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An Analysis of the Artifacts from the Historic Components of the Elam Site (20AE195), Allegan County, Michigan

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AN ANALYSIS OF THE ARTIFACTS FROM THE HISTORIC COMPONENTS OF THE ELAM SITE (20AE195), ALLEGAN COUNTY, MICHIGAN

by

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Western Michigan University, 1992

This study involved the analysis of the historic artifacts recovered from the excavation of the Elam site (20AE195) during the 1978, 1983, 1985, and 1987 field seasons, conducted by Western Michigan University.

The results of the analysis indicate that there were at least two pre-twentieth century historic occupations of the site. The first dates between A.D. 1680-1770, and was a transient and probably repeated usage of the site by Potawatomi Indians. The second dating to approximately A.D. 1840, is possibly the short term, temporary residence of an unknown fur trader, prior to settlement of the area by Americans.

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CHAPTER I

THE ELAM SITE

Introduction

The Elam site is a multi-component site with occupations during the Early Woodland, Late Woodland, Middle Historic periods, the mid-nineteenth century, as well as a still existent twentieth century occupation. The purpose of this thesis is the delineation of the historic components through analysis of the artifacts recovered during excavations from all four field seasons, examination of spatial distribution of the artifacts across the site, comparison of data to those from other historic sites in the upper Great Lakes region, and analysis of archival records and histories pertaining to the area.

Chapter I includes a brief introduction to the Elam site and a history of investigations. Chapter II presents a description and analysis of the historic artifacts. In Chapter III conclusions will be drawn on the number of historic occupations, the probable date ranges during which they were occupied, and the ethnicity of the inhabitants of the site. A catalogue of all historic artifacts will be presented in an Appendix A.

Site Setting

The Elam site (20AE195) is located on property owned by Mr. and Mrs. Harry Elam, in the SE 1/4, SE 1/4 of Section 9, and the SW 1/4, SW 1/4 of Section 10, Valley township (formerly Pine Plains), Allegan County, Michigan (Figure 1). It lies in a small field, on a bend of the Kalamazoo River, approximately 40 km upstream from the mouth, at Lake Michigan. The Elam family currently resides on the property.

The Kalamazoo River is located between the larger Grand and St. Joseph rivers, in southwest Michigan, and is considered to be the historical cultural boundary between the Potawatomi and the Ottawa Indians in Michigan (Fitting 1975; Tanner 1987). Prior to the appearance of non-Indian settlers, the area encompassing Allegan and Barry counties was used as a seasonal hunting ground by both of the above tribes (Johnson 1880).

Summary of Investigations

Located during the Kalamazoo Basin Survey (KBS) in 1977 by Dr. William Cremin of Western Michigan University (Cremin, Hoxie, and Weston 1978), the Elam site was excavated by the Western Michigan University Archaeological Field School in 1978, 1983, 1985, and 1987 under the direction of Dr. Elizabeth Garland. Faunal and botanical remains from the 1978 field season were summarized in two master's theses (Barr 1979; Parachini 1981). Lithics from the

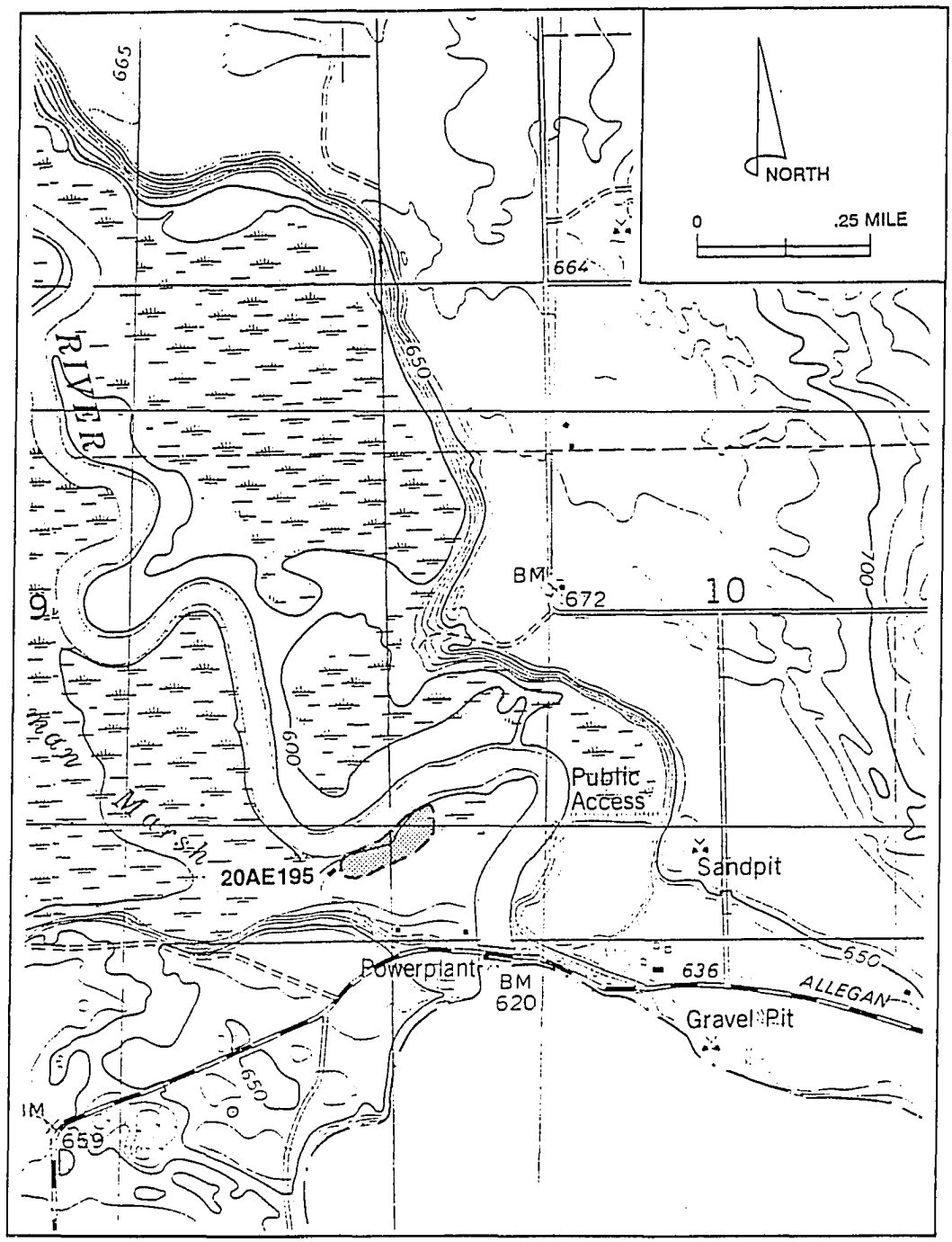


Figure 1. The Elam Site (20AE195), Allegan County, Michigan.

Source: USGS, 7.5" Millgrove, Michigan Quadrangle (1981)

1978 and 1983 field seasons were analyzed and presented in a Western Michigan University Honors College paper (Campbell 1983). Preliminary analysis of botanical remains from all field seasons was presented in a paper at the 1989 Midwest Conference (DeRoo and Parker 1989), and in a master's thesis (DeRoo 1991). Cogswell (1986) has delineated a small Early Woodland component, and Garland (1986, 1989) a large Late Woodland component. This study deals with the previously undocumented historic components.

Site Description

The Elam site (Figure 2) is a multi-component site lying along terraces on the south side of the Kalamazoo River, near Lake Allegan, just downstream from a small dam. The site encompasses an area measuring approximately 8400 m^2.

The greater part of the site lies on a low floodplain terrace (184.60 masl). An upper terrace (189.00 masl) is also a part of the site. Historic and prehistoric artifacts have been recovered from both terraces.

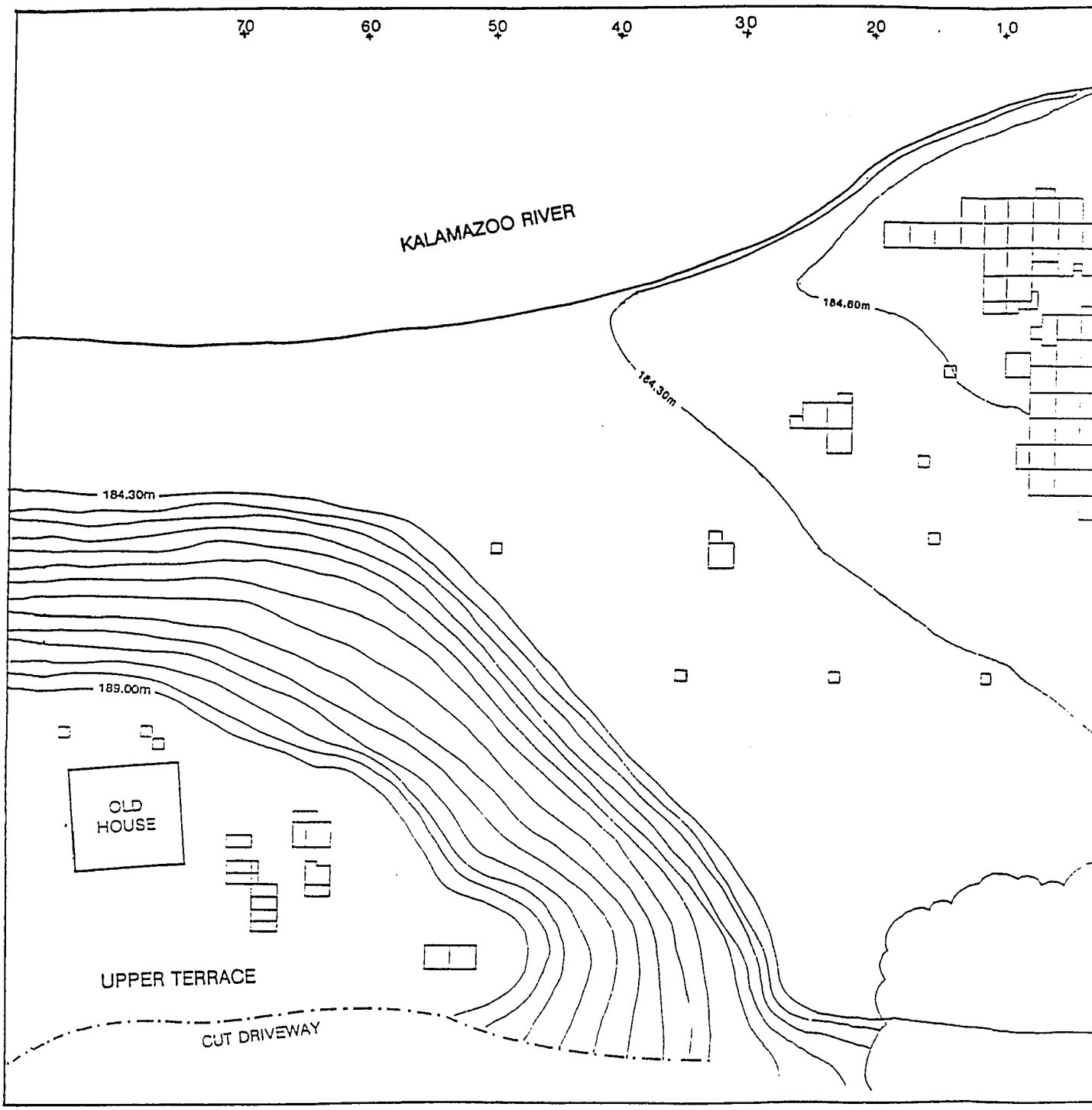


Figure 2. The Elam Site (20AE195): Showing Area of E

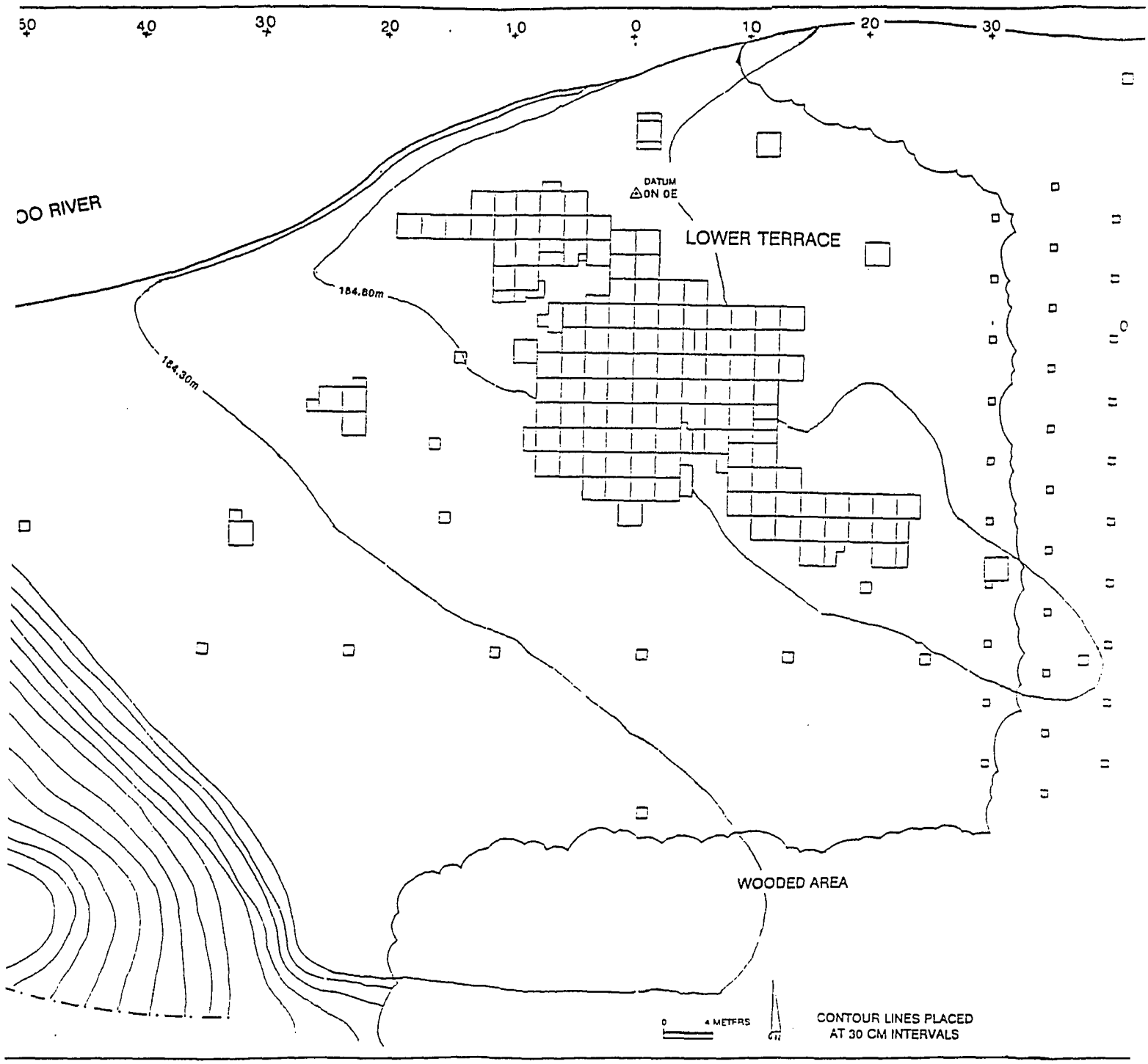
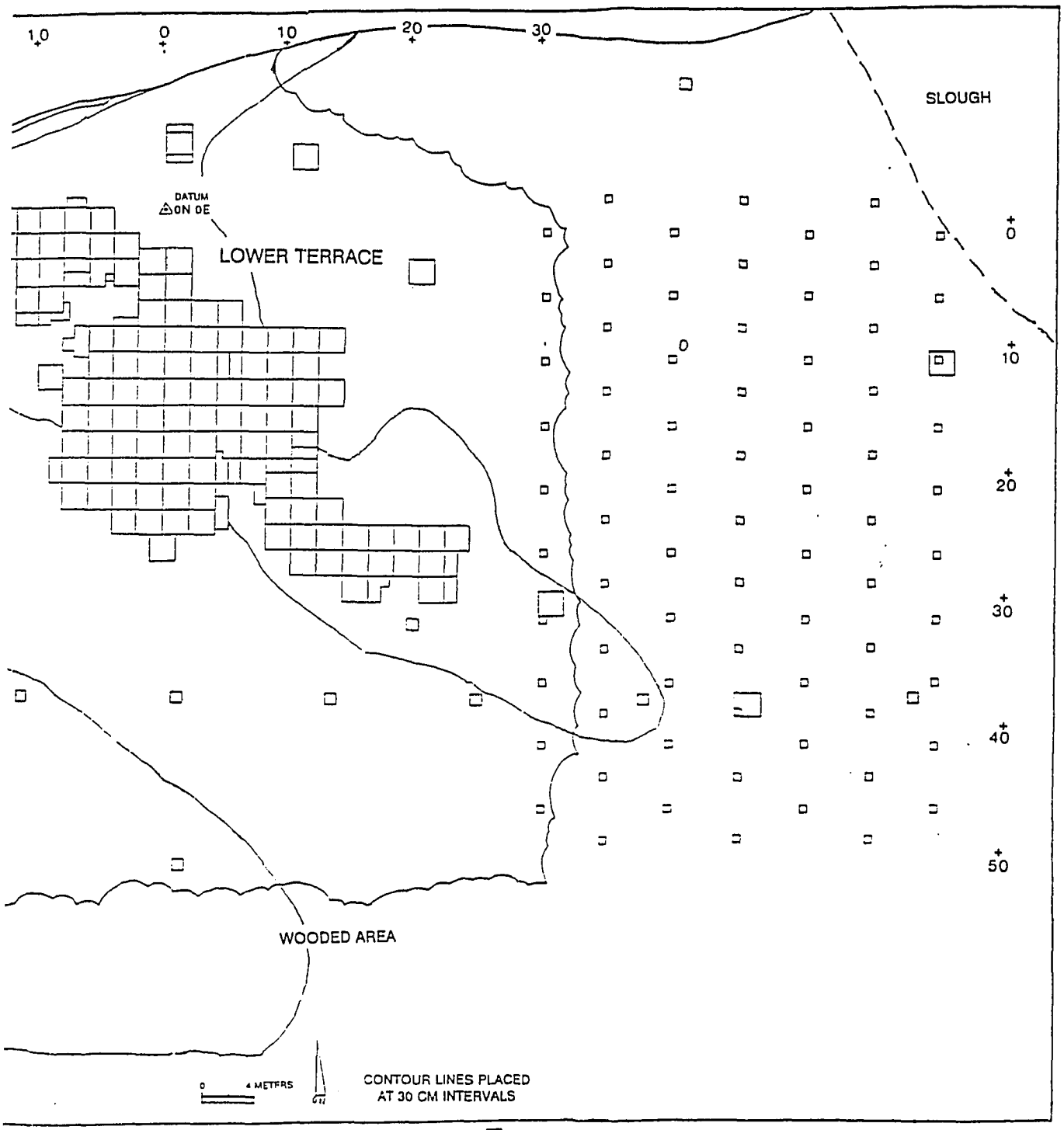


Figure 2. The Elam Site (20AE195): Showing Area of Excavation and Upper and Lower Terraces.



ing Area of Excavation and Upper and Lower Terraces.

