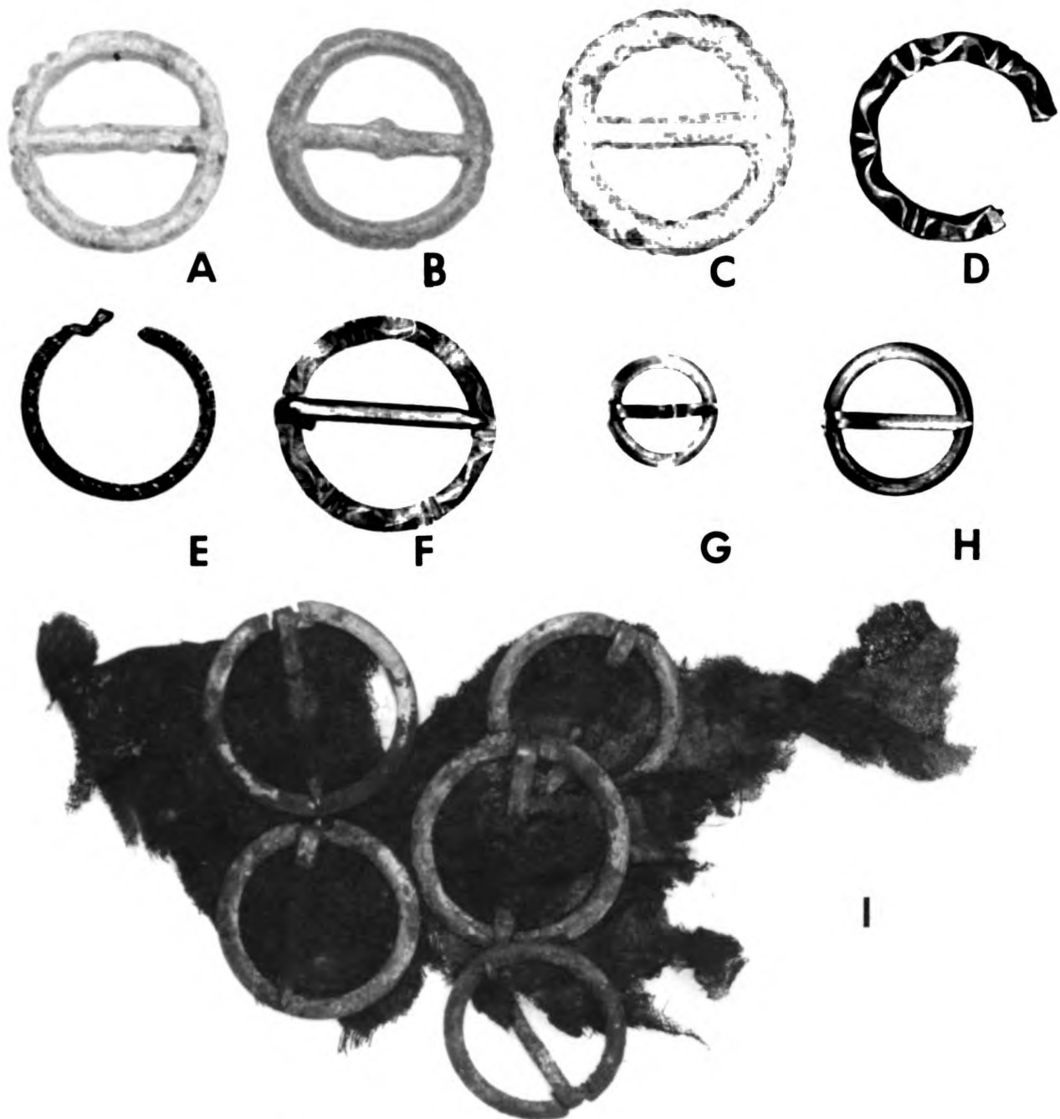
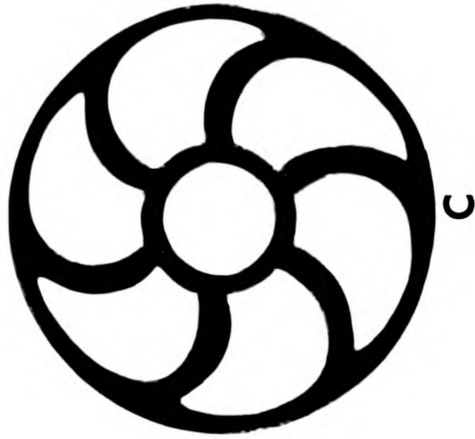
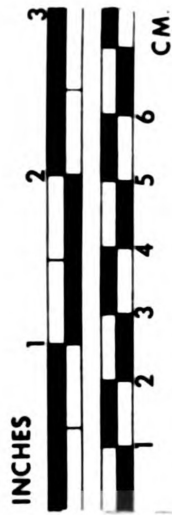


Figure 87 Trade Silver II

Figure Designation	Description
A	Earwheel
B	Earwheel
C	Broach



Earbobs

Earbobs are ornaments worn in the ear lobes which consist on conical or teardrop shaped bangles suspended by a small circular shaped ball which is then attached to the ear by means of a thin wire. Though designed as earrings, these ornaments could have also been worn through the nose or on clothing. Seven earbobs are present in the Fort St. Joseph collections, most of which are fragmentary, being only cones, or balls, with only one complete specimen.