CHAPTER II

ARTIFACT ANALYSIS

Several different categories of historic artifacts were recovered from the Elam site and were analyzed for this report, including artifacts of European, American, and Native American manufacture. These will be presented in alphabetical order, with the exception of artifacts of native manufacture which may be prehistoric in origin.

Beads

Glass trade beads were introduced into the Great Lakes region around 1610 and continued to be traded into the latter half of the nineteenth century (Quimby 1966). One of the more common types of artifacts recovered from Historic period sites, glass beads have undergone numerous style changes through the course of history. This variation over time allows researchers to narrow down occupancy date ranges of Historic Indian period sites with greater accuracy than would otherwise be possible.

Several different systems have been created for the classification of glass trade beads (Karklins 1982; Kidd and Kidd 1970, 1983; Ross 1974; Spector 1976; Stone 1974). The system created by Kidd and Kidd (1983) is perhaps the most widely known and used. It is based on differences in manufacturing techniques,

and is useful for comparison of beads from many different sites. The major drawback is the inclusion of only two methods of manufacture: (1) hollow cane, and (2) wire wound (W).

In 1974, Ross introduced a new system of classification, which included three other methods of manufacture: (1) mandrel pressed, (2) blown, and (3) molded. Although beads from outside of the two major classes could now be analyzed, comparison between previously described collections was still difficult.

What was needed was a system that combined the two variants enabling researchers to analyze beads of all types, while still simplifying the comparison of different collections. In 1982, Karklins added four new classifications to Kidd and Kidd's (1983) original two: (1) wound-on-drawn (WD), (2) mold pressed (MP), (3) blown (B), and (4) molded (M). This inclusion allowed for the recovery of lesser known bead types, while still maintaining the simplicity for intra-site comparison which made the Kidds system so serviceable.

Of the six types, hollow cane beads are the most common. They are manufactured from a molten mass of glass into which an air bubble is introduced. The mass is drawn out to form a hollow tube, which is broken into the desired lengths after cooling. The bead segments can be left in this original form, or tumbled in a mixture of sand and ash to round the edges (Good 1977; Karklins 1974; 1982; Kidd and Kidd 1983; Ross 1974; van der Sleen 1967; Spector 1976; Stone 1974).

The production of wire wound beads begins in a similar manner to hollow

cane beads, lacking only the introduction of the air bubble into the molten mass. This results in a solid rod rather than a hollow tube. The rod is then broken into smaller segments, reheated, and finally wound around a mandrel to form the desired size and shape bead (Good 1977; Karklins 1974, 1982; Kidd and Kidd 1983; Ross 1974; van der Sleen 1967; Spector 1976; Stone 1974).

Wound-on-drawn beads are produced from a length of hollow tube about which is wound another tube of glass of a different color. It appears to be a wire wound bead from the exterior surface, but its interior contains linear bubbles, a characteristic of hollow cane manufacture. This type of bead is extremely rare, in fact, only one specimen has been reported (Karklins 1982), thus its separation into a distinct category may be premature.

Mold pressed beads are manufactured with a two piece mold. Although the seam was usually ground off, the mold mark may still be visible (Karklins 1982).

Blown beads are manufactured by blowing an air bubble into a mass of glass. This could be a single mass of glass, a mass within a two piece mold, or a series of bubbles in a glass tube (Karklins 1982).

Molded beads, also called "tile beads" (Karklin's 1982) or "Prosser" molded beads (Good 1977; Herbstritt 1987; Karklins 1982; Ross 1974; Sprague 1983) are thought to have been manufactured using the Prosser method of button production (Good 1977; Ross 1974; Sprague 1983). They are formed in a press mold and can often be identified by the presence of a mold line about the

equator of the bead (Sprague 1983). Although the Prosser Method was patented in 1840, Sprague (1983) believes that it was in use by 1837, and some researchers believe that molded beads may have been manufactured even earlier than this date (Herbstritt 1987; Karklins 1982).

James Herbstritt (1987) did the preliminary analysis of the glass trade beads recovered from the 1985 field season at the Elam site using Kidd and Kidd's (1983) system, with one specimen, a "Prosser" molded bead, being given no classification. The complete collection, including artifacts from all field seasons was analyzed, by the author, using Karklin's (1982) classification system.

The beads were first divided into three classes based on manufacturing techniques: (1) hollow cane, (2) wire wound, and (3) molded. They were next examined to determine size, color, shape, and diaphaneity. Size grade was determined using Kidd and Kidd's (1983) ranges of (a) very small (<2 mm), (b) small (2 mm-4 mm), (c) medium (4 mm-6 mm), (d) large (6 mm-10 mm), and (e) very large (>10 mm). In all, twenty-six glass beads were recovered (Table 1).

Type If (Kidd and Kidd 1983) is a simple, faceted, monochromatic, unrounded, tubular bead. Two varieties of Type If were recovered, neither with a counterpart in the Kidd and Kidd (1983) system, although both are common on Late Historic sites in the Upper Great Lakes region (Quimby 1964).

The first variety (Figure 3a) is translucent, deep ultramarine, and has six faces (eighteen facets). This variety is often referred to as a "Russian" trade bead (Herrick 1958:20; Noel Hume 1969:54). Five beads of this variety were found at

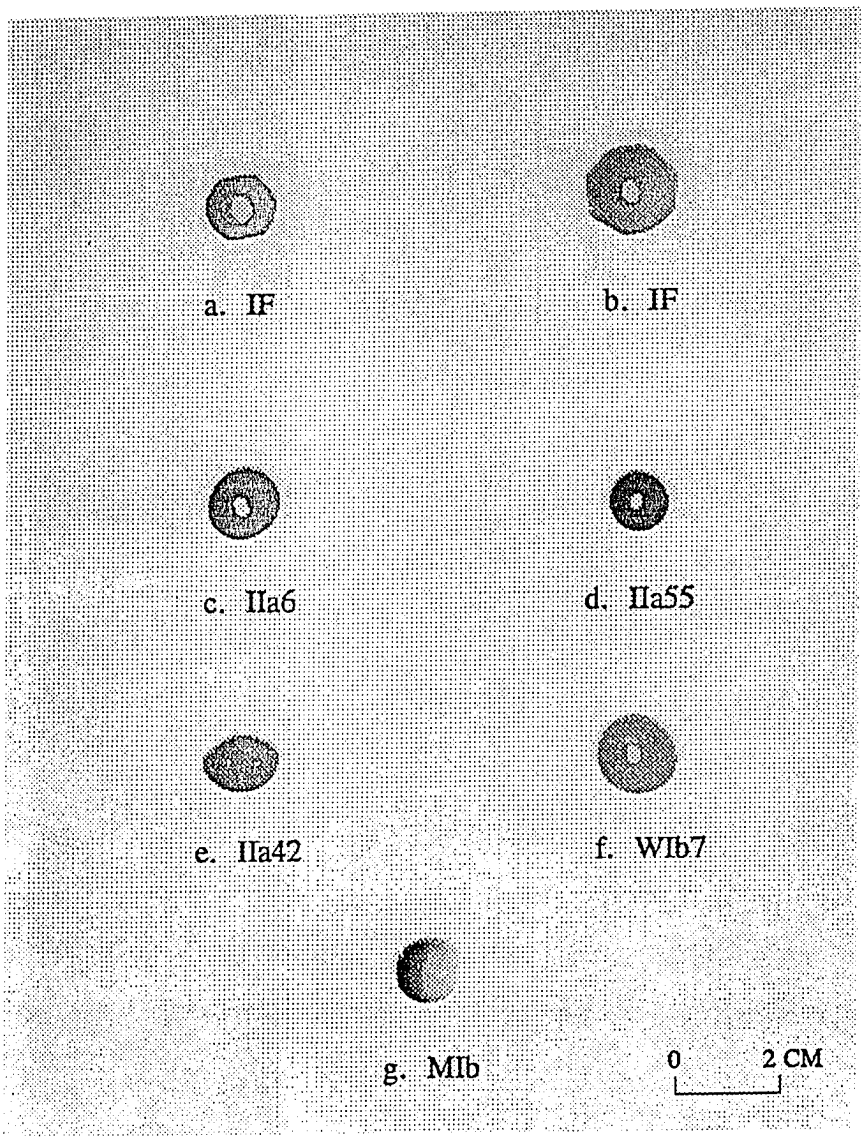


Figure 3. Glass Trade Beads.

the Elam site. Their sizes ranged from medium/large to large.

Table 1

Elam Site Bead Types, Analogies to Stone Classifications, and Date Ranges

Elam Type (Kidd and Kidd 1983)	Stone (1974) Analog	Date Range	Qty
If (Amber)	none	1760-1820	2
If (Ultramarine)	none	1760-1820	5
IIa6	CI, SA, T10, Va	1670-1760	15
IIa42	none	pre-1770	1
IIa55	CI, SA, T1, Vc-d	pre-1781	1
WIb7	CII, SA, T8, Vb	1700-1820	1
MIb	none	post-1842	1

The second variety (Figure 3b) is translucent, amber, and is represented by two specimens, both large, one six sided (eighteen facets), and the other seven sided (twenty-one facets).

Brightly colored, monochromatic, multi-faceted beads are considered to be diagnostic of the Late Historic period (1760-1820) in the Upper Great Lakes region (Quimby 1966). Similar varieties have been recovered from several Late Historic period sites in this region (Table 2), including the Ada site (Herrick 1958; Mead 1984), the Battle Point site (Mead 1984), the Matthews site (Cleland 1972a), and Fort St. Joseph (Hulse 1977).

Type IIa was the most prevalent type of bead recovered from the Elam site. It is a simple, rounded, monochromatic, hollow cane bead (Kidd and Kidd

Table 2

Date Ranges of Sites in the Great Lakes Region with Same Bead Types as Those Found on the Elam Site

Elam Bead Types (Kidd and Kidd 1983)	Sites Recovered	Date Range
If	Ada site (Mead 1984)	1810-1830
	Battle Point site(Mead 1984)	1810-1830
	Matthews site (Cleland 1972a)	1820-1830
	Guebert site (Good 1972)	1719-1833
	Fort St. Joseph (Hulse 1977)	French period 1687-1761 British period 1761-1781
	Kipp's Trading Post (Woolworth and Wood 1960)	1826-1831
IIa6	Lasanen site (Cleland 1971)	1670-1696
	Fort Michilimackinac (Stone 1974)	1715-1781
	Fort St. Joseph (Hulse 1977)	French period 1687-1761 British period 1761-1781
	Rock Island (Mason 1986)	1641-1770
	Guebert site (Good 1972)	1719-1833
	Tunica collection (Brain 1979)	
	Fletcher site cemetery (Mainfort 1979)	1750-1780
	Gros Cap (Nern and Cleland 1974)	1670-1705
IIa42	Rock Island (Mason 1986)	1641-1770
IIa55	Lasanen site (Cleland 1971)	1670-1696
	Fort St. Joseph (Hulse 1977)	French Period 1687-1761 British period 1761-1781
	Fort Michilimackinac (Stone 1974)	1715-1781
WIb7	Fourteen Mile Point cemetery (Mead 1984)	
	Ada site (Mead 1984)	1810-1830
	Battle Point site (Mead 1984)	1810-1830
	Petoskey burial (Mead 1984)	
	Kipp's Trading Post (Woolworth and Wood 1960)	1826-1831
	Gros Cap (Nern and Cleland 1974)	1670-1705
MIb	none	

1983). Three varieties were found. The first, IIa6, is opaque black (Figure 3c). Fifteen of this variety were recovered, ranging in shape from spherical to sub-spherical. The beads, although they differ in shape, all appear to be the same variety, with minor variations attributable to vagaries in manufacture. The size ranged from medium to large. Two of the beads were spherical, and thirteen were sub-spherical. This variety is common in Middle Historic period (1670-1760) bead assemblages in the Great Lakes region, and has been recovered from the Lasanen site (Cleland 1971), Fort Michilimackinac (Stone 1974), Fort St. Joseph (Hulse 1977), Rock Island II (Mason 1986), and the Fletcher site cemetery (Mainfort 1979). There is general agreement that this variety was traded in the Great Lakes region until 1750 (Good 1972; Hulse 1977; Mason 1986; Stone 1974). However, there is some disagreement as to its earliest appearance. Some believe it may have arrived as early as 1670 (Good 1972; Mason 1986), while others give it a more recent entrance date of 1710 (Hulse 1977; Stone 1974). This type has been recovered from the Lasanen site, in northern Michigan, dating between 1670 and 1696, indicating its presence in the upper Great Lakes region prior to 1700 (Cleland 1971).

Variety IIa55 (Figure 3d) was represented by one specimen, a dark blue, transparent, medium sized, oval bead. This type has been recovered from the Lasanen site (Cleland 1971), Fort St. Joseph (Hulse 1977), and Fort Michilimackinac (Stone 1974).

One other variety of hollow cane bead was recovered, IIa42, a medium-

large, opaque, turquoise-green, oval bead, with tapered ends (Figure 3e). One specimen was recovered during excavations at the Rock Island II site, in northern Wisconsin, however, it was not assignable to a specific occupation. The Rock Island II site was occupied until 1770 (Mason 1986).

One wire wound bead, WIb7, was recovered from the Elam site. It is a medium/large, amber, translucent, sub-spherical bead, with some superficial pitting (Figure 3f). There is some discrepancy as to the time period during which this variety was traded. Some researchers believe WIb7 was more common between 1700-1750 (Mason 1986; Stone 1974). However, this variety, along with other monochromatic, wire wound beads, has been recovered from Late Historic period sites in the Upper Great Lakes, such as Fourteen Mile Point cemetery (Mead 1984), the Ada site (Mead 1984; Quimby 1966), the Battle Point site (Mead 1984), the Petoskey burial (Mead 1984), and Kipp's Trading Post (Woolworth and Wood 1960). Given the occurrence of this variety at other nearby Late Historic period sites (Ada site in Kent county, Michigan and Battle Point site in Ottawa county, Michigan), the Elam WIb7 variety bead would appear to be contemporary with the If varieties previously noted.

The last bead type found at the Elam site was MIb, a medium sized, light-blue, opaque, sub-spherical, molded bead with a raised mold mark about the circumference (Figure 3g). This is an unusual find on Historic period sites, and no exact match has been found in the literature. However, one bead, with a mold seam, was recovered from Fort St. Joseph, probably from the post-fort occupancy

phase of 1781-1820 (Hulse 1977), and one "Prosser" bead was found at Fort Vancouver, Washington, which has been dated between 1829-1860 (Ross 1974).

In general, the analysis of the glass trade bead assemblage indicates two Historic occupations predating the twentieth century. The bead types IIa6 and IIa55, (and possibly WIb7), are indicative of Quimby's (1966) Middle Historic occupation, dating between 1670 and 1760. Type If is a definite marker of Quimby's (1966) Late Historic period sites (1760-1820), and the occurrence together of types If and wire wound beads at other Late Historic period sites in this area (Mead 1984) indicate that in this case, variety WIb7 may belong to a Late Historic period assemblage.

Although molded beads have been recovered from sites dating to this time period, the "Prosser" method of button manufacture was not in use until 1837 (Sprague 1983). The "Prosser" molded bead from the Elam site thus indicates the presence of an occupation post-dating the Late Historic period.

Buttons

The Elam site Historic artifact assemblage includes twenty-one buttons, or button fragments (Figure 4). They were analyzed first by material type. Five types were found: (1) metal, (2) shell, (3) glass, (4) bone, and (5) vegetable ivory. These have been further subdivided into separate varieties based on stylistic attributes.

Type I includes three varieties of metal buttons. The first (Figure 4a), a

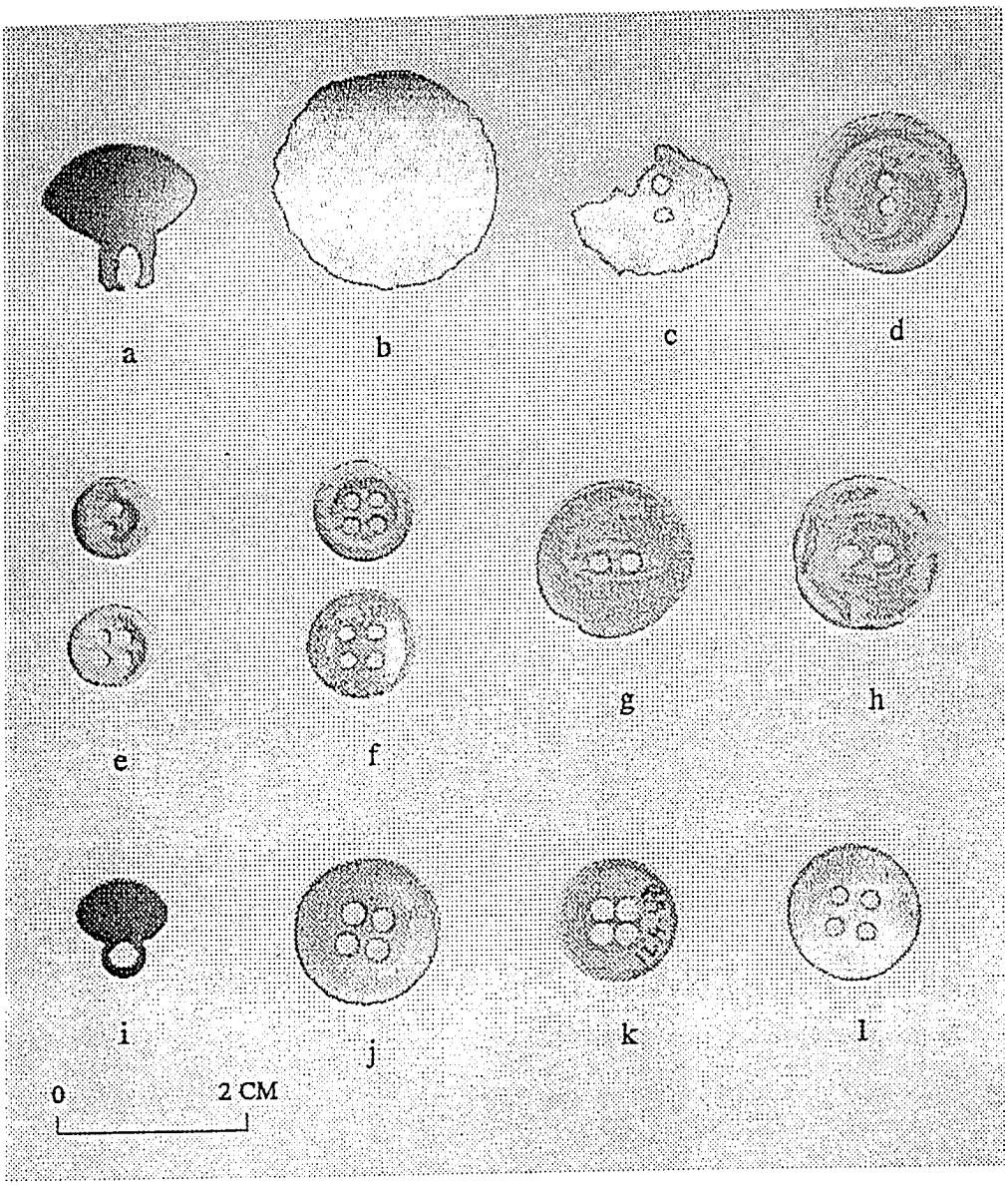


Figure 4. Buttons: a-c. Metal; d-h. Shell; i. Glass; j. Bone; k-l. Vegetable Ivory.

hollow-domed button, represented by three specimens, was manufactured in three pieces. The one complete specimen exhibits a mold seam where the face and the back were joined. The shank was then soldered onto the back. Both the face and back are rounded and concave in shape, with the face exhibiting circular wear striations. None of the specimens exhibited decoration. This variety is similar in shape to South's (1964:115) Types 1 and 2, both dating between 1726-1776. In the Upper Great Lakes three sites have yielded buttons of this variety, the Lasanen site (Bell button), an historic Ottawa burial ground dating between 1670 and 1696 (Cleland 1971), Fort Michilimackinac Type CII,SB,Tl,VA which Stone (1974) dates between 1740-1760, and the Fletcher site cemetery, an historic Ottawa or Chippewa cemetery dating between 1740 and 1765 (Mainfort 1979).

The second variety (Figure 4b) was also manufactured in three pieces. Both of the specimens were large, flattened, hollow disks, with convex faces and flat backs. All were badly rusted, and the type of metal used could not be determined. The face appeared to have folded over onto the back. This variety is similar in shape to South's Type 25, which he dates between 1837-1865 (South 1964:122).

The third variety of metal button was manufactured in one piece (Figure 4c). It was four holed, with a crimped edge. The one badly rusted specimen had a concave face with the edges raised and curled over onto the back. No counterpart was found in the literature. Only one specimen was recovered.

Shell buttons were the most common type found on the site. Four

varieties were recovered. The first, represented by one specimen, was a large, two-holed button, with a machine engraved face (Figure 4d). The face and back were both flat. Machine engraving came into use after 1850 (Albert and Kent 1949).

The second variety of shell button was small, two-holed, and undecorated. The face and back were flat, and a depression is present in the face where the holes were machine drilled (Figure 4e). It resembles South's Type 22, which dates between 1800-1865 (Noel-Hume 1969:Figure 23; South 1964:121-122). Two were recovered.

The third, of which three were recovered, was a small, four-holed, undecorated variety, similar to the above except for the number of holes (Figure 4e-f). It also matches South's Type 22 (Noel-Hume 1969:Figure 23; South 1964:121-122).

The final shell button (Figure 4g-h) was large, two-holed, and was decorated in the fisheye style (Schroeder 1971). The fisheye pattern is composed of an oval, eye shaped crevice on the face, within which the holes are drilled. One of the specimens exhibits a geometrically patterned, scalloped design (Figure 4g). This variety appeared in the Sears, Roebuck and Co. catalogs of 1908 (Schroeder 1971) and 1927 (Mirken 1970). They do not appear in earlier catalogs from the years 1902 (Anonymous 1969) or 1897 (Israel 1976). Thus they may be considered to date to the first quarter of the twentieth century or later. Two specimens were recovered.

The third type of button found on the Elam site was glass. Only one variety was found, a small blue glass globule, with a wire shank. Both specimens recovered were of a bright navy blue translucent glass, with a wire shank embedded in the base (Figure 4i). The button was probably manufactured using a scissors mold, which would simultaneously insert the metal shank in the button back. This type has been found on Paris Exposition 1867 cards, but was probably manufactured before this time (Albert and Kent 1949).

Two specimens of one variety of bone button were recovered (Figure 4j). They were flat, four-holed, undecorated varieties which appear to match South's Type 20, dating between 1800-1865 (Noel-Hume 1969:Figure 23, South 1964:121). Bone buttons of this variety were also found at the late eighteenth/early nineteenth century Mill Creek site (Martin 1985).

The final type of button in the Elam assemblage was manufactured of vegetable ivory. Vegetable ivory was made from corozo or tagua palm nuts, in imitation of tusk ivory (Luscomb 1967). They were manufactured between 1859 and 1927 (Wade 1914; Mirken 1970). Two varieties were recovered, both four-holed. The first was beige in color, with a concave face and flat back (Figure 4k). The other was dark brown, with a concave face and a convex back (Figure 4l). The holes were machine bored. Vegetable ivory buttons were not manufactured until 1864 in the United States (Albert and Kent 1949).

Due to the lack of discernible decoration on the metal buttons in the Elam site collection, it is difficult to place them within a definite time frame. However,

certain generalizations may be made. During the late sixteenth and early seventeenth centuries, buttons tended to be small, round, of white metal or brass, and cast in two pieces (Noel-Hume 1969). Hollow cast buttons were prevalent during the first half of the eighteenth century, whereas by the second half, large flat disk buttons were more common (Noel-Hume 1969).

The Elam hollow domed metal buttons probably date to Quimby's (1966) Middle Historic period (1670-1760), based on both (1) shape, and (2) comparative analysis of buttons from other sites (Cleland 1971; Mainfort 1979; Stone 1974). The rest of the Elam button assemblage all appears to post-date Quimby's Late Historic period (1760-1820). Although some types have entry dates before 1820, none of the collection could be confidently placed solely within the Late Historic period, and all were in use in the twentieth century.

Glass

Numerous glass fragments (207) were recovered, the majority too fragmentary to be of use for dating purposes. These included forty-six fragments of window glass, and 161 glass vessel fragments: thirty-six aqua, fifty-seven amber, two amethyst, two olive green, and sixty-four clear, of which four were acid etched.

Color of glass can be useful in providing a general time frame for the occupation of Historic period sites. Solarizing, the discoloration of glass when exposed to sunlight due to additives used in the manufacturing process, is often

found in glass manufactured during the late nineteenth and early twentieth century. For instance, clear glass would take on amethyst shades when exposed to sunlight, due to the addition of manganese during manufacture. The use of manganese was discontinued after the beginning of World War I, due to difficulties in obtaining supplies from Germany. It was replaced by selenium which weathers yellow rather than amethyst (Jones et al. 1989; Munsey 1970).

In addition to color, certain characteristics of bottles may be indicative of their period of usage, such as maker's marks, design elements, and manufacturing methods. Very little of the glass from the site was useful for dating purposes. However, two glass liners from lightning closure jars were found. This type of closure was patented in 1875, and is still in use today (Jones et al. 1989). The only other datable glass artifact was one fragment of a colorless bottle base imprinted

"...C. 22. 1903
JULY .17. 1906".

There is nothing to indicate that the glass recovered from the Elam site can not be assigned to the known twentieth century occupation of the site. The earliest manufacturing time available for this material would be the late nineteenth century, and all of it was in use in the twentieth century.

Gunflints and Bullets

Gunflints were used in flintlock guns until about 1820, when the invention of percussion lock guns made them virtually obsolete. They did, however, continue to be used on a small scale after this date (Blanchette 1975).

The earliest gunflints exported to North America were manufactured in Jutland, Denmark. Most of these were tiny, and made of a mottled, chalky flint. They were bifacially-flaked, bilaterally-symmetrical, and square to rectangular in shape. They were not bevelled toward one face as were later gunflints. Their greatest period of usage occurred between 1620-1675 (Blanchette 1975, Witthoft 1966).

Beginning around 1650, the Danish flints began to be replaced by wedge shaped gunflints, often called "Dutch" gunflints (Blanchette 1975:46; Witthoft 1966:26). At one time, these flints were thought to have originated in the Netherlands, hence the term. This is no longer considered to be true. White (1975:65) calls them "English gunspalls" and believes that they were manufactured in England, Denmark, America (one site) and probably France. For the sake of uniformity, in this text they will be referred to as wedge shaped gunflints.

The wedge shaped flint was manufactured by striking a flake from a flint nodule and retouching it to form the desired shape and size gunflint. The shape of the finished product was dependent on both the size of the original nodule and the production technique used. The back was normally rounded through

secondary flaking, and there was no plateau on the face, as was found on the later French and English prismatic blade gunflints. Rather, the back sloped away from the face on three edges, with the face sloping down to the thinnest edge.

The majority of these gunflints were manufactured of a grey to grey/black, chalky flint, which often contained tiny white voids. However, they were also manufactured from flints of various shades of tan and white (Witthoft 1966).

Around 1740, the wedge shaped flint began to be replaced by the superior French prismatic blade gunflint, and by 1770 it had virtually disappeared. The French blade gunflint first appeared in North America, in small quantities, "around" 1719 (Blanchette 1975). By 1740, they had become an ordinary trade item, and at the time of the American Revolution were virtually the only gunflint in use (Blanchette 1975; Hulse 1977; Witthoft 1966).

The French prismatic blade gunflint had a shape similar to the wedge shaped gunflint, with the back rounded through secondary flaking. One distinguishing characteristic of the French gunflint was the presence of a plateau, or face, on one side, the result of the removal of one large flake. This plateau was not found on the earlier gunflints, but was present on all prismatic blade gunflints. The French blade gunflint was manufactured by detaching a blade of flint from a core, and then sectioning it into smaller lengths from which the individual gunflint was crafted.

Although references have been made to black French gunflints (Hamilton 1964; Smith 1960), the majority were manufactured of a translucent blond, or

honey, colored flint. The color of the gunflint, and the rounded back are the two main characteristics which distinguish the French blade gunflints.

The French gunflint was eventually replaced by the English prismatic blade gunflint. During the War of 1812, English and French flints were used on approximately an equal basis, but by 1820, the English gunflint had completely replaced the French (Blanchette 1975). The English blade gunflint differed from the French primarily in the lack of secondary flaking along the back and sides. This resulted in an angular gunflint with a squared back. The color range of the English flint was from dead black to dark grey. English blade gunflints have so far not been found in an eighteenth century context and are not found in any quantity in sites dating before the War of 1812 (Brain 1979). However, by 1820, the English blade gunflint was virtually the only type in use (Blanchette 1975).

Four gunflints were recovered during the excavation of the Elam site. These have been typed as follows: (a) one wedge shaped gunflint, (b) one French prismatic blade gunflint, and (c) two English prismatic blade gunflints, one the typical angular grey gunflint, the other a black blade gunflint which, judging by the flake scars, was probably used as a strike-a-light.

The wedge shaped flint was manufactured of a grey chert, containing a few white voids (Figure 5a). It has a high back, rounded through secondary flaking, and an angular shoulder, with a face sloping down to the thinnest edge. It has a width of 27 mm, length of 31 mm, and a thickness of 16 mm. Based on the criteria set forth in the previous paragraphs, this gunflint was probably

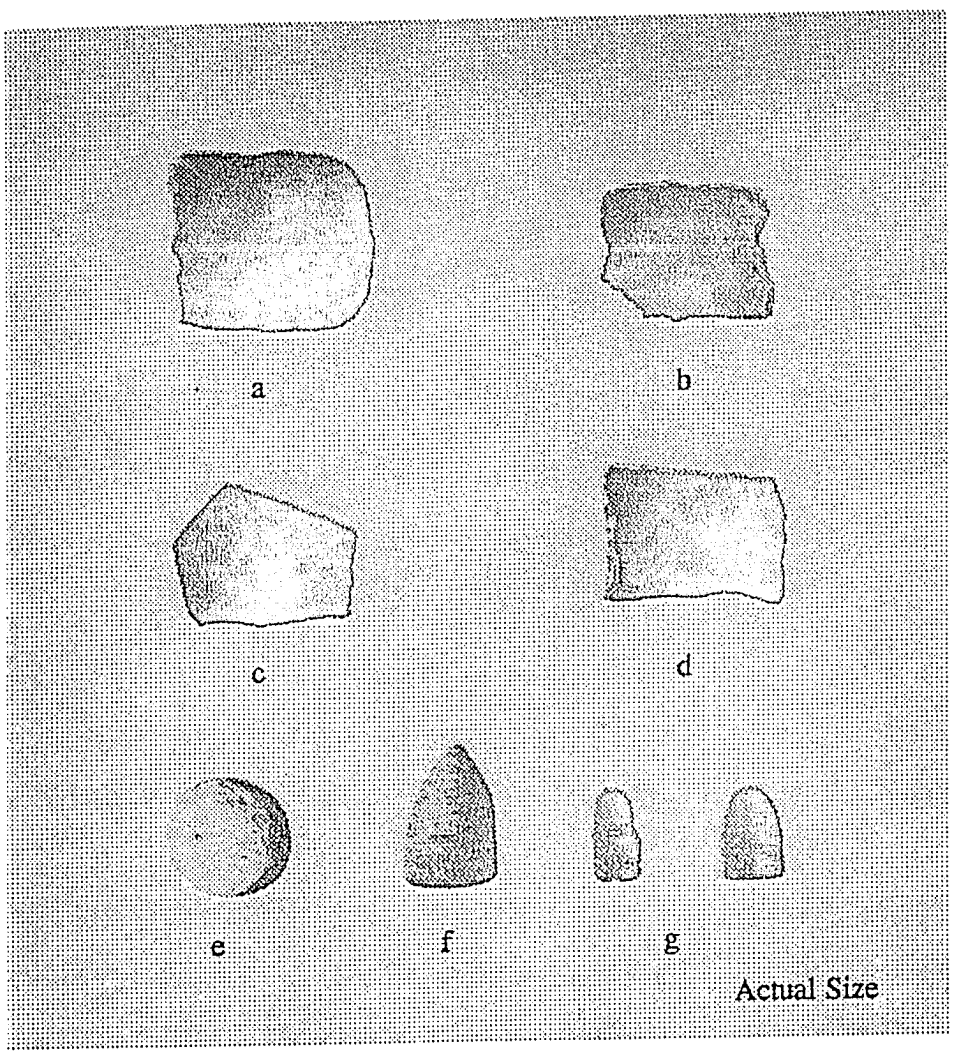


Figure 5. Gunflints and Lead Bullets.

manufactured before 1770.

The one French prismatic blade gunflint recovered was made of a translucent, honey-colored flint (Figure 5b). It shows evidence of extensive secondary flaking. The back of the flint has been broken away through use but was probably rounded in typical French fashion. It has a width of 23 mm, and a thickness of 10 mm. The length was not measurable. This type of gunflint dates between 1740-1820.

Of the two English prismatic blade gunflints found in excavation of the site, one has been extensively scarred through heavy usage, probably as a strike-a-light (Figure 5c). It was manufactured of an opaque black flint. Two flakes of the same material were recovered in association with this gunflint, and are assumed to have been removed from it.

The second English gunflint was fashioned in the typical angular form of English gunflints, of a dark gray flint (Figure 5d). It is longer than it is wide, and the back is squared. It has a width of 23 mm, a length of 30 mm, and a thickness of 12 mm.

In summary, the three prismatic blade gunflints date no earlier than Quimby's (1966) Late Historic period (1760-1820). The French flint, although it was available as early as 1719 (Blanchette 1975), was more prolific after 1740, and was used extensively through the War of 1812 (Blanchette 1975; Hulse 1977; Witthoft 1966). The English flints were equally popular during the war, and were the only flints used after 1820 (Blanchette 1975). The wedge shaped

gunflint dates to Quimby's (1966) Middle Historic period, between 1670-1760.

In addition to the gunflints, lead bullets were also recovered. One whole (Figure 5e) and three spent musket balls were found. Brose (1983) notes that lead balls have been found at many Middle Historic period (1670-1760) sites, and should be expected at any site where gunflints or gun parts are recovered.

Three minie balls were also recovered (Figure 5f). All were conical in shape, with a flat base. Just above the base was a shallow horizontal groove, which ran around the entire circumference. Noel-Hume (1969) mentions that minie balls were introduced in the early nineteenth century, and had been adopted in the United States by 1852 (Noel-Hume 1969; Pittman 1987). Musket balls, however, being easier to cast, continued to be used along with the minie ball.

Due to the long history of use of the musket ball, any attempt to date the Elam specimens would be speculative. The minie balls, however, date to a period encompassing and succeeding Quimby's (1966) Late Historic period.

Three smaller lead bullets were also recovered, all approximately .22 gauge in size. Two of the specimens had one horizontal row of vertical incised lines running around the circumference just above the base (Figure 5g). The third bullet had a base which covered the lower half of the bullet, and was covered with incised cross hatching (Figure 5h).

Historic Ceramics

A large number of Historic ceramics were recovered from the Elam site, from both the upper and lower terraces. The site has been occupied for much of the twentieth century, and these artifacts were assumed to have originated with this occupation. However, many of the ceramics have a terminal date well within the nineteenth century, indicating a previously undocumented habitation of the site in the mid-nineteenth century.

The majority of the ceramics sherds (36) recovered were undecorated whitewares, which first appeared ca. 1820 (Brown 1982) and were in general usage by the 1830's (Lofstrum, Tordoff, and George 1982), and continue to be used today.

Ironstone, which was patented in 1813 by Charles Mason (Lofstrum, Tordoff, and George 1982), was most popular between 1840-1885 (Brown 1982). Thirty fragments of stoneware were recovered representing at least six different vessels, one with a partial maker's mark containing a lion and shield, and the lettering "...CHARLE/EN" (Figure 6). No true match was found in the literature consulted, but similar marks indicate that it was probably manufactured by Charles Meakin, in the last quarter of the nineteenth century (Adams, Gaw, and Leonhardy 1975; Kovell 1986).

Transfer printed whitewares, in colors other than blue, entered the scene ca. 1830 and continued to be manufactured until 1850-1860 (Brose 1967; Brown

1982; Lofstrum, Tordoff, and George 1982; Majewski and O'Brien 1984). Two varieties of transfer printed whitewares were recovered from the Elam site: red, with fifteen fragments representing at least five vessels, and brown, with six fragments of three vessels.

Figure 6. Maker's Mark From Sherd Recovered From the Elam Site.

Other decorated whitewares recovered from the Elam site include blue-shell-edged, annular, and non-painted embossed whitewares.