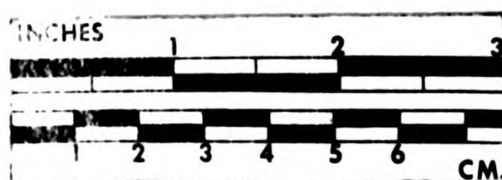
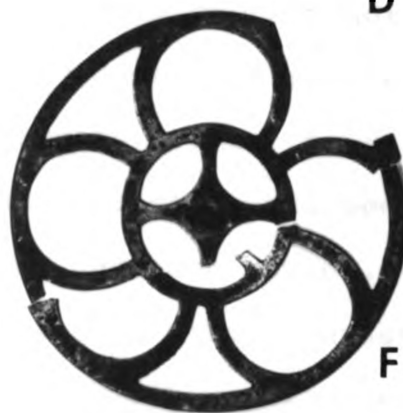
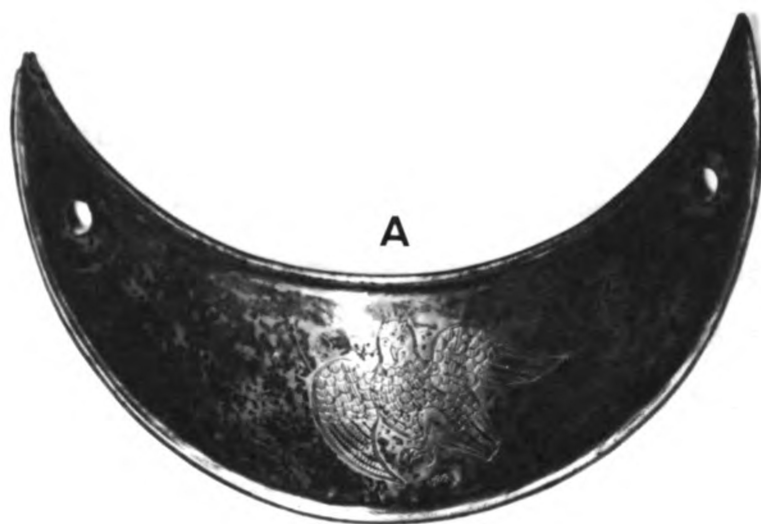
At Fort Michilimackinac five earbobs have been reported, all of which consist of a cone shaped bangle and circular ball (Stone 1974: 135, 137). Similar specimens have also been reported from the Fletcher Site in East Central Michigan (Mainfort 1977).

Earwheels

Earwheels are circular flat pieces of jewelry which were suspended from the ears or sewn onto clothing. These wheels are usually cut-out in intricate designs or geometric patterns, and are often confused in the literature with broaches. Five earwheels are present in the Fort St. Joseph collection, three specimens (Figure 88B,D,F) held in the Niles Museum, and the remainder (Figure 87B,C) in South Bend. One of the specimens (Figure 88F) bears the touchmark of Robert Cruickshank of Montreal (1779-1809: production years), while another bears a block PA in a rectangular cartouche. This latter specimen is

Figure 88 Trade Silver III

Figure Designation	Description
A	Gorget
B	Earwheel
C	Triangle
D	Earwheel
E	Spoon locket
F	Earwheel



probably the work of Peter Arnoldi, a Montreal silversmith working during the last quarter of the eighteenth and first quarter of the nineteenth centuries.

Unlike large broaches which are convex, these ear-wheels are flat and exhibit no perforation for attachment of a cross bar or tongue. Diameters: Figure B 5.57 cm.; Figure D 5.10 cm.; Figure F 6.0 cm.; Figure B 5.8 cm.; Figure C 6.35 cm.

Gorgets

During the eighteenth century, the gorget was a symbol of rank and authority for European military officers and consisted of a U-shaped convex silver disc hung about the neck or upper chest by means of a silver chain. Oftentimes, high ranking Indian "chiefs" were presented gorgets by the British Crown to maintain friendships and alliances and by the middle of the eighteenth century gorgets were a recognized symbol of authority among the native populations.

The popularity of gorgets led to their production as items of trade and as their function changed, so did the form--developing into two separate styles, the full circle and the crescent. The full circle gorget was a round concavely shaped silver object usually decorated on the inside with an incised decoration usually in an animal motif. It was designed to be hung around the neck by a chain, but was also often sewn onto clothing. The crescent shape, on the other hand, more closely resembled

the original gorget form except that it was reduced in size and made more shallowly curved--resulting in a crescent moon shape. These too were often decorated, but were engraved on the convex side.

Two gorgets, one of each style are present in the Fort St. Joseph collections. The circular shaped specimen is 9.1 cm. in diameter and has an otter motif crudely engraved on the inside face. This specimen is currently housed in the Northern Indiana Historical Society Museum in South Bend.

The crescent shaped specimen is 11.3 cm. from ear to ear and 4.1 cm. from rim to rim. It is decorated with a bird motif of a horned owl or mythical bird. It bears the mark of Robert Cruickshank, a Montreal silversmith who worked between 1779 and 1809 (Quimby 1966: 198), Figure 88A.

Spoon Lockets

Spoon lockets, so called because of their resemblance to a spoon when open, were popular items of trade. They consisted of two pieces. A flat lid usually decorated, and a spoon bowl shaped bottom piece. These lockets were designed to be worn around the neck and were equipped with a ring at the hinge juncture. Two spoon lockets, one in Niles and one in South Bend, are present in the Fort St. Joseph collections. Both specimens bear the mark of Robert Cruickshank. The specimen at Niles (Figure 88E) is

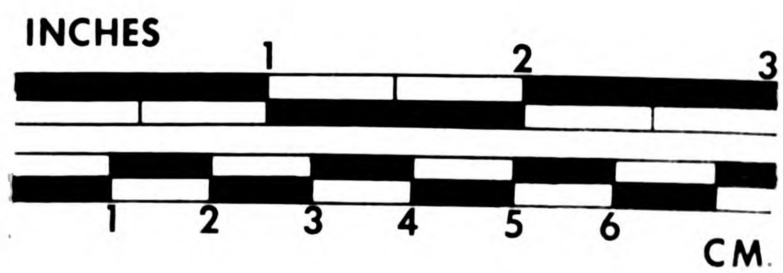
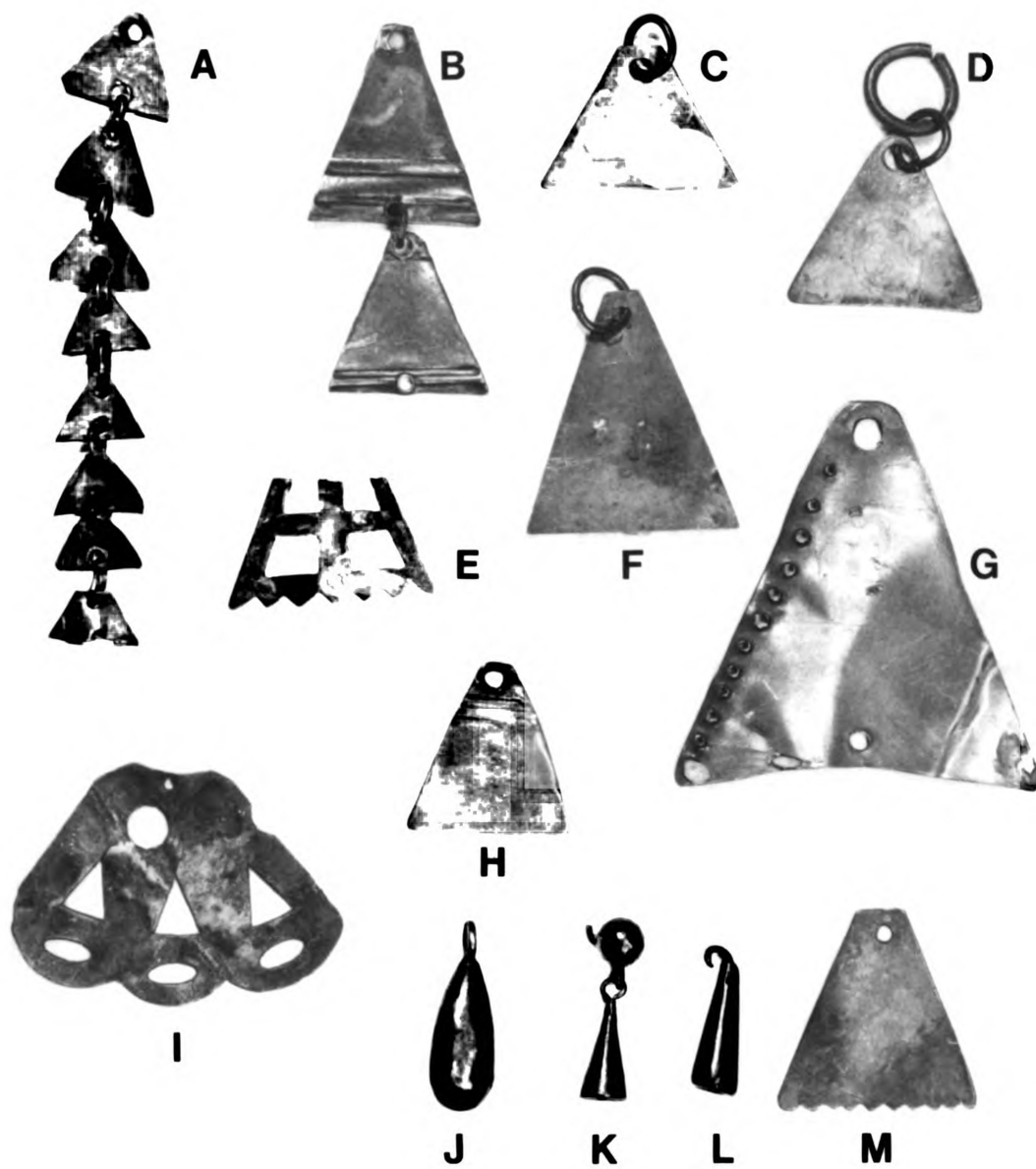
4.5 cm. in length, 3.3 cm. in width and 8.0 mm. in depth. The second specimen is similarly shaped but larger, measuring 6.0 cm. in length and 3.9 cm. in width. This latter specimen bears the RC touchmark on the underside of the lid, while the locket from Niles is marked on the upper surface.