Blue-shell-edged whitewares had a general production range of 1780-1860 (Majewski and O'Brien 1984), but were most prevalent between 1830-1860 (Brown 1982; Linebaugh 1983; Lofstrum, Tordoff, and George 1982). Three fragments of blue-shell-edged whitewares were recovered from the site, representing two vessels.

Annularwares were produced between 1830-1860 (Lofstrum, Tordoff, and George 1982; Majewski and O'Brien 1984). Three fragments of mocha-banded annularware were recovered from the site, representing one vessel.

Non-painted, embossed whitewares were manufactured from 1840 onward (Majewski and O'Brien 1984). One fragment was found on the Elam site.

In addition to the whitewares, at least four vessels manufactured of

porcelain were represented by thirteen sherds. These included three fragments of gold lusterware with a date range of 1815-1850 (Brose 1967) and one fragment of a hand painted vessel with an oriental design, similar to a vessel found just west of the site. Demeter (personal communication 1991) believe that this represents a post World War I vessel.

A number of stoneware fragments were also recovered from the site. Red stonewares, often produced locally, were used throughout the entire nineteenth century. They may be plain, or have a glaze on either, or both, of the surfaces (Brown 1982). Colored slips may be used under the glaze, such as a brown Albany slip, or a white Bristol slip.

Jesuit Ring

Although commonly found in excavations of Historic French period sites, there are no clear indications where Jesuit rings originated, or of how they were imported into, and distributed throughout, the New World. It is known that they occur mainly in conjunction with French influenced sites, dating between 1650 and 1750, especially in the Great Lakes region (Cleland 1972b).

Originally they may have been imported for religious purposes by Jesuit missionaries. As Hauser (1982) notes, they may have been used as one strategy to further the spread of Christianity. It is noted in the Jesuit Relations that they were sometimes used as a reward for learning religious lessons.

> The one who can repeat, on Sunday, all that has been taught during the week, has for reward a string of colored glass beads, or two little glass tubes, or two brass rings (Hauser 1982:1).

However by 1725, they were probably used as a common trade item rather than for religious purposes. This assumption is based on style changes which occurred over a long period of time. Before 1700, the rings were manufactured with round or oval bezels and high relief cast designs. After 1700, engraved designs replaced the cast, and the bezels were often octagonal or heart shaped (Cleland 1972b).

One Jesuit ring was recovered from the Elam site (Figure 7). It has a stamped/embossed design on the face, with a rope-like border. The bezel is oval, with a motif composed of a central figure, Christ on the cross, flanked by two standing female figures.

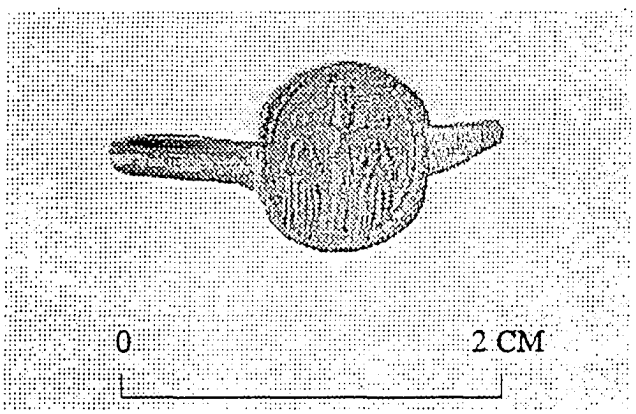


Figure 7. Jesuit Ring.

Rings with this, or similar, calvary scenes have been found at the Lasanen site, Mackinac County, Michigan (Cleland 1971), Fort St. Joseph, Berrien

County, Michigan (Hulse 1977), the Dunn Farm Plateau site, Leelanau County, Michigan (Brose 1983), and at six sites in western New York State (Wood 1974). All of these sites date to the late seventeenth and early eighteenth centuries. The cast design on this ring would indicate that it probably dates before 1715, which would be consistent with a Middle Historic period occupation of the Elam site.

Kaolin Clay Pipes

The abundance and variability of kaolin clay pipes found on Historic period sites makes them an important artifact for dating archaeological assemblages. There are two main criteria for identifying and dating kaolin clay pipes: (1) pipe stem bore diameter, and (2) decoration.

Harrington (1978) noted that in the collections he studied, there seemed to be a correlation between pipe stem bore diameter and the antiquity of the site. He developed a chart to date pipe stem collections. Based on his own observations, Binford (1978) took this technique one step further, developing a formula for the computation of a site's age based on the mean date for all pipe stem bore diameters from a given collection. However, Binford (1978) discovered that the correlation between pipe stem bore diameter and the date of manufacture breaks down in pipes manufactured after 1780. He also noted that the sample must be large enough to be statistically representative of the population under study, or the results may be skewed.

The second method of dating Kaolin clay pipe assemblages is through the identification of trends in decoration and changes in manufacture over broad periods of time. Humphrey (1969) believes that the Industrial Revolution in Europe resulted in a decline in the quality of pipes. The displacement of individual pipe makers by large scale manufacturers caused a decline in quality of materials and decoration. Dryer clays were used to decrease drying time and breakage, but they resulted in a finish which was rougher and less attractive. The shift to large scale manufacturers also prompted changes in decoration from incised to raised designs. It was quicker and easier to incise the mold, rather than each individual pipe. Another alteration was the treatment of the mold seam. In earlier pipes, they were scraped down and polished to make them less obvious. With the switch to mass production, less time was spent in erasing mold lines. They may have been nominally scraped down, incorporated into the design motif as with fluted bowls, or simply left unaltered.

The kaolin clay pipe collection from the Elam site is small, consisting of eighteen bowl fragments and fifteen stem fragments. Using Harrington's (1978) chart, this collection would date between 1680-1750. Binford's (1978) formula further narrows this down to a mean date of 1717. However, given the small size of the Elam collection, greater reliance should be placed on the analysis of stylistic attributes rather than bore diameters.

The Elam kaolin clay pipe assemblage analysis was primarily based upon decoration. Five types were established. Type 1 (Figure 8a), is a large,

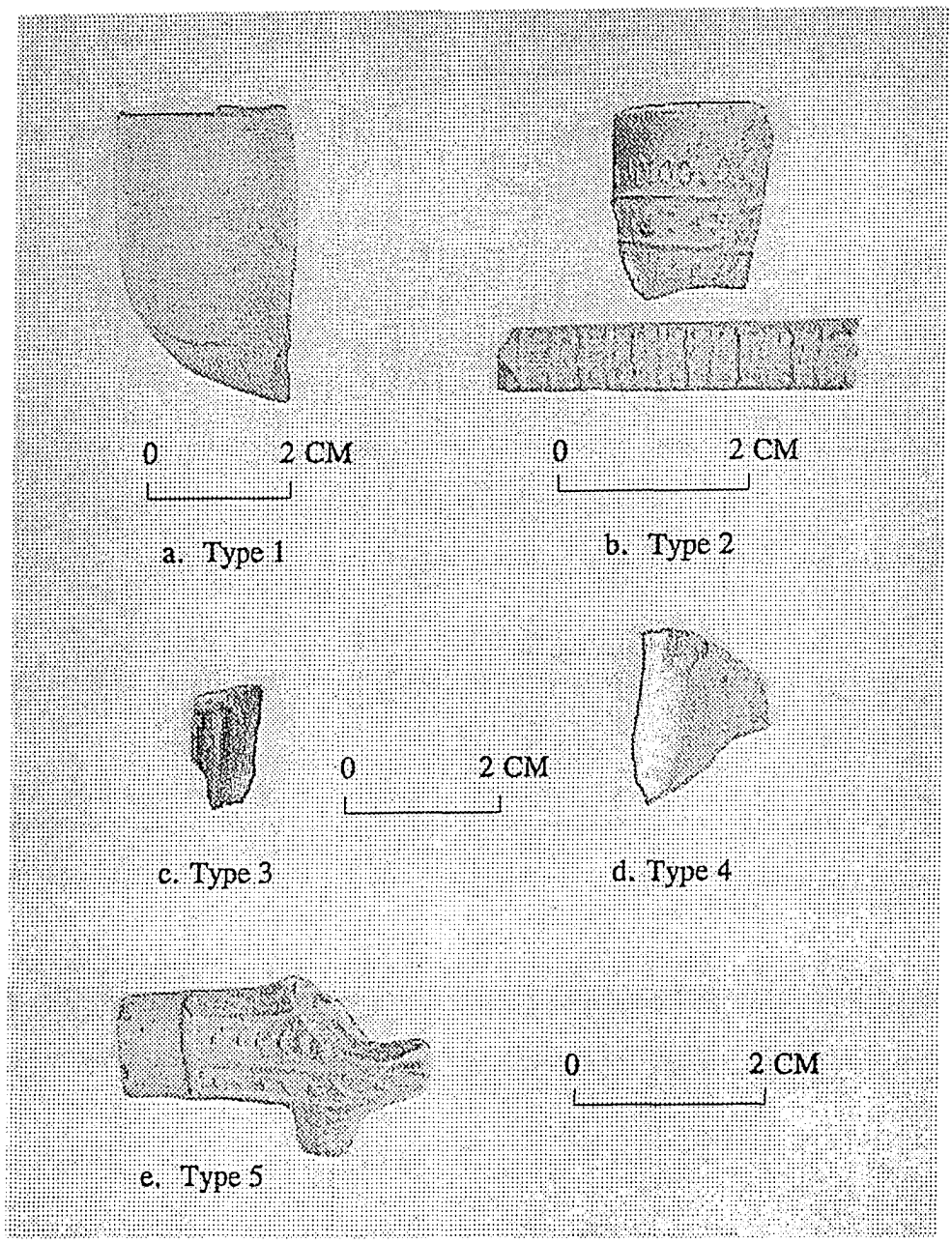


Figure 8. Kaolin Clay Pipes.

unadorned bowl similar in shape to Oswald's type 28, which he dates to the nineteenth century (Oswald 1975:Figure 4). The shape also matches Noel-Hume's type 23 (Noel-Hume 1969:Figure 97), except the Elam specimen does not possess the spur. This variety dates between 1820-1860 (Noel-Hume 1969). Four fragments from two pipes were recovered.

Type 2 (Figure 8b), is a fluted pipe, with a pattern of raised dots placed between raised ovals over a fluted base. This type is comparable to Humphrey's Class I fluted bowl from the Old Sacramento collection, California, with a date of 1850 (Humphrey 1969:20). It also matches Type 5a from the Mero site in Wisconsin, which was occupied prior to 1850 (Omwake 1965:137). Another similar pipe was recovered in excavations of the settler's store at Fort Michilimackinac, in northern Michigan, which dates between 1800-1850 (Omwake 1965:137). Six bowl fragments from at least two pipes of this type were recovered from the Elam site.

One decorated pipe stem (Figure 8b) may also fall within this type. It appears to correspond to one found at Old Sacramento, California (Humphrey 1969:30), and another found at Kipp's Post, in North Dakota, which was attached to a fluted bowl similar to Elam Type 2 (Woolworth and Wood 1960:273). Kipp's Post dates between 1826-1831 (Woolworth and Wood 1960).

Type 3 (Figure 8c) is also a fluted bowl, but on this specimen there was no decoration above the fluting. The mold seam was concealed with a raised decoration consisting of a leafy vine pattern. This type corresponds to Type 5c

from the Mero site, and is believed to date to the latter half of the nineteenth century (Omwake 1965:135). One fragment was recovered from the Elam site.

Type 4 (Figure 8d), comprised of only one small rim fragment, has a short band of rouletting about the lip, with no decoration below. No similar types were noted in the literature.

Type 5 (Figure 8e) is represented by one specimen, a shoulder fragment with a heel spur. The spur is not marked. The decoration consists of vertical rows of raised, elongated dots which are separated by thin raised vertical lines. The decoration terminates in a thin horizontal raised line just below the shoulder. No comparable specimens were noted in the literature.

Untyped pipes included one terra cotta bowl fragment with no discernable decoration. This specimen was too fragmentary to identify. Others were a pipestem fragment with a horizontal row of raised dots; a stem fragment with flattened, flared mouth piece; an undecorated shoulder section, with an unmarked heel spur; and eight unidentifiable stem fragments and one bowl fragment.

Although the pipe stem bore diameter ratio of the Elam site collection would date it to pre-1750, the sample is too small and fragmentary to be an accurate reflection of a correlation between bore diameter and date of manufacture in this case. This observation is justified when decoration is used as the sole criterion for analysis. All of the decorated pipe bowls, and the one decorated pipe stem, are representative of post-1800 era pipe styles. Thus, it is probable that the majority of the Elam site kaolin pipe collection is datable to the

period between 1800 and 1850.

Metal

The most common material type recovered from the Elam site was metal. However, due to its rapid deterioration when exposed to the elements, very little of it proved useful in dating the Elam site. Of the metal artifacts found, nails were the most prevalent, including nineteen modern wire nails, and twenty-seven modern machine cut nails. Wire nails are generally considered to be post-1850 in manufacture, while modern machine cut nails were manufactured after 1830 (Nelson 1968).

Other metal artifacts found include miscellaneous hardware (screws, tacks, washers, cotter pins, rivets, nuts, bolts, a wrench, a fragment of a mill bastard file, safety pins, staples, baling wire, electrical wire, hinges, door springs, window screen, and flashing); barrel hoop fragments; bucket fragments; a fragment of heavy iron, possibly from a plow; one lead fishing weight, with nylon fishing line attached; fish hooks; car parts; aluminum foil; sanitary cans, which were first manufactured ca. 1889, but did not become popular until ca. 1904 (Rock 1984); lids from cans, opened with a can opener; bottle caps; a shoe horn; a key type can opener; a belt buckle; a screw cap; a machine made nineteenth century horseshoe (Chappell 1973:116); a light bulb socket; an eye, from a hook and eye set; a link from an ornamental chain; a name tag; and a small engraved metal ring which probably came from a rosary case. Similar rings with chains are

present in the Sears and Roebuck Catalogue of 1927 (Mirken 1970). The majority of the above listed materials are consistent with the intensive twentieth century occupation of the site, and the majority were recovered from the upper terrace.

Artifacts of Native Manufacture

Certain artifacts of Native American manufacture were also considered as possibly belonging to the Historic Indian assemblage at the Elam site. These included sandstone abraders, crinoid beads, one catlinite bead, one catlinite pendant, one tinkling cone, one copper awl, one whole copper bead and two fragments. As discussed below, most probably belong to the prehistoric components, but Historic period association is possible.

Eleven sandstone abraders were recovered from the Elam site. Abraders have been recovered from the Dunn Farm Plateau site, and a number of other Middle Historic period sites in the Great Lakes region (Brose 1983). However, abraders are also common on Late Woodland/Upper Mississippian/Oneota period sites, and all of the Elam specimens are of the type common to Wisconsin Oneota sites. Oneota style abraders are made of irregularly shaped pieces of sandstone with grooves rubbed into one or more sides (Gibbon 1986). Two abraders were found within feature context on the Elam site, one from a feature which has been dated to the late fifteenth century (Garland, Personal communication 1991). There is a definite Upper Mississippian occupation of the

site at this time (Garland 1989), and its main occupational area does overlap that of the other Middle Historic period artifacts (Figure 9). The abraders, although they could have come from either of these components, more than likely belong to the prehistoric occupation.

Eleven crinoid beads were recovered, in areas of both Historic and prehistoric occupations. Since crinoid beads are not found on Historic period sites, these are likely to have originated during one of the earlier prehistoric occupations.

Two ornaments of catlinite were recovered. The first was a long tubular bead, triangular in cross section, measuring 29.8 mm in length, and 4.5 mm in diameter (Figure 10a). Similar beads have been recovered from the Gros Cap Cemetery site, the Lasanen site, and the Pen site (Nern and Cleland 1974), the Saint Marie I site, and the Ossossane site (Quimby 1966). All but the Ste. Marie I site, which is Early Historic, are Middle Historic in date.

A fragment of a catlinite pendant was also found. It was flat, triangular in shape, with a perforation running lengthwise from the top of the triangle to the base (Figure 10b). Similar pendants have been recovered from the Gros Cap Cemetery site, the Lasanen site, and the Pen site (Nern and Cleland 1974).

Catlinite, also called pipestone, was widely used both prehistorically and historically, until the beginning of the nineteenth century (Noel-Hume 1969; Cleland 1971). The catlinite artifacts in the Elam collection were recovered from both the prehistoric Upper Mississippian and the Middle Historic period

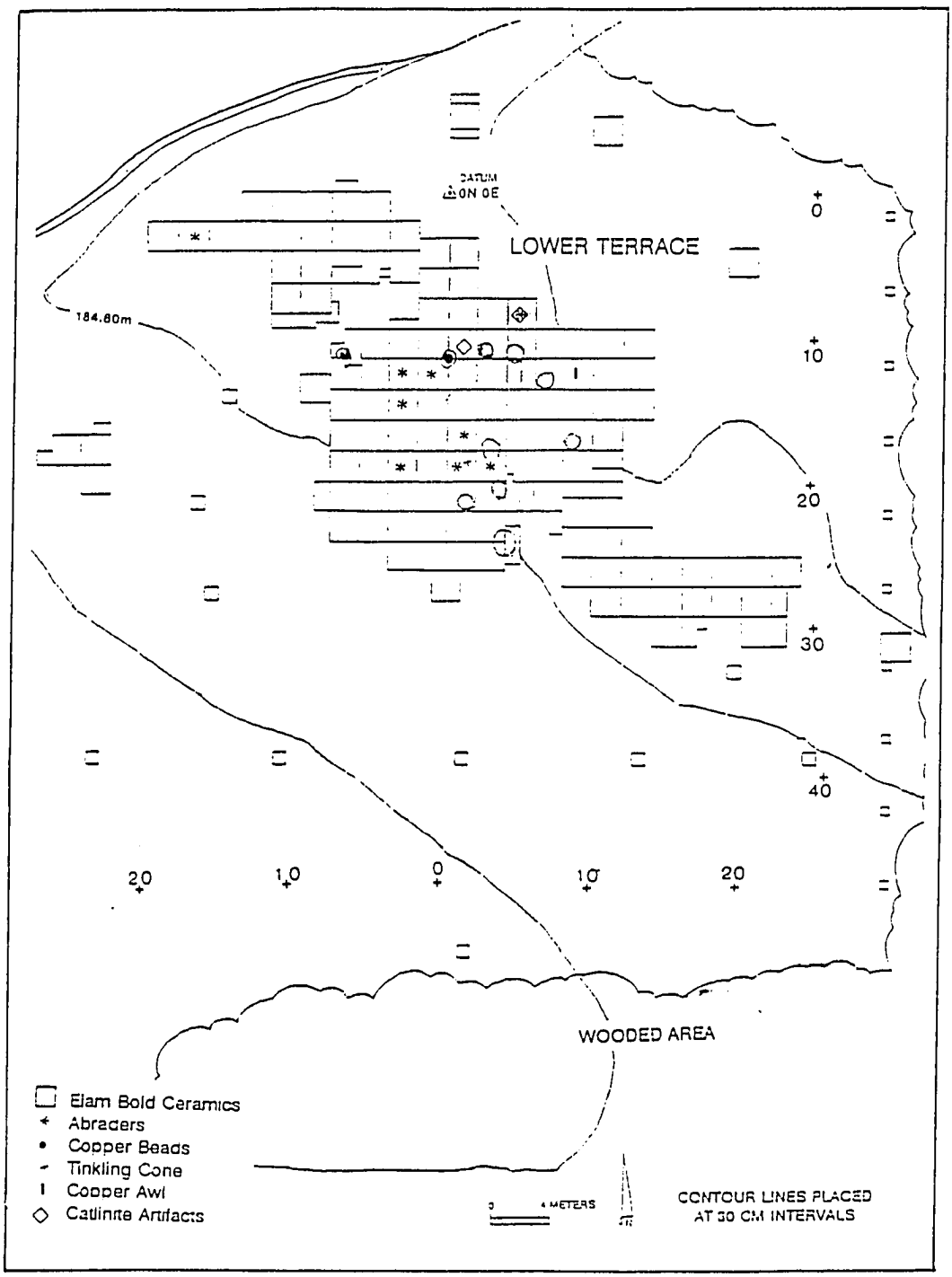


Figure 9. Distribution Map of Historic Artifacts of Native Manufacture and Elam Bold Prehistoric Ceramics.