Triangles

Triangular shaped pieces of trade silver are multifunctional ornaments which were worn as pendants, earrings, or other ornaments, or were sewn onto clothing for decoration. These ornaments have either one or two suspension holes located at the apex of the triangle and sometimes at the midpoint of the base. The triangles with the double holes were designed to be joined in series, with many triangles suspended one above the other. The collection at Niles contain fourteen single holed and eighteen double holed specimens (Figure 89A-I, M). Many specimens of both types are crudely produced and appear to have been constructed from armbands and other large flat ornaments, including broaches. Several specimens (seven) are, however, of finer quality with heavier metal, a more regular shape, and three specimens have soldered rings still in place. All the finer quality specimens are single holed. Two of those specimens are finely serrated at the base, and one bears a scallop-shell touchmark and cut-out design. In addition, one specimen is cast silver or white metal

Figure 89 Trade Silver IV

Figure Designation	Description
A-I, M	Triangles
J-L	Earbobs



(Figure 88C) unlike the other specimens which have been cut from sheet metal.

Regarding the double-holed specimens, they appear more crude in appearance and exhibit irregular shapes, poorly punched holes, and ragged sides. In one instance, eight triangles suspended in series with base hole and form links (Figure 89A). It is quite probable that the two holed specimens, as well as many of the singular holed ones were of local manufacture, rather than being the work of a skilled professional craftsman.

At Fort Michilimackinac, four triangles were recovered which are similar to the St. Joseph specimens (Stone 1974: 135, 138). All four specimens were cut from sheet silver and are single-holed.

Comments.--At Fort Michilimackinac in northern Michigan, only nine trade silver ornaments were recovered during the 1959-1969 field seasons, which is very small in comparison to the silver sample from St. Joseph. The fact that Fort Michilimackinac was abandoned and re-established at Mackinac Island in 1781 accounts for the low frequency of trade silver, since the peak years of silver production extended well into the nineteenth century. Fort St. Joseph is reported to have been destroyed in 1781, but the large number of silver goods points towards occupation which is much later than that date. The presence of marked silver items by Robert Cruickshank and

by Peter and Charles Arnoldi present a strong argument for settlement well into the nineteenth century. At the Fletcher Site in Northern Michigan (circa 1770), sizeable amounts of trade silver were recovered from burial contexts indicating the ritual value of silver for that period.

Table 3.--Maker's Marks on Trade Silver.

Mark	Maker	Date of Manufacture	Place of Manufacture	Number of Specimens	Type of Specimen
RC	Robert Cruickshank	1779-1809	Montreal	6	Armbands Earwheels Gorgetts Spoon lockets Crucifixes
CA	Charles Arnoldi	1784-1810	Montreal	1	Crucifix
PA	Peter Arnoldi	Approx. 1780-1810	Montreal	1	Earwheel
Stor-S	Unidentified			1	Armband
Scallop Shell		1756-1762	Paris, France	3	Broaches Triangles Crucifixes

UNIDENTIFIED METAL

In addition to a large amount of corroded material, there are three objects which are as yet unidentified.

Specimen #1

Figure 90A

This specimen consists of a wedge shaped body onto which a curving tapered appendage has been added. The narrow end of the body exhibits considerable flattening indicating possible use as a wedge. The blade end is tapered to an edge, but does not appear to have been carefully sharpened.