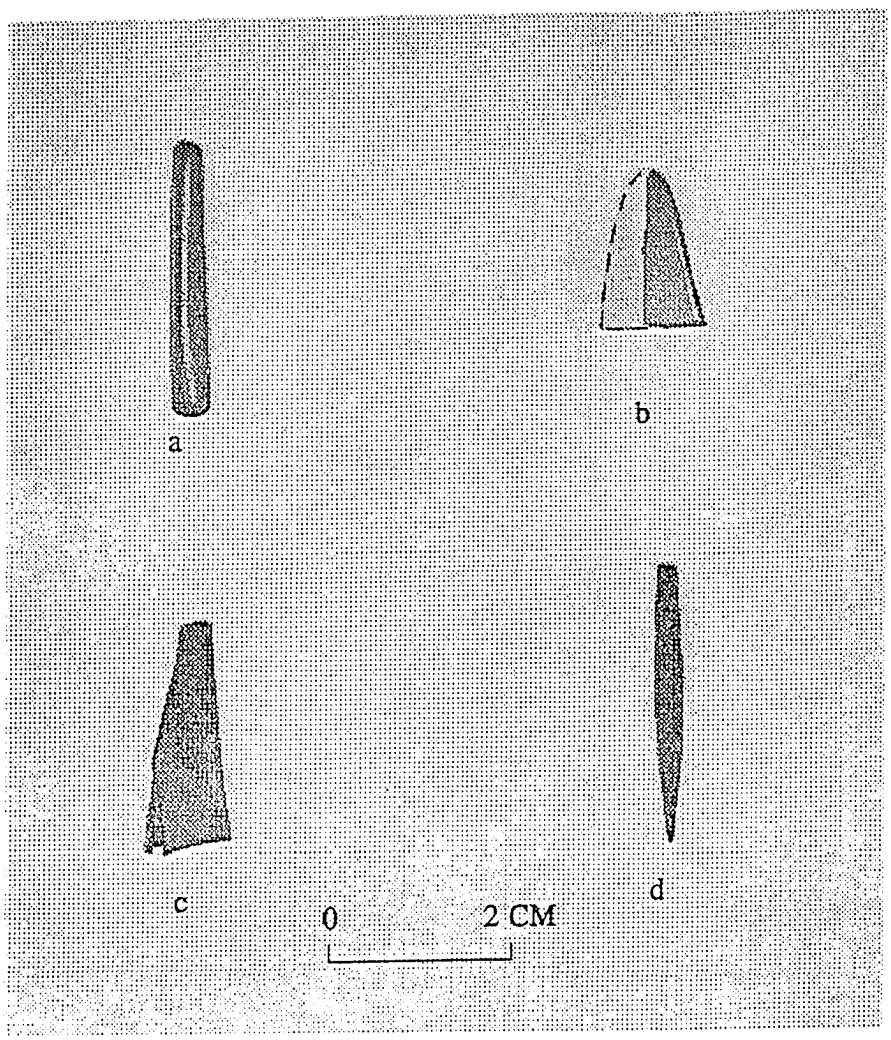


Figure 10. Historic Artifacts of Native Manufacture:
a. Catlinite Bead; b. Catlinite Pendant;
c. Tinkling Cone; d. Copper Awl.

occupation areas. However, neither were recovered from definite feature context, or in association with the ceramic type Elam Bold (Garland 1989), which is a marker of the late Upper Mississippian occupation. Both types of ornaments (bead and pendant) were found at the Lasanen site (Cleland 1971), and the Elam specimens also may date to this time period (late seventeenth century).

One copper tinkling cone was recovered from the Elam site (Figure 10c). Tinkling cones are common on late seventeenth/early eighteenth century sites (Stone 1972), and they have been recorded at other Middle Historic period sites in the Great Lakes region, such as the Lasanen site (Cleland 1971), the Fletcher site cemetery (Mainfort 1979), the Gros Cap Cemetery site (Nern and Cleland 1974), the Marquette Mission site (Stone 1972), Summer Island III (Brose 1970), the Bell site (Wittry 1963), and Fort Michilimackinac (Stone 1974).

One copper awl was recovered from the Elam site (Figure 10d). Brose (1970) notes that awls are common finds at sites dating from Late Archaic through Historic periods in the Great Lakes. Only one copper awl was noted in the research consulted. This was at Summer Island III (Brose 1970). Iron awls were noted at other sites such as the Gros Cap Cemetery site (Nern and Cleland 1974) and Fort Michilimackinac (Stone 1974).

Copper beads were recovered from two features on the site, one of which dates to 1450 (Garland, personal communication 1991). These would belong to the Upper Mississippian occupation(s) of the site.

CHAPTER III

RESULTS OF INVESTIGATIONS

A Brief History of Michigan

Before any conclusions can be drawn as to the occupancy of the Elam site during the Historic period, a brief review of the late prehistoric and Historic periods of the upper Great Lakes region must be made. Prior to 1450, the region north of lakes Huron and Superior (Figure 11) was inhabited by the closely related Potawatomi, Ottawa, and Ojibwa Indians (Clifton 1977, 1986). Around 1450, the Potawatomi moved south to the eastern shores of Lake Michigan, between the city of Ludington and the St. Joseph River valley. This is supported in the archaeological record by the Moccasin Bluff site, in Berrien County, which first defined the Berrien Phase (1400-1600)(Bettarel and Smith 1973), and subsequent research which supports the contention that the inhabitants of western lower Michigan during the Berrien Phase were the Potawatomi (Bettarel and Smith 1973; Clifton 1977, 1986; Cremin 1992; Quimby 1966).

After 1600, most of lower Michigan was abandoned due to increased pressure from Iroquois Confederacy war parties seeking, in part, to gain control of the fur trade. At first, the Iroquois had the advantage of superior

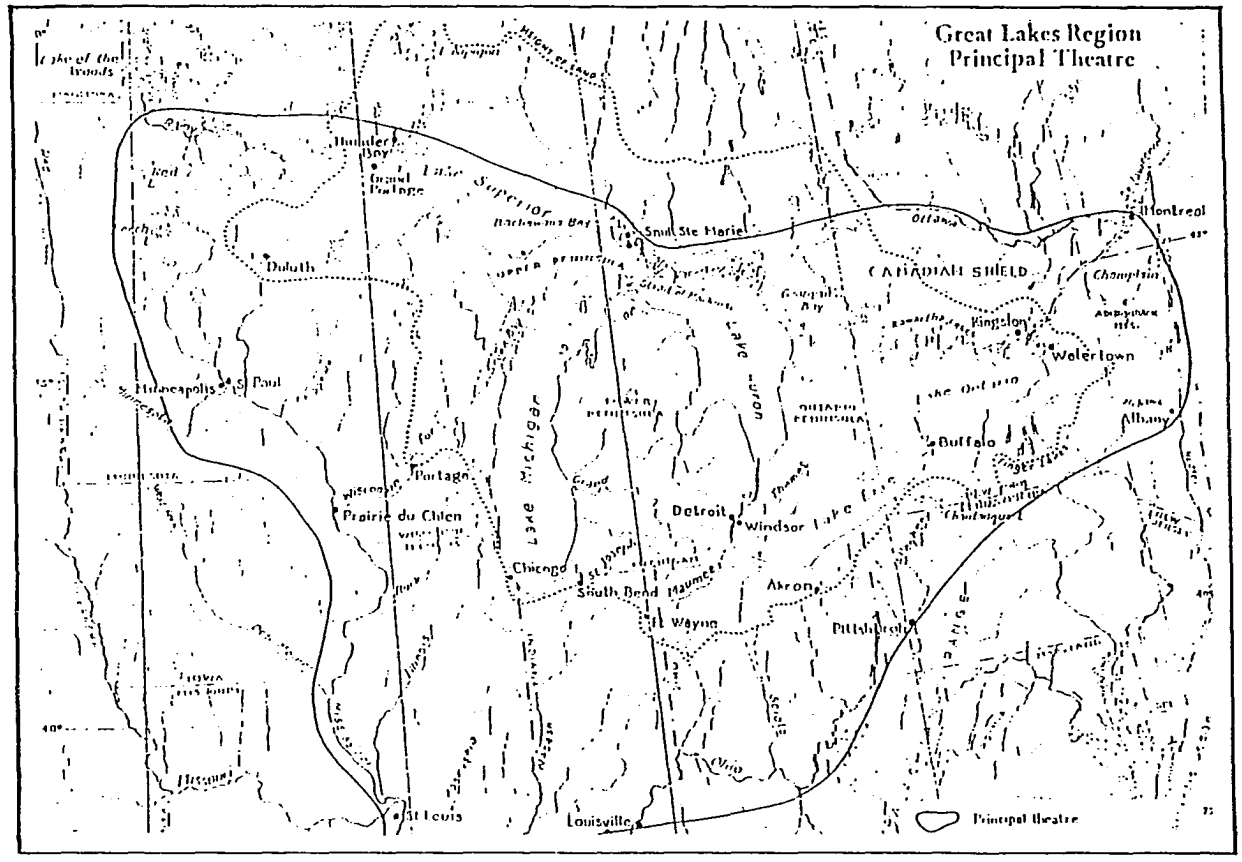


Figure 11. Map Showing Great Lakes Region.

Source: Tanner, Helen Hornbeck (1987). Atlas of Great Lakes Indian History. Norman: University of Oklahoma Press.

weapons provided by the European traders, and succeeded in forcing a general migration westward by the inhabitants of the upper Great Lakes. The Potawatomi moved north to the Straits of Mackinac and eventually to the Green Bay region (Clifton 1977, 1986; Cremin 1992; Tanner 1987). They also may have moved south, and then west around the head of Lake Michigan (Cremin 1992).

The Ottawa, whose name means "to trade," had established trade networks with the Chippewa or Ojibwa to the north and the Huron to the south prior to their involvement with the fur trade in the seventeenth century (McClurken 1986). When the French first began trading in the Great Lakes region, the Huron had control of the routes and acted as middlemen to the tribes of the west. In the 1640s, however, the warring Iroquois Confederacy disrupted the existing northern trade networks. By 1650, the Huron, who were decimated by Iroquoian raiding, along with the Ottawa, who were also feeling pressure from the Iroquois, moved north into Michigan and Wisconsin. Both tribes banded together with their trading partners, the Ojibwa. In 1653, the Ottawa and Ojibwa defeated the Iroquois at Sault Ste. Marie, allowing the Ottawa and their allies to regain control of the Michilimackinac area. By the 1670s, they had gained control of the Straits of Mackinac, from whence they roved south along the lake Michigan shores for winter hunting and spring fishing (Johnson 1880; McClurken 1986; Tanner 1987).

The Miami and the Potawatomi began moving back into southwest

Michigan establishing villages in the St. Joseph river valley in the 1680s (Hulse 1977; Tanner 1987).

Since this time, the Kalamazoo River has been considered the traditional cultural boundary between the Ottawa and Potawatomi Indians, with both tribes sharing the region peacefully and sometimes residing together in the same village (Fitting 1975; Johnson 1880; Tanner 1987). It is at this point that the utilization of the Elam site, abandoned in the late fifteenth century, may have been renewed.

Prior to the Black Hawk War of 1832, Allegan County was populated mainly by the aboriginal inhabitants of the area, both Ottawa and Potawatomi, and by a few fur traders. The first trading post on the Kalamazoo River, Numaiville, was established near the Potawatomi village of Matchepenach-ewich in what is now the city of Kalamazoo in the early 1820s (Figure 12) (Durant 1880; Johnson 1880; Tanner 1987). Johnson (1880) noted that Matchepenachewich was the chief of the Ottawa band at Kalamazoo, although the majority of Indians settled there were Potawatomi.

Other trading posts sprang up along the river (Figure 12), including one run by a Frenchman named Bushong, or Bouchon, on the south side of the river at the head of what was called the "Bouchon stretch," a long stretch of "level water" east of the Elam site (Johnson 1880; Morgan 1881a, 1881b; Warner 1896) .

The Black Hawk War was the last major Indian uprising in Michigan,

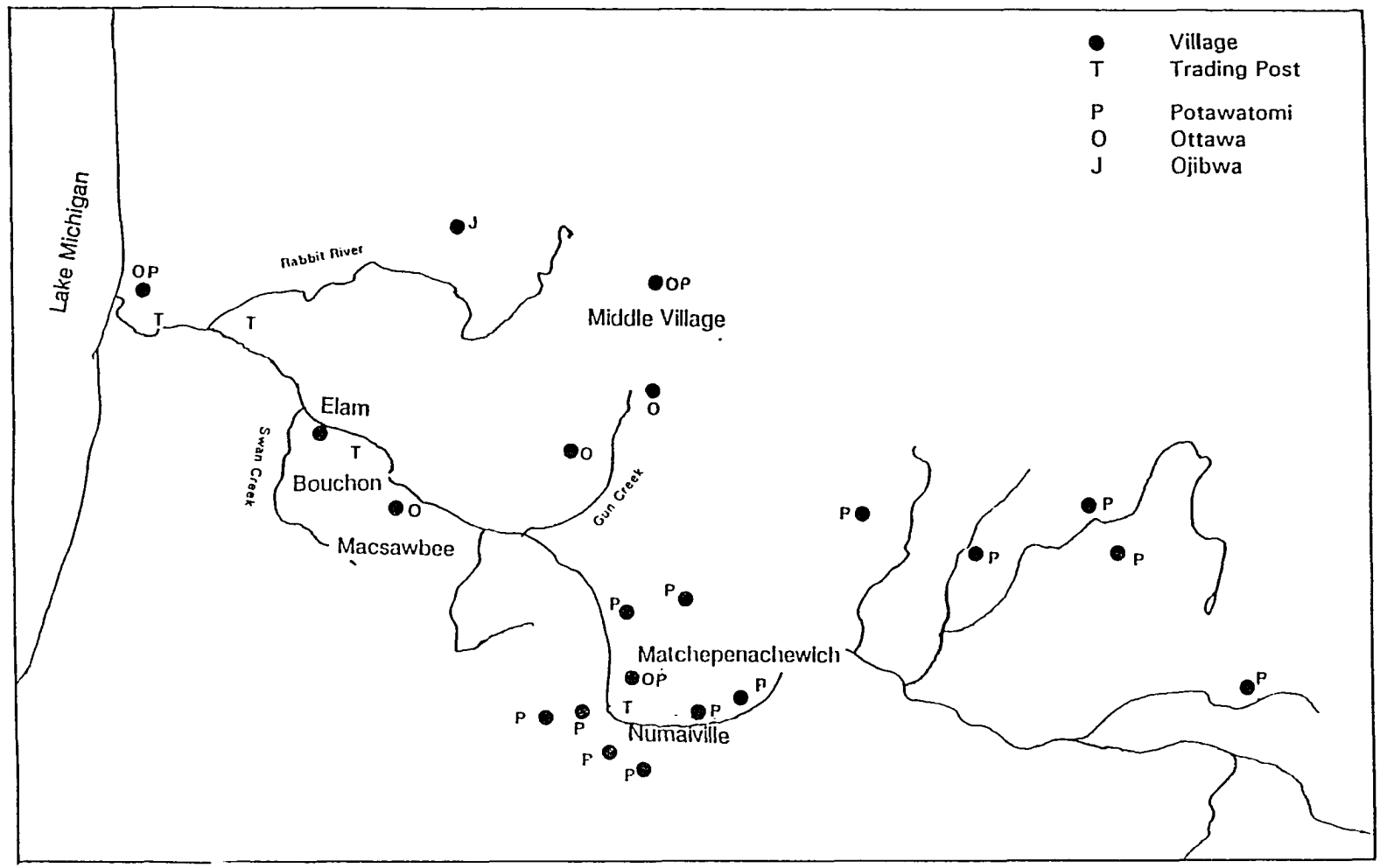


Figure 12. Trading Posts and Indian Villages in Southwestern Michigan, ca.1830.

Sources: Anonymous ND; Durant 1880; Fitting 1975; Johnson 1880; Morgan 1881a, 1881b; Tanner 1987; Warner 1896

and resulted in the Indian's loss of title to their lands in southwest Michigan. However, not all of the Indians left the area, and when the city of Allegan was first settled in 1834, they found the Ottawa chief Macsawbee with his tribe settled there along the banks of the Kalamazoo River (Morgan 1881b; Henderson 1881; Tanner 1987).

Valley township (formerly Pine Plains), in which the Elam site is located, was first populated in the late 1830s by American settlers mainly engaged as itinerant lumbermen and farmers (Henderson 1881; Morgan 1880a). The settlement of southwest Michigan created a demand for lumber for the construction of buildings. This demand often resulted in the appearance of small saw mills within a recently settled area (Benson 1989). The land in Pine Plains township was covered with valuable tracts of timber, and lumbering became a major enterprise (Morgan 1881a; Wagner 1880b). In 1840, there were fifteen mills, mostly small, located in Allegan County (Benson 1989).

Records of land purchases in Sections 9 and 10, do not appear until 1836. The majority of the land was purchased by Trowbridge and Porter (Wagner 1880b), probably a lumbering concern. The Trowbridge referred to here may be Charles C. Trowbridge, one of the founders of the Boston Company, a lumbering firm involved in the development of the city of Allegan, which ran into trouble during the Panic of 1837 and finally split up in 1844 (Benson 1989).

The first known settler in Pine Plains township was A. Nobles in 1837. Later in that same year, David B. Stout erected a saw mill on Swan Creek, in Section 29 (Wagner 1880b). There are no records showing settlement on the land incorporated in the Elam site except on one map (Anonymous ND), ca. 1840 (Figure 13), which shows a structure, with the word "Peake's" written beside it, just west of Stout's Landing, a stopping point for river traffic in the 1840s (Warner 1896). There is no record of anyone named Peake ever owning the property.

Historic Occupations of the Elam Site

Historic Period artifacts were recovered from both upper and lower terraces. Unfortunately, a lack of features readily identifiable as Historic (other than twentieth century) has hindered investigations of the earlier Historic components. However, the analysis of the artifacts, and their spatial distribution across the site, combined with archival research into the land use history of the area have allowed some conclusions to be made.

It is apparent that there are at least two distinct Historic occupations predating the twentieth century. The first, dating to Quimby's (1966) Middle Historic period (1670-1760), would appear to represent transient and probably repeated usage, by either Ottawa or Potawatomi Indians. The second occupation, dating approximately to 1840 may be the remains of an unknown fur trading post, occupied for a brief period before the beginning of any major

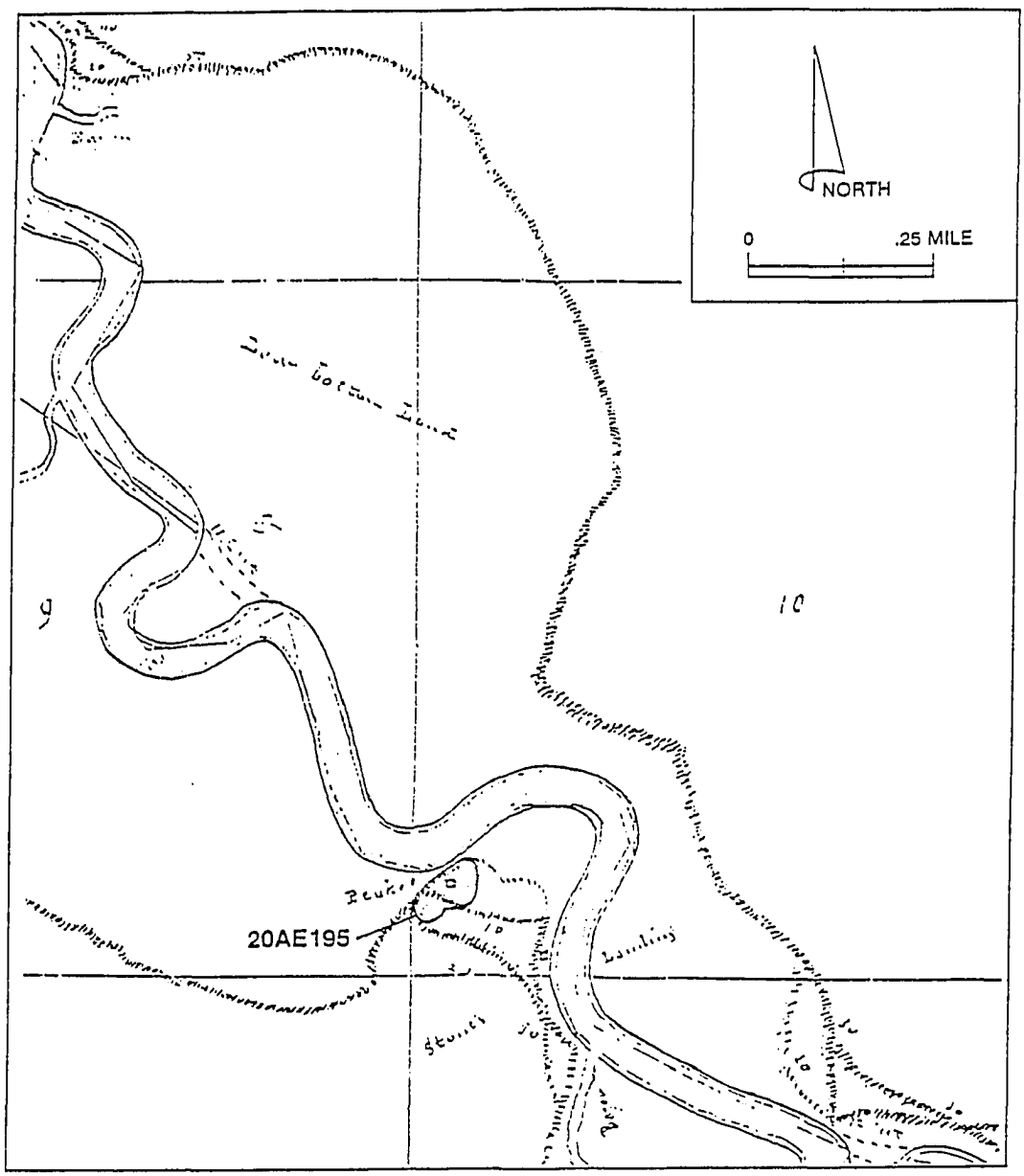


Figure 13. Portion of ca. A.D. 1840 Survey Map With Approximate Location of Elam Site.

Source: Anonymous (ND). Map of Proposed Improvements Between Allegan and Saugatuck (ca.1840), cartographic Records, Lands Division, Department of Conservation, RG 58-17, Box 34, Folder 00270. State Archives of Michigan, Bureau of History, Department of State, Lansing, Michigan.

settlement in the area.

First Historic Occupation (1680-1770)

The first occupation may represent transient usages of the site over a span of many years, dating within Quimby's (1966) Middle Historic period (1670-1760). This is based on similarities between the Elam material and artifact assemblages recovered from sites dating to the Middle Historic period elsewhere in Michigan (Figure 14).

The Lasanen site, an Historic Ottawa Indian burial site in Mackinac County, Michigan, dates to the last quarter of the seventeenth century (Cleland 1971). The artifact assemblage included both Historic and prehistoric goods, including many types also found at the Elam site, such as catlinite beads and pendants, Jesuit rings (including calvary rings), bell buttons, tinkling cones, and copper awls. Glass trade beads were well represented on the site, and include all of the early types found on the Elam site, namely: (a) Type 3 (Elam type IIa6), (b) Type 5 (Elam type IIa55), and (c) Type 9 (Elam type WIb7). Gunflints from the Lasanen site included two types, spall and French blade. No English blade gunflints were noted.

On the Elam site, the majority of the earliest artifacts, including those which correspond to the Lasanen site assemblage, were recovered from one general area of the site, measuring approximately sixteen meters east/west by twenty meters north/south (Figure 15). This area is set back from the river

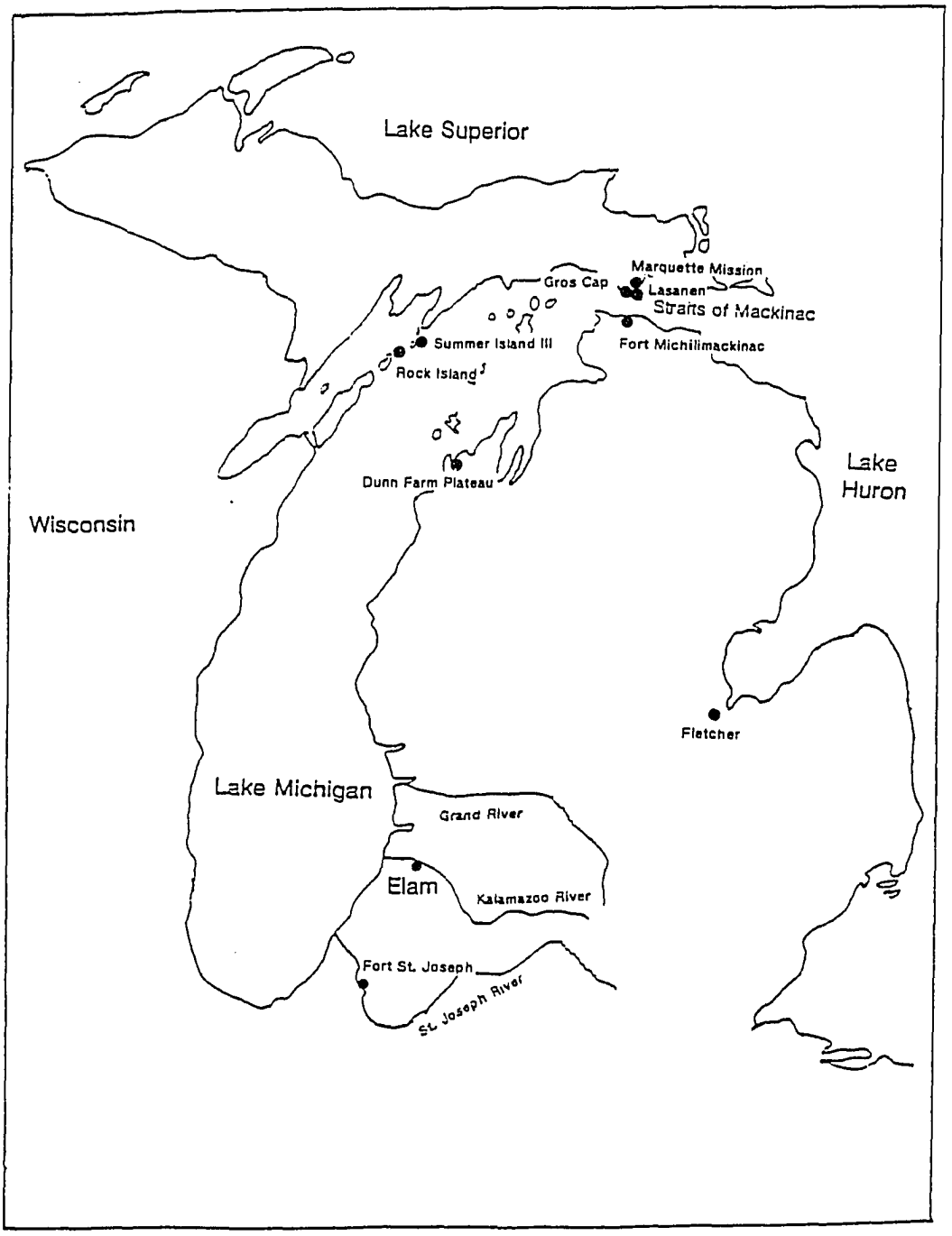


Figure 14. Middle Historic Period Sites in Michigan.

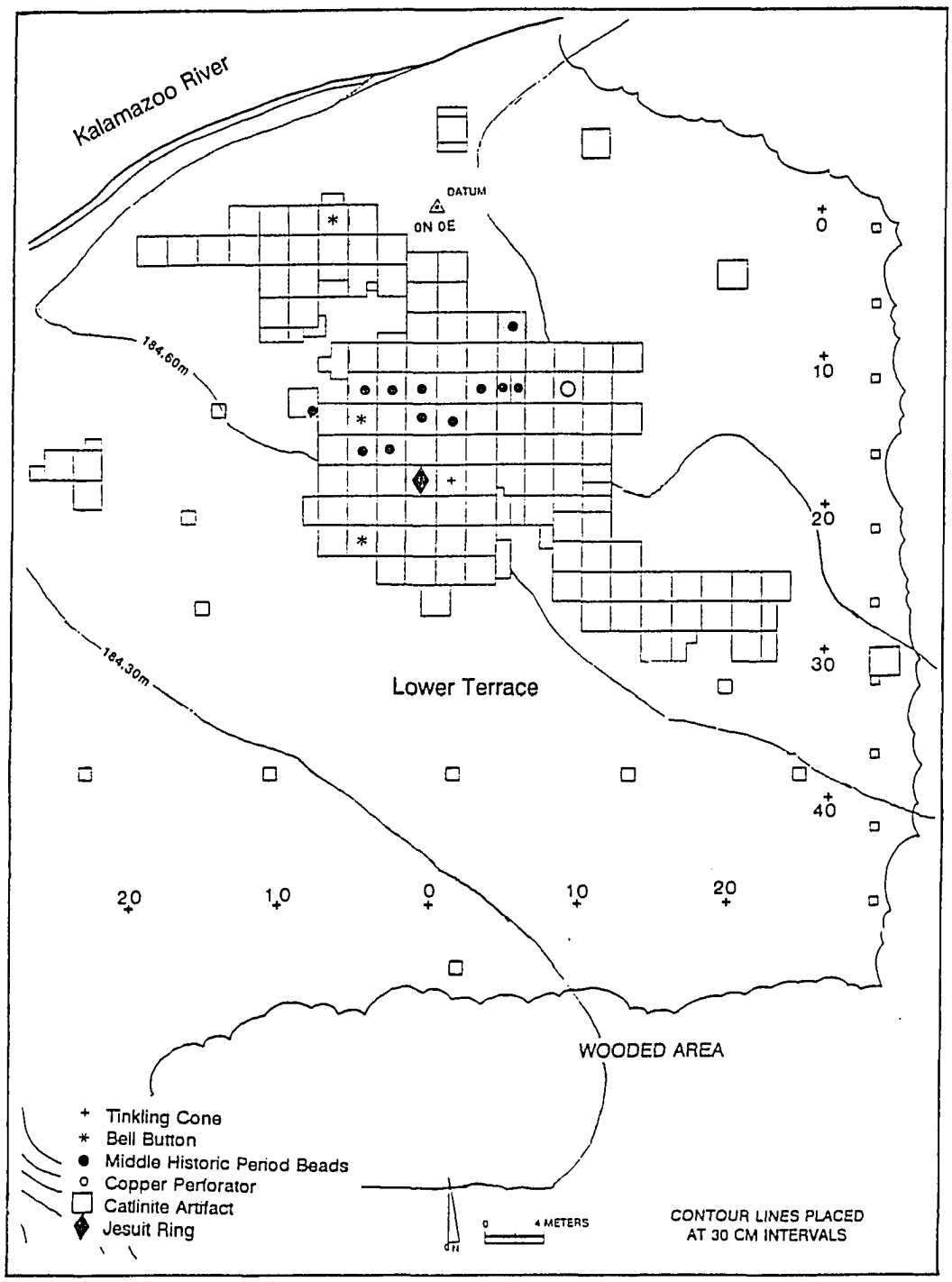


Figure 15. Map Showing Distribution of Middle Historic Period Artifacts on the Elam Site.

approximately sixteen meters, in contrast to the second historic occupation artifacts which were mainly concentrated along the river bank.

Similarities were also seen between the Middle Historic period artifacts from the Elam site and the period of French occupation (1687-1761) at Fort St. Joseph, St. Joseph county, Michigan (Hulse 1977). Contemporaneous artifacts were glass trade beads, including Class I, Series A, Type 3, varieties h and i (Elam types IIa55 and IIa6), and Class II, Series A, Type 2, variety d (Elam type WIb7). Hulse (1977) dates the IIa6 and WIb7 varieties to between 1700 and 1750. Also found in the Fort St. Joseph assemblage were both spall and blade gunflints, and Jesuit rings with calvary motifs.

Hulse (1977) feels that the Fort St. Joseph assemblage shows many close ties with Fort Michilimackinac, which dates between 1715 and 1781 (Stone 1974). Glass trade beads found at Fort Michilimackinac that are similar to those from the Elam site include CI, SA, T10, Va (Elam type IIa6), T1, Vc-d (Elam type IIa55), and CII, SA, T8, Vb (Elam type WIb7). Gunflints were also recovered from Fort Michilimackinac, including spall, French blade, and English blade varieties. Of the Jesuit rings recovered at Fort Michilimackinac, none was of the earlier (pre-1710) cast design variety.

The Fletcher site cemetery (Mainfort 1979), an Ottawa or Chippewa burial ground dating between 1740 and 1770, also is similar to the Elam site in terms of the artifact assemblage. Artifacts found at the Fletcher site cemetery include spall and blade gunflints, bell buttons, glass bead type IIa6,

catlinite artifacts, Jesuit rings, tinkling cones and awls made of iron. However, the styles of the catlinite artifacts are not similar to the Elam assemblage, the Jesuit rings are all of the incised varieties found during later periods, and the tinkling cones and awls are not made of copper.

The Gros Cap Cemetery site, St. Ignace county, Michigan, an Ottawa burial site dating prior to 1705, has been compared to the Lasanen site (Nern and Cleland 1974). The historic artifact assemblage from this site is also similar to the Elam site, including within its inventory cast relief design Jesuit rings, copper tinkling cones, catlinite tubular beads and triangular pendants, and spall gunflints. Nern and Cleland (1974) note that the majority of the artifacts appear to be French rather than English, and this distinguishes the Lasanen and Gros Cap Cemetery sites from Fort Michilimackinac.

The Elam site Middle Historic period artifact assemblage shows a higher degree of affinity with the pre-eighteenth century Lasanen and Gros Cap Cemetery sites than with the later Fletcher site cemetery and the two forts. The Elam assemblage includes several artifacts of native manufacture (i.e. catlinite beads and pendants, copper awl and beads, and tinkling cones), along with bell buttons, and a similar cast design Jesuit ring. Artifacts of native manufacture are not as common in the assemblages from the Fort St. Joseph and Fort Michilimackinac sites, and while they are more abundant at the Fletcher site cemetery, the bead styles are different, and there is a greater reliance on iron.

The earliest date the Middle Historic assemblage at the Elam site could have been deposited was approximately 1680 when the Miami first moved back into the St. Joseph Valley (Hulse 1977; Tanner 1987). The most recent date is 1770, the terminal date at the Fletcher site cemetery (Mainfort 1979). An early placement within this range may be indicated by the higher degree of affinity between the Lasanen, Gros Cap Cemetery and Elam site materials suggesting a possible a date range of 1680-1705.

The occupants of the site at this time were probably Potawatomi, although an Ottawa occupation cannot be entirely ruled out due to the high degree of affinity with northern Michigan Ottawa sites noted above, and the lack of clearly defined borders between the Ottawa and the Potawatomi. The Kalamazoo river valley has been utilized by both tribes, and the two tribes are also closely related and often resided in the same villages.

Second Historic Occupation (ca. 1840)

There are a number of Late Historic period sites in the upper Great Lakes region (Figure 16), including the Ada site, Kent county, Michigan (Herrick 1958), the Battle Point site, Ottawa county, Michigan, and the Fourteen Mile Point site, Ontonagon county, Michigan (Mead 1984). There are a number of similarities between these assemblages and the Elam site collection.