Specimen #2

Figure 90B

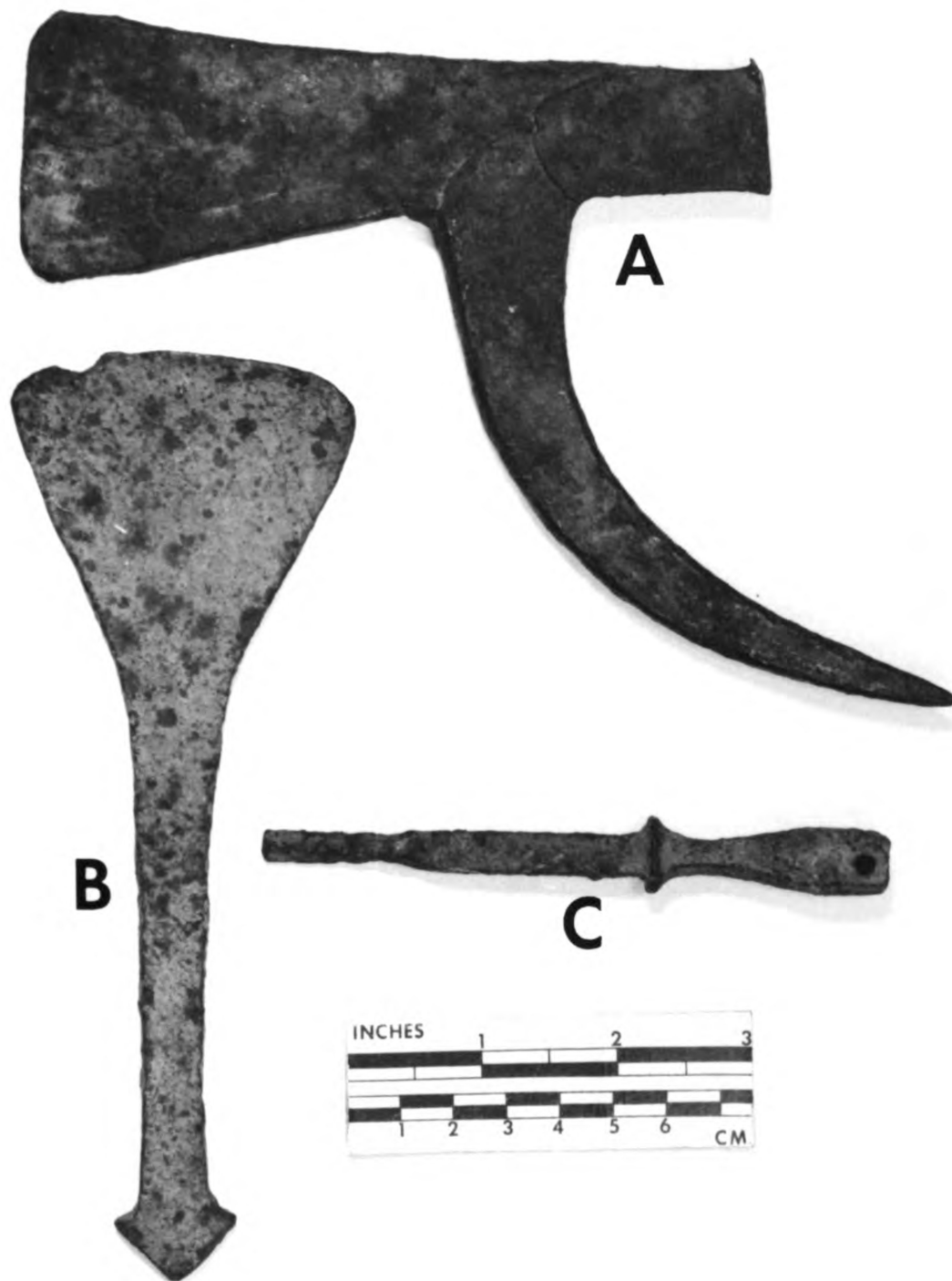
This specimen may have been used as a chisel or gouge. It is flat, with a tapered but unsharpened end.

Specimen #3

Figure 90C

This specimen may have been used as a punch or awl, and exhibits a hollow head and a shaft which tapers from square to round in cross section.

Figure 90	Unidentified Metal
Figure Designation	Taxonomic Designation
A	Sp #1
B	Sp #2
C	Sp #3



APPENDIX B

BRIEF ARTIFACT INVENTORY

APPENDIX B

BRIEF ARTIFACT INVENTORY

This Appendix consists of a brief inventory of artifacts from the Fort St. Joseph collections and their frequency of occurrence. The frequencies listed below are the total number of artifacts in each major grouping without divisions by Class, Type, etc. For specific artifact counts within a typological format see Appendix A.

<u>Artifact</u>	<u>Frequency</u>	<u>Artifact</u>	<u>Frequency</u>
Awls	47	Gunparts	
Axes	7	Buttplates and	
Bale Seals	31	tangs	8
Glass Beads	65,000	Cocks	12
Rosary Beads	55	Locks	2
Misc. Beads	429	Pistol Barrel	1
C-shaped Bracelets	48	Ramrod guides	26
Buckles	29	Sideplates	14
Buttons	65	Springs	12
Sleeve Buttons	6	Steels	5
Caltrops	2	Triggers	12
Ceramics	160	Trigger guards	
Crucifixes	25	and finials	19
Crucifix mold	1	Wrist escutcheons	2
Door, gate,		Misc. gunparts	14
shutter hooks	5	Hair pin	1
Door latch catches	5	Hair pipes	11
Drawer handles	4	Hammer	1
Forks	4	Harpoons	2
Glass	500	Hawk bells	48
Gunflints	433	Hinges and pintles	23

<u>Artifact</u>	<u>Frequency</u>	<u>Artifact</u>	<u>Frequency</u>
Hoes	4	Rings (Jesuit)	49
Horseshoes and oxshoes	3	Saw blades	6
Kettles and kettle parts	190	Scissors	8
Keys	12	Spearheads	3
Keyhole escutcheons	5	Spontoons	1
Knives	225	Spoons	3
Locks	25	Spur	1
Mouth harps	11	Staples	10
Musket balls and shot	1,638	Strike-a-lites	16
Nails	1,505	Sword pommel	1
Needles	8	Tacks	30
Pins	31	Thimbles	13
Pipes (Kaolin)	34	Tinkling cobs	173
Pipe (Pewter)	1	Toys	2
Pipes (Stone)	119	Trade silver	
Pipe tomahawk	1	Armbands	3
Pipe accessories	1	Broaches	74
Projectile points	110	Earbobs	5
Religious		Earwheels	5
medallions	15	Gorgetts	2
Rings (Misc.)	18	Spoon lockets	2
		Triangles	32
		Unidentified metal	200

REFERENCES CITED

REFERENCES CITED

Armour, David A.

- 1966 Made in Mackinac: Crafts at Fort Michilimackinac.
 Mackinac History, Leaflet No. 8, Mackinac Island
 State Park Commission, Mackinac Island, Michigan.

Beeson, Lewis H.

- 1896 Fort St. Joseph, Michigan Pioneer and Historical
 Society Collections, Vol. XXVIII, p. 179.
 Smith Printing Co., Lansing.

Blackmore, Howard L.

- 1961 British Military Firearms. Arco Publishing, New
 York.

Brown, Margaret K.

- 1971 Glass From Fort Michilimackinac: A Classification
 for Eighteenth Century Glass. The Michigan
 Archaeologist, Vol. 17, Nos. 3-4, September-
 December 1971, pp. 97-215. Ann Arbor.

Campbell, J. Duncan

- 1965 Military Buttons, Long Lost Heralds of Fort
 Mackinac's Past. Leaflet No. 7, Mackinac
 History, Mackinac Island State Park Commission.

Cleland, Charles E.

- 1970 Comparison of the Faunal Remains From French
 and British Refuse Pits at Fort Michilimackinac:
 A Study in Changing Subsistence Patterns.
 Canadian Historic Sites: Occasional Papers in
 Archaeology and History, No. 3, pp. 8-23.
 National Historic Sites Service, National and
 Historic Parks Branch, Department of Indian
 Affairs and Northern Development, Ottawa.

Cleland, Charles E.

- 1972 From Sacred to Profane: Style Drift in the Decoration of Jesuit Finger Rings. American Antiquity, Vol. 37, No. 2, pp. 202-210.

Cleland, Charles E., Ed.

- 1971 The Lasanen Site, An Historic Burial Site in Mackinac County, Michigan. Publications of the Michigan State University Museum Anthropological Series, Vol. 1, No. 1, East Lansing.

Cotter, John L.

- 1958 Archaeological Excavations at Jamestown, Virginia. Archaeological Research Series, No. 4. National Park Service, Washington, D.C.

Cunningham, Wilbur M.

- 1961 Land of Four Flags, An Early History of the St. Joseph Valley. Hardscrabble Books, Berrien Springs, Michigan.

Darling, Anthony D.

- 1970 Red Coat and Brown Bess, Museum Restoration Service, Ottawa, Ontario.

Ensko, Stephen G.

- 1937 American Silversmiths and Their Marks. Cracker Barrel Press, Southampton, N.Y.

Good, Mary Elizabeth

- 1972 Guebert Site: An 18th Century, Historic Kaskaskia Indian Village in Randolph County, Illinois. Central States Archaeological Society Memoir, No. 2.