Multi-faceted tubular glass trade beads are a common item within Late

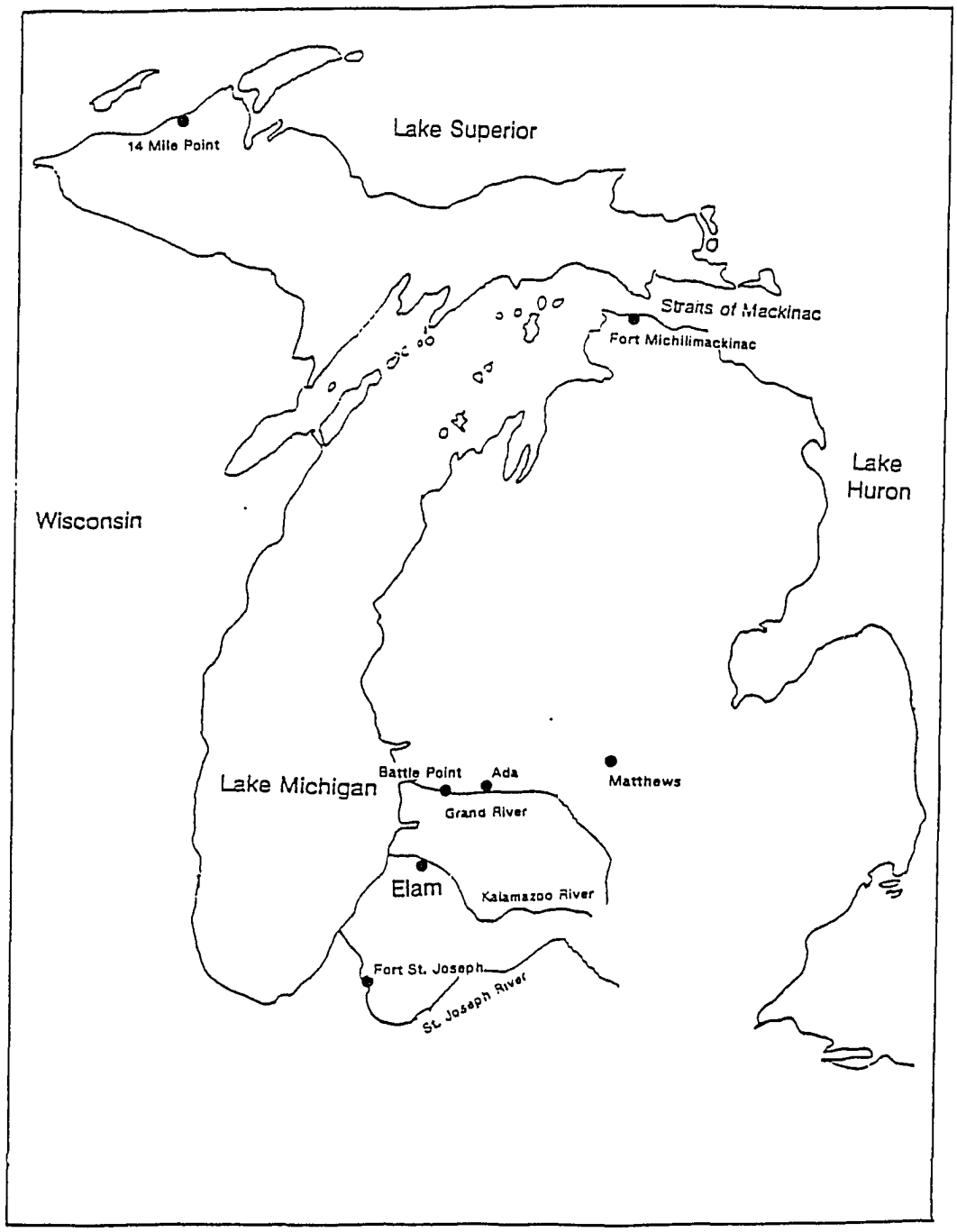


Figure 16. Late Historic Period Sites in Michigan.

Historic period artifact assemblages in the upper Great Lakes, and they do not appear in earlier periods. Thus the presence of this type (If) would normally suggest a date range of 1760-1820 (Quimby 1966). Two varieties were found at the Elam site ultra-marine blue and amber. Both of these varieties were also recovered from the Ada site (1790-1820) (Mead 1984), the Battle Point site (1810-1830) (Mead 1984), and the Fourteen Mile Point site (1800-1830) (Mead 1984)). Also found on these sites were wire wound beads, which are more typical of earlier Historic periods, usually dating prior to 1760 (Hulse 1977; Kent 1983; Mason 1986; Stone 1974).

In addition to the beads, the English prismatic blade gunflint would date to this time period. English blade gunflints have not been found on sites prior to 1800 (Brain 1979). After the 1820 invention of the percussion lock gun their usage would have decreased (Blanchette 1975).

As with the Middle Historic assemblage, the Late Historic artifacts were mainly concentrated in one area of the site, along the river (Figure 17). During excavation of the site, all historic material other than the trade goods was presumed to relate to the still extant twentieth century occupation. However upon examination, nineteenth century ceramic sherds were found in such quantities, both on the upper and lower terraces, that they could not be interpreted solely as the remains of heirlooms. These ceramics (transferware, annularware, blue-shell-edged whiteware) all have usage dates between 1830-1860. Thus, a mid-nineteenth century occupation was also suspected in

addition to a Late Historic period Indian occupation. Adding credence to this idea were the presence of a Prosser molded bead, which should have dated to post-1840, and kaolin pipe fragments, the identifiable pieces of which were also datable to the mid-nineteenth century. Several of the buttons are also datable to the mid-nineteenth century. This however did not prove to be the case, and the discovery of a map dating to approximately 1840 ultimately resulted in the combination of these two supposed occupations.

This map (Figure 17) shows a structure in a slightly higher area of the lower terrace, with the name Peake written beside it. When this map was superimposed over a map of the Elam site a correlation was also found between the structure and the location of the Late Historic period artifacts. The lack of structural features dating to this time period may indicate that the occupation was brief, and the structure was not permanent. Thus, one occupation is postulated dating to ca. 1840. Peake may have been one of the many fur traders in the Kalamazoo river valley in the 1830s.

Other possibilities are that Peake may have been a squatter or a tenant of the land owner, engaged in either lumbering or farming. If Peake had been a land owner, references would have been found in the early maps and histories of the township (Anonymous 1895; Henderson 1881; Johnson 1880; Morgan 1881a, 1881b; Wagner 1880a,1880b). Or, Peake may have been in charge of a nearby river landing. Stout's Landing was one of the many stopping points for river traffic carrying freight between Allegan and

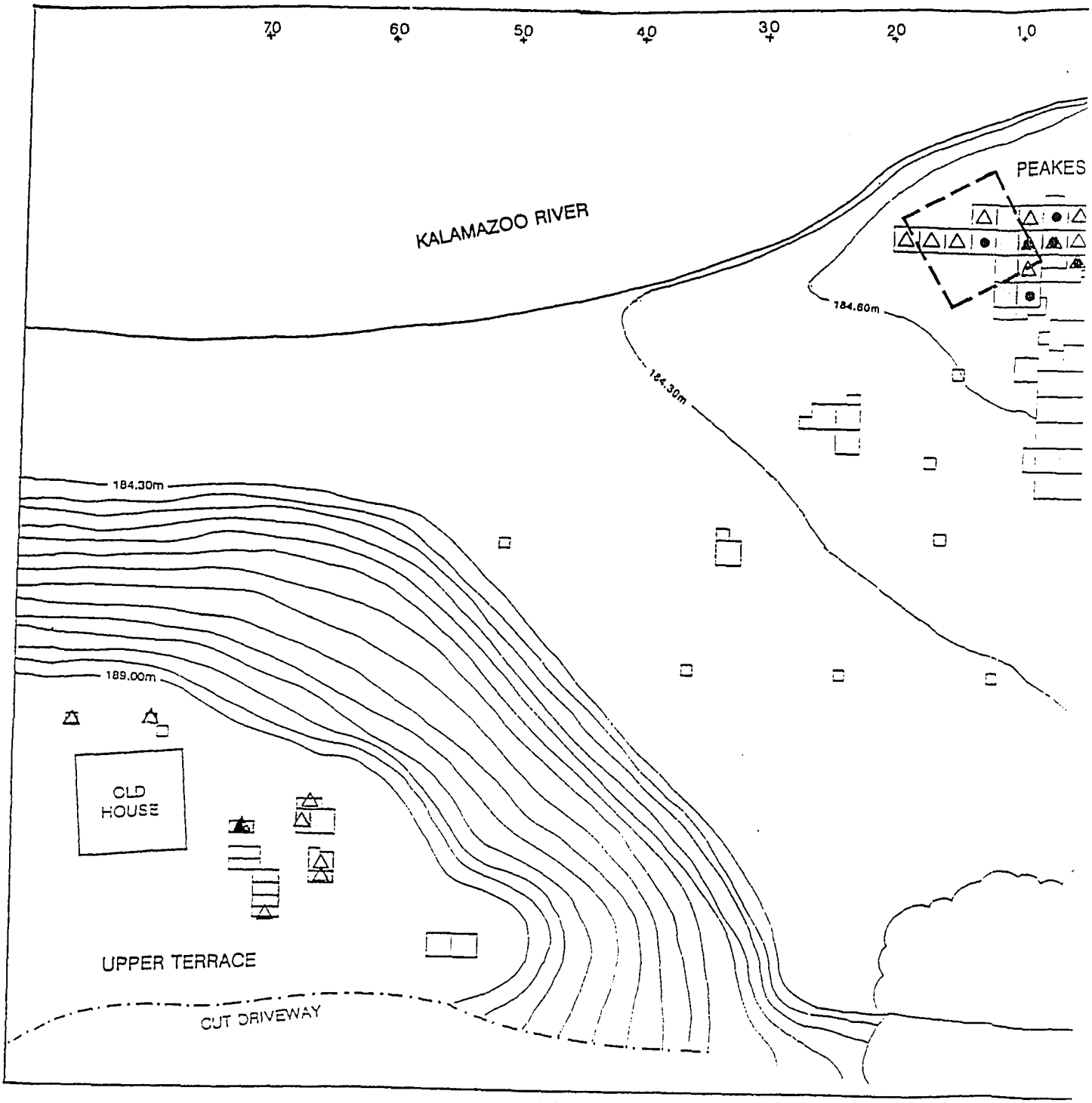


Figure 17. Map Showing Distribution of Second Histori
in Relation to the Historic Structure (Pe

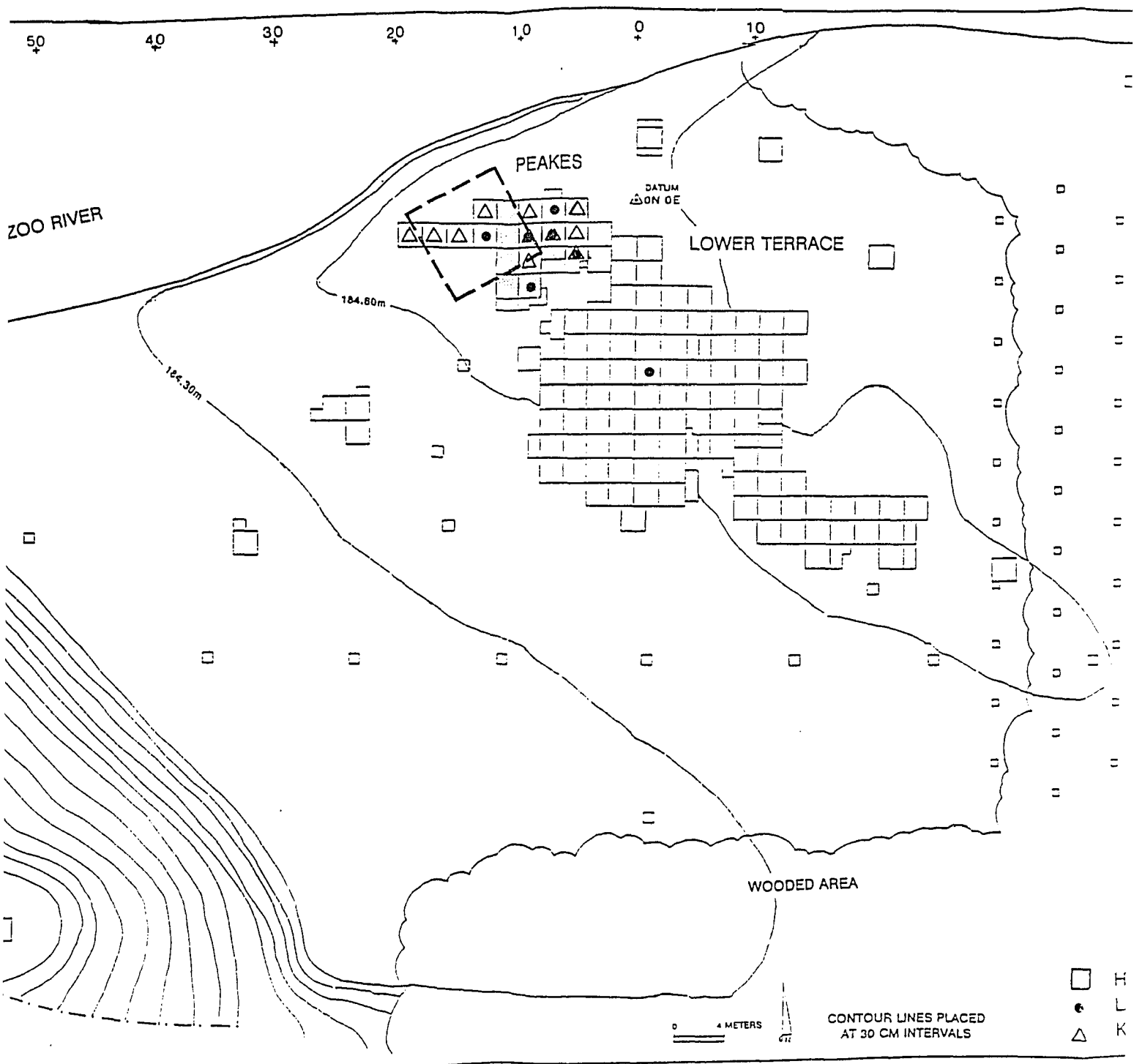
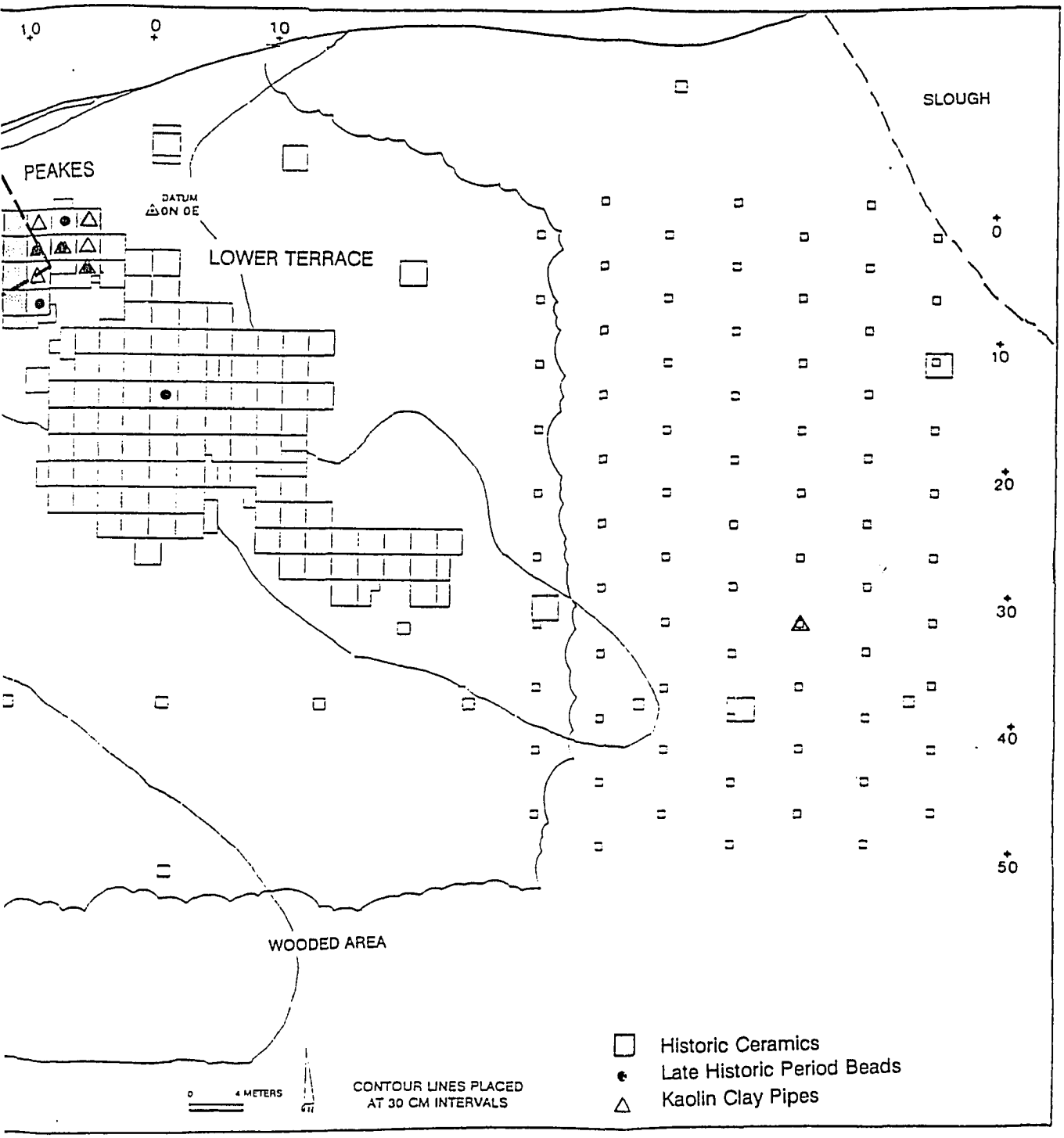


Figure 17. Map Showing Distribution of Second Historic Occupation Artifacts on the Elam Site in Relation to the Historic Structure (Peakes) on Ca.1840 Map.



nd Historic Occupation Artifacts on the Elam Site
:cture (Peakes) on Ca.1840 Map.

Saugatuck in the 1840s (Warner 1896) and is located just upstream from the Elam site.

In conclusion, the preceding data suggests the presence of two pre-twentieth century historic occupations of the Elam site. The first was a continuous transient occupation of the site probably by Potawatomi prior to 1700. The second was a brief usage of the site by a fur trader named Peake who inhabited a temporary structure sometime close to 1840, prior to the permanent settlement of the area by non-native Americans.