Grimm, Jacob L.

- 1970 Archaeological Investigation of Fort Ligonier: 1960-1965. Annals of Carnegie Museum, Vol. 42. Pittsburgh.

Hamilton, T. M.

- 1968 Early Indian Trade Guns. Museum of the Great Plains, Lawton, Oklahoma.

Hamilton, T. M.

- 1976 Firearms on the Frontier: Guns at Fort Michilimackinac 1715-1781. Reports in Mackinac History and Archaeology, No. 5, Mackinac Island State Park Commission, Trikraft Inc., Williamston.

Hamilton, T. M. (compiler)

- 1960a Additional Comments on Gunflints. The Missouri Archaeologist, Vol. 22, pp. 73-79. Columbia.
- 1960b Indian Trade Guns. Missouri Archaeologist, Vol. 22, Columbia.

Hanson, Charles E.

- 1955 The Northwest Gun. Nebraska State Historical Society Publications in Anthropology, No. 2, Lincoln.

Harrington, J. C.

- 1954 Dating Stem Fragments of Seventeenth and Eighteenth Century Clay Tobacco Pipes, Archaeological Society of Virginia Quarterly Bulletin, Vol. 9, No. 1, pp. 9-13.

Heighton, Robert F., and Kathleen A. Deagan

- 1971 A New Formula for Dating Kaolin Clay Pipe Stems. The Conference on Historic Site Archaeology Papers, Vol. 6, Part 2, Columbia, S. Carolina.

Hogg, Victor

- 1975 The Development of Historic Fort St. Joseph, MS prepared for the Greater Niles Recreation Board, Interpretive Development Planning, Williamston, Michigan.

Idle, Dunning

- 1946 The Post of St. Joseph During the French Regime 1679-1761. Ph.D. thesis, Department of History, University of Illinois, Champagne.

Innis, Harold Adams

- 1956 The Fur Trade in Canada; An Introduction to Canadian Economic History. Revised Edition, University of Toronto Press, Toronto.

Jacobs, Wilbur R.

- 1966 Wilderness Politics and Indian Gifts: The Northern Colonial Frontier, 1748-1763. University of Nebraska Press, Lincoln.

Jelks, Edward B., ed.

- 1966 The Gilbert Site, A Nortño Focus Site in Northeastern Texas. Bulletin, Texas Archaeological Society, Vol. 37.

Kerfoot, John Barrett

- 1924 American Pewter. Crown Publishers, New York.

Kinietz, William Vernon

- 1965 The Indians of the Western Great Lakes: 1615-1760. The University of Michigan Press, Ann Arbor.

Kinnaird, Lawrence

- 1964 The Spanish Expedition Against Fort St. Josein in 1781, A New Interpretation. Mississippi Valley Historical Review, Vol. XIX (1933 Reprint), Kraus Reprint Corp., New York, pp. 175-191.

Lowery, William

- 1972 National Historic Site Application for Fort St. Joseph.

Mainfort, Robert

- 1977 Personal communication.

Mankowitz, Wolf

- 1972 Wedgewood. Spring Books, London, New York.

Maxwell, Moreau S.

- 1964 Indian Artifacts at Fort Michilimackinac, Mackinac City, Michigan. Michigan Archaeologist, Vol. 10, No. 2, pp. 23-30. Ann Arbor.

Maxwell, Moreau S., and Lewis R. Binford

- 1961 Excavation at Fort Michilimackinac, Mackinac City, Michigan: 1959 Season. Michigan State University Museum Cultural Series, Vol. 1, No. 1, East Lansing.

McCoy, Daniel

- 1907 Old Fort St. Joseph. Michigan Pioneer and Historical Society Collections, Vol. XXXV, pp. 545-552.

Miller, J. Jefferson II, and Lyle M. Stone

- 1970 Eighteenth-Century Ceramics From Fort Michilimackinac: A Study in Historical Archaeology. Smithsonian Studies in History and Technology, No. 4, Smithsonian Institution Press, Washington, D.C.

Munsell Book of Color

- 1929- Munsell Color Company, Inc., Baltimore.
1942

Nern, Craig F. and Charles E. Cleland

- 1974 The Gros Cap Cemetery Site, St. Ignace, Michigan: A Reconsideration of the Greenless Collection. Michigan Archaeologist, Vol. 20, No. 1, pp. 1-56. Ann Arbor.

Neumann, George C.

- 1973 Swords and Blades of the American Revolution. Promontory Press, Harrisburg, PA.

Noël Hume, Ivor

- 1961 Sleeve Buttons: Diminutive Relics of the Seventeenth and Eighteenth Centuries. Antiques, Vol. LXXIX, No. 4, pp. 380-383. New York.
- 1970 A Guide to Artifacts of Colonial America. Knopf, New York.

Olsen, Stanley J.

- 1963 Dating Early Plain Buttons by Their Form. American Antiquity, Vol. 28, No. 4, pp. 551-554. Salt Lake City.

Omwake, H. Geiger

- 1956 Date-Bore Diameter Correlation in English White Kaolin Pipe Stems, Yes or No? Quarterly Bulletin, Archaeological Society of Virginia, Vol. 11, No. 1, pp. 1-13.

Perino, Gregory

- 1967 The Kaskaskia Indian Village Site, 1700-1832. The Conference on Historic Site Archaeology Papers 1965-1966. Vol. 1, pp. 127-130.

Peterson, Eugene T.

- 1963 Clay Pipes: A Footnote to Mackinac's History, Mackinac History, Leaflet No. 7, Mackinac Island State Park Commission, Mackinac Island, Michigan.

Peterson, Harold L.

- 1968 The Book of the Continental Soldier. The Stackpole Company, Harrisburg, PA.

Quaife, Milo M.

- 1914 Marking the Site of Old Fort St. Joseph. Illinois State Historical Society, Vol. 6, No. 4, pp. 490-495.
- 1937 A Footnote on Fire Steels. Minnesota History, Vol. 18, pp. 36-41. Minnesota Historical Society, St. Paul.

Quimby, George I.

- 1939 European Trade Artifacts as Chronological Indicators of the Archaeology of the Historic Period in Michigan. Papers of the Michigan Academy of Science, Arts, and Letters, Vol. 24, pp. 25-31. Ann Arbor.
- 1942 Indian Trade Objects in Michigan and Louisiana. Papers of the Michigan Academy of Science, Arts, and Letters, Vol. 27, pp. 543-551. Ann Arbor.
- 1963 The Gros Cap Cemetery Site in Mackinac County, Michigan. Michigan Archaeologist, Vol. 9, No. 4, pp. 50-57. Ann Arbor.

Quimby, George I.

- 1966 Indian Culture and European Trade Goods: The Archaeology of the Historic Period in the Western Great Lakes Region. The University of Wisconsin Press, Madison.

Sleen, W. G. N. Van Der

- 1967 A Handbook on Beads. Liberty Cap Books, York, Pennsylvania.

South, Stanley A.

- 1964 Analysis of Buttons From Brunswick Town and Fort Fisher. The Florida Anthropologist, Vol. 17, No. 2, pp. 113-133. Gainesville.

Stone, Lyle M.

- 1970 Formal Classification and the Analysis of Historical Artifacts. Historical Archaeology, Vol. 4, pp. 90-102. Society for Historical Archaeology, Bethlehem, Pennsylvania.
- 1972 Archaeological Investigation of the Marquette Mission Site, St. Ignace, Michigan 1971: A Preliminary Report. Reports in Mackinac History and Archaeology, No. 1, Mackinac Island State Park Commission, Lansing.
- 1974 Fort Michilimackinac 1715-1781 An Archaeological Perspective on the Revolutionary Frontier. Publications of the Museum, Michigan State University, East Lansing.

The St. Joseph Baptismal Register

Mississippi Valley Historical Review, XIII, September 1926, pp. 201-239.

Tordoff, Judith D.

- 1976 Report of Archaeological Excavations at Fort Ouiatenon 1974 and 1975. MS on file, Michigan State University Museum, East Lansing.

Weissert, Charles A., ed.

- 1923 Southwest Michigan and St. Joseph County.
Historic Michigan, Land of the Great Lakes,
Vol. 3. Berrien Springs, Michigan.

West, George A.

- 1934 Tobacco, Pipes, and Smoking Customs of the
American Indian. Bulletin of the Public Museum
of the City of Milwaukee, Vol. XVII and XVIII,
pp. 1-994. Milwaukee.

Wheeler, Robert C. et al.

- 1975 Voices from the Rapids: An Underwater Search
for Fur Trade Artifacts 1960-73. Minnesota
Historical Archaeology Series, No. 3, St. Paul.

Witthoft, John

- 1966 A History of Gunflints. Pennsylvania Archaeologi
Archaeologist, Vol. 36, Nos. 1,2, pp. 12-49.
Gettysburg.

Wittry, Warren L.

- 1963 The Bell Site, Wn 9, An Early Historic Fox
Village. Wisconsin Archaeologist, New Series
Vol. 44, No. 1. Wisconsin Archaeological
Society, Milwaukee.

Wood, Alice S.

- 1974 A Catalogue of Jesuit and Ornamental Rings from
Western New York State: Collections of Charles F.
Wray and the Rochester Museum and Science Center.
Historical Archaeology, Vol. VIII, pp. 83-104.
Columbia, South Carolina.