Appendix A

Artifact Catalogue

APPENDIX A: ARTIFACT CATALOGUE

Glass Trade Beads

Provenience	Type	Shape	Color	Opacity	Size	Date Range
2S 8W, L-2	If	Faceted Tube	Ultra-marine	TR	ML	1760-1820
	If	Faceted Tube	Amber	TR	L	1760-1820
4S 8W, L-1	If	Faceted tube	Ultra-marine	TR	L	1760-1820
4S 10W, L-3	If	Faceted Tube	Ultra-marine	TR	ML	1760-1820
4S 14W, L-3	If	Faceted Tube	Ultra-marine	TR	ML	1760-1820
5S 6W, L-3	If	Faceted Tube	Amber	TR	L	1760-1820
8S 10W, L-2	If	Faceted Tube	Ultra-marine	TR	L	1760-1820

Provenience	Type	Shape	Color	Opacity	Size	Date Range
9S 4E, PZ	IIa55	Oval	Dark Blue	TR	M	
13s 5E, PZ	IIa6	Sub-sphere	Black	OP	L	1670-1760
13S 4E, PZ	IIa6	Sub-sphere	Black	OP	L	1670-1760
13S 2E, PZ	IIa6	Sub-sphere	Black	OP	L	1670-1760
13S 0E, L-1	IIa6	Spherical	Black	OP	L	1670-1760
13S 2W, L-2	IIa6	Spherical	Black	OP	L	1670-1760
13S 4W, L-1	IIa6	Sub-sphere	Black	OP	L	1670-1760
L-2	IIa6	Sub-sphere	Black	OP	L	1670-1760
13S 6W, L-2	IIa6	Sub-sphere	Black	OP	L	1670-1760
L-3	IIa6	Sub-sphere	Black	OP	L	1670-1760

Provenience	Type	Shape	Color	Opacity	Size	Date Range
13.5S 10W, L-3	IIa6	Sub-sphere	Black	OP	L	1670-1760
15S 0E, L-1	WIb7	Sub-sphere	Amber	TR	ML	1700-1820,
	IIa6	Sub-sphere	Black	OP	ML	1670-1760
	IIa6	Sub-sphere	Black	OP	L	1670-1760
15S 2W, PZ	IIa6	Sub-sphere	Black	OP	L	1670-1760
L-2	IIa6	Sub-sphere	Black	OP	ML	1670-1760
15S 2W, L-2	IIa6	Sub-sphere	Black	OP	L	1670-1760
17.5S 4W, PZ	IIa6	Sub-sphere	Black	OP	L	1670-1760
	IIa6	Sub-sphere	Black	OP	L	1670-1760

Provenience	Type	Shape	Color	Opacity	Size	Date Range
17S 6W, PZ	IIa6	Sub-sphere	Black	OP	L	1670-1760
27S 50W, L-2	IIa42	Oval	Turquoise/ green	OP	L	Unknown
50S 70W, L1	MIb	Sub-Sphere	Light blue	OP	M	1837+

Buttons

Provenience	No	Type(Elam)	Comments
2S 8W, L-3	1	Metal	Cap to Bell button
4S 10W, L-2	1	Glass	Small, bright navy blue glass globule, with a wire shank embedded in the base manufactured using a scissors mold, which would simultaneously insert the metal shank in the button back.
8S 10W, L-3	1	Glass	Small, bright navy blue glass globule, with a wire shank embedded in the base manufactured using a scissors mold, which would simultaneously insert the metal shank in the button back.
15S 6W, PZ	1	Metal	Bell button, pewter, hollow domed three piece construction with a mold seam between the upper and lower halves, shank was soldered onto back
17S 8W, PZ	1	Metal	Large, three piece metal disk, badly rusted face folded over onto back
19S 0E, PZ	1	Metal	Same as above
23S 6W, PZ	1	Metal	Cap to white metal Bell button
41S 77W, L-1	2	Bone	Flat, four holed undecorated bone button
	2	Shell	Small, undecorated 4 holed shell button
	1	Shell	Large, flat, 2 holed shell button with grooved face

Provenience	No	Type(Elam)	Comments
42S 76.5W, L-1	1	Veg Ivory	4 holed, dark brown
53S 64W, L-2	1	Shell	Double holed shell button
60S 55W, L-1	1	Metal	4 holed crimped edge, badly rusted
	1	Veg Ivory	4 holed, beige
TP 13.1	1	Shell	Fisheye style shell button
	1	Shell	Decorated fisheye button
	2	Shell	Small 4 holed shell button

Gunflints

Provenience	Type	Measurements	Date Range
2S, 14W, L-1	Wedge Shaped	25.4 x 22.9 x 9.0	1650-1770
4S 12W, L-1	French Blade	21.2 x 17.7 x 4.2	1719-1820
4S 16W, L-3	English Blade	22.6 x 17.9 x 7.9	1800-
21S 2E, EAST EXT	English Blade	22.9 x 18.0 x 5.5	1800-
	Flake	22.0 x 7.4 x 3.8	
	Flake	9.6 x 7.0 x 1.4	

Bullets

Provenience	No. of Pieces	Gauge	Type	Maker's Mark
Feature 27, L-1	1	.12	casing	PETERS NO 12 REFEREE
Square AA.1	1	.12	casing	PETERS NO 12 VICTOR
Square B.1	1	.12	casing	WESTERN Nº X PERT
Square H.1	1	.12	casing	PETERS NO 12 REFEREE
Square U.1	1	.22	bullet	lead bullet
U.2	1	.410	shotgun shell	
6S 10W, l-1	1	.12	casing	W-W 12 ⊙ GA AA red plastic casing
13S 2W, PZ	1	.22	casing	C
13S 4W, L-2	1	.22	casing	SUPER
13S 6W, PZ	1	.22	casing	H

Provenience	No. of Pieces	Gauge	Type	Maker's Mark
15S 8E, PZ	1	.22	bullet	lead
19S 0E, PZ	1	.12	casing	REDHEAD Nº 12 L O N G
RANGE				
TP 12.2	1	.22 short	casing	U
	1	.38	casing	PETERS 38 S&W
41S 84W, L-1	1	.22 long	casing	U
42S 76.5W, L-1	1	.32 ?	casing	
48S 65W, L-2	1	.22 long	casing	U
L-3	1	.22 long	casing	R
50S 64W, L-1	5	.22 short	casing	U
	2	.22 short	casing	R
	1	.22 long	casing	SUPER
	1	.22 long	casing	R
	1	.22 long	casing	H
L-2	1	.22 short	casing	R
50S 65W, L-1	1	.12	casing	PETERS Nº12 TARGET
	1	.32	casing	U
	1	.22 long	casing	P
L-2	1	.22 long	casing	P
	1	.22 long	casing	H
	1	.22 short	casing	P
Fea. 70	1	.22 long	casing	R

Provenience	No. of Pieces	Gauge	Type	Maker's Mark
50S 70W, L-1	1	.22 short	casing	U
52S 68W, L-2	2	.22 short	casing	U
53S 63W, L-1	1	.22 short	casing	N
	1	.22	bullet	small lead
53S 64W, L-1	1	.22 long	casing	P
53S 68W, L-1	5	.22 short	casing	U
L-3	1	.22 short	casing	U
53S 70W, L-1	1	.22 short	casing	
	1	.22 long	casing	H
L-2	3	.22 short	casing	U
L-3	1	.22 short	casing	P
N 1/2, L-2	1	.22 short	casing	U
54S 64W, L-1	1	.22 short	casing	U
	1	.22 long	casing	R
54S 68W, L-1	1	.22 long	casing	P
L-3	1	.22 short	casing	U
55S 68W, Sod	1	.22 short	casing	U
L-2	1	.44	casing	U.M.C. .44 X.L.
	4	.22 Short	casing	U
over Fea. 79	1	.22 short	casing	U

Provenience	No. of Pieces	Gauge	Type	Maker's Mark
55S 68W				
N wall ext	2	.22 short	casing	U
over Fea. 80	2	.22 short	casing	U
56S 68W, L-3	1	.32	casing	U.M.C. .32 S&W
L-4	1	.22 short	casing	U
57S 68W, L-1	1	.32	casing	U.M.C. .32 S&W
	1	.22 long	casing	SUPER
L-2	1	.22 short	casing	U
	2	.22 long	casing	H
	4	.32	casing	U.M.C. .32 S&W
60S 55W, L-1	2	.22 long	casing	SUPER
	1	.22 Xtra long	casing	U

Provenience	No	Type	Vessel Part	Date Range	Comments

Historic Ceramics

Provenience	No	Type	Vessel Part	Date Range	Comments
TP 13, L-1	2	Brown Transferware	body	1830-1860	Floral pattern, Cross-mend
	1	Red Transferware	body	1830-1860	Floral/Leaf pattern
	4	Blue shell/	rim	1830-1860	Scalloped rim, feather-edged, 2 cross-mend
	6	Whiteware	body		
L-2	1	Brown Transferware	body	1830-1860	Floral pattern
	2	Blue shell/ feather-edged	rim	1830-1860	Scalloped rim
	1	Porcelain	body	1815-1850	glassy gold Lusterware exterior surface
	2	Red Stoneware	body		Unglazed
L-3	1	Whiteware	body		
	1	Whiteware	rim		
L-4	1	Sepia brown transferware	body	1830-1860	Village Scene

Provenience	No	Type	Vessel Part	Date Range	Comments
2S 6W, PZ	1	Ironstone	base	1813-1890	
2S 12W, L-1	1	Red Transferware	body	1830-1860	floral pattern
4S 12W, L-1	1	Ironstone	lip	1813-1890	small fragment
4S 16W, L-3	2	Lead glazed	body		Bristol slip Stoneware Clear lead glaze over majority of sherd, a small portion of exterior surface has a brown/cream-/yellow glaze
4S 18W, L-2	1	Lead glazed Stoneware	body		Same vessel as 4S 16W, L-3
6S 12W, L-2	1	Ironstone	body	1813-1890	
8S 12W, L-2	1	Whiteware	body		blue dot, possibly blue transferware
	1	Red Transferware	body	1830-1860	floral pattern
8S 10W, L-2	4	red Transferware	body	1830-1860	floral pattern
15S 8E, PZ	1	Bisque	Doll limb		Cigar shaped tan/gray unglazed

Provenience	No	Type	Vessel Part	Date Range	Comments
18S 24W, PZ	1	Whiteware	body		Maker's mark Lion w/ crown
23S 4W, PZ	1	Ironstone	rim	1813-1890	Rim from plate/saucer
41S 77W, L-1	1	Salt glazed Stoneware	body	late 19th century	Exterior-clear Bristol glaze Interior-brown Albany glaze
	2	Blue shell/ feather-edged	rim	1830-1860	scalloped rim
	1	Brown Transferware	body	1830-1850	Floral pattern
	5	Whiteware	body		
	1	Stoneware	body		Exterior-white glaze, Interior unglazed
41S 84W, L-1	5	Red Transferware	body	1830-1850	Floral pattern
	1	Porcelain	body		white
	2	Whiteware	body		
	1	Annularware	rim	1830-1860	Aqua-green/white banded mochaware
	5	Unidentified	body		burned
	13	Red Stoneware	body	20th century	Unglazed, probably Modern garden pots for plants

Provenience	No	Type	Vessel Part	Date Range	Comments
42S 76.5W, L-1	3	Blue shell/ feather-edged	rim	1830-1860	scalloped rim
	1	Red Transferware	body	1830-1860	Pattern not discernable
	8	Whiteware	body		
	1	Annularware	rim	1830-1860	Aqua/white banded mocha-ware
50S 64W, L-1	1	Whiteware	body		
	1	Ironstone	body	1813-1890	
	1	Lead glazed red Stoneware	body	19th century	Clear Bristol glaze on one side
L-2	3	Ironstone	body	1813-1890	
	1	Whiteware	base	1876-1882	Lion and shield maker's mark, probably Charles Meakin
50S 65W, L-1 EXT E	1	Ironstone	body	1813-1890	White
	1	Red Stoneware	body		Exterior unglazed, Interior clear Bristol glaze
50S 70W, L-1	1	Whiteware	body		
	1	Blue shell/ feather-edged	rim	1830-1860	Scalloped rim

Provenience	No	Type	Vessel Part	Date Range	Comments
	1	Porcelain	rim		Decorated with a thin gold horizontal band around circumference
53S 63W, L-3 above F.83	1	Whiteware	rim		
	1	Whiteware	body		
53S 64W, L-3	2	Ironstone	body	1813-1890	
53S 70W, L-1 N 1/2	3	Ironstone	body	1813-1890	
	1	Porcelain	rim	20th century	Hand painted with red band at lip and oriental design on body
L-2	1	Embossed Whiteware	rim	1840+	Embossed edge
	1	Ironstone	rim	1813-1890	
	2	Ironstone	body	1813-1890	
L-3	1	Ironstone	body	1813-1890	
54S 64W, L-2	1	Brown Transferware	body	1830-1860	Leafy pattern
	1	Whiteware	body		
55S 68W, L-1 over F79	1	Red Transferware	body	1830-1860	Floral pattern
	2	Whiteware	body		

F. 79	1	Whiteware	body		
56S 68W, L-1	2	Red Transferware	body	1830-1860	Geometric design around leaf or floral pattern
	1	Ironstone	body	1813-1890	
L-2	1	Salt glazed Red Stoneware	body		Clear salt glazed Bristol slip
60S 53W, L-1	4	Whiteware	body		
60S 55W, L-1	7	Whiteware	body		
	2	Porcelain	body		

Glass

Provenience	No	Type	Color	Comments
Square B.2	1	Bottle	Clear	
Square C.2	1	Bottle	Aqua	
Square K.1	2	Window	Aqua	
Square N.1	1	Bottle*	Amber	* All part of one vessel
Square N.2	1	Bottle*	Amber	
Square N.3	2	Bottle*	Amber	
	1	Bottle neck	Amber	
Square NN.2	1	Bottle*	Amber	
Square NW.3	1	Bottle*	Amber	
	1	Bottle base*	Amber	
Square NS.1	1	Bottle*	Amber	
Square NS.2	1	Bottle*	Amber	
Square O.1	1	Bottle	Aqua	
Square O.2	2	Bottle	Clear	
Square S.2	2	Window	Aqua	
Square V.1	1	Bottle**	Clear	** All part of same vessel
Square V.2	3	Bottle**	Clear	
Square V.3	1	Bottle**	Clear	
Feature 25.3	1	Unid	Clear	

Provenience	No	Type	Color	Comments
18S 26W, PZ	1	Bottle	Aqua	
21S 2W, PZ	1	Bottle	Clear	
4N 0E	1	Bottle neck	Aqua	Rounded lip with stopper finished bore for cork
4N 0E, L-1	1	Bottle	Aqua	
	1	Bottle	Clear	
2S 8W	1	Flat	Aqua	Residue, possibly mirror
2S 12W, L-1	1	Flat	Aqua	
	1	Bottle	Aqua	Thin
2S 14W, L-1	1	Window	Aqua	
	1	Flat	Aqua	Residue, mirror?
4S 4W, L-1	1	Bottle	Aqua	
4S 12W, PZ	1	Window	Aqua	
5S 6W, L-2	1	Bottle base	Aqua	Imprinted with "RO...", round, flat base with mold seam
6S 4W, L-2	1	Window	Aqua	
6S 4W, L-3	1	Bottle	Amber	
8S 10W, L-2	2	Bottle	Amber	Associated with F. 87
	1	Bottle base	Amber	Associated with f. 87
	2	Window	Aqua	Degrading, Associated with F. 87
8S 10W, L-1 East Ext	1	Bottle	Amber	Associated with F. 87

Provenience	No	Type	Color	Comments
8S 10W, L-2	1	Bottle	Amber	Associated with F. 87
(east ext)	1	Bottle	Aqua	Associated with F. 87
8S 10W, L-3 (west ext)	1	Bottle	Amber	Associated with F. 87
8S 10W, L-1	1	Bottle	Amber	Associated with F. 87
(south ext)	1	Window	Aqua	Associated with F. 87
8S 10W, L-2 (south ext)	1	Bottle	Amber	Associated with F. 87
8S 12W, L-2	2	Window	Aqua	Associated with F. 87
9S 10W, L-1	1	Bottle	Amber	
9S 10W, L-2	1	Bottle	Amber	
9S 12W, L-1	1	Bottle	Amber	
9S 12W, L-3	1	Window	Aqua	
13S 10E, Fea.48	1	Window	Clear	
13S 0E, PZ	1	Window	Clear	
	1	Bottle	Amber	
13S 6W, PZ	3	Bottle	Amber	
13S 6W, L-3	3	Bottle	Amber	
13S 8W, PZ	1	Bottle	Amber	
13S 8W, L-1	1	Bottle	Amber	
South Ext	1	Window	Aqua	

Provenience	No	Type	Color	Comments
13S 8W, L-2 South Ext	1	Bottle	Amber	
15S 0E, L-2	2	Window	Clear	
15S 4W, PZ	1	Bottle	Amber	
17S 2W, PZ	1	Window	Clear	
17.5S 4W, PZ	1	Window	Clear	
19S 8W, PZ	1	Window	Aqua	
11S 115?, PZ	13	Bottle***	Amber	*** All part of one vessel found in association with a lightning type closure with a rubber coated metal stopper attached to the wire bale, patented in 1875 and still in use today, usually jon beer or ale bottles (Jones et al. 1989)
	1	Bottle lip***	Amber	
	1	Bottle base***	Amber	
83-117	1	Bottle***	Amber	
83-175	1	Bottle***	Amber	
83-226	2	Bottle***	Amber	
13S 0E, PZ	1	Window	Clear	
	1	Bottle	Amber	

Provenience	No	Type	Color	Comments
41S 77W, L-1	1	Liner	Clear	Glass liner from a lightning closure jar with mold centring configuration for wire bales. The bale passes over the top of the glass lid and is centered by two raised dots. Original lightning closure jar was patented on April 25, 1882, by Henry Putnam (Toulouse 1966:-466).
	1	Bottle base	Clear	Imprinted : ...IN.U.S. ...C.22.1903 ...JULY.17.1906
	1	Bottle	Aqua	With mold seam
	1	Bottle	Dark amber	
42S 76.5W, L-1	1	Liner	Aqua	Glass liner from lightning closure jar with two raised dots in centring for bale wire
	1	Bottle	Amber	
	1	Bottle	Aqua	
50S 64W, L-2	1	Bottle neck	Clear	From small bottle
	13	Misc.	Clear	At least 5 vessels
	2	Window	Aqua	
53S 70W, L-1	1	Bottle base	Aqua	3/4" diameter, shallow concave base
	1	Misc.	Amethyst	Glass manufactured between the last 1/4 of the 19th century and World War I turns amethyst when exposed to sunlight (Jones et al. 1989)
	2	Bottle	Clear	
	1	Window	Clear	

Provenience	No	Type	Color	Comments
53S 70W, L-2	1	Bottle	Amethyst	
	2	Bottle	Aqua	
	2	Bottle	Clear	
55S 68W, S 1/2 F 80	2	Acid etched	Clear	
TP 13.1	2	Bottle	Amber	Straight, rounded body
	1	Flat	Clear	
	1	Window	Aqua	
	1	Bottle	Clear	Imprinted ...AV... ...E OF
TP 13.2	1	Window	Aqua	
	1	Bottle	Aqua	
TP 13.3	1	Flat	Aqua	Thin
41S 84W, L-1	2	Bottle	Clear	Patinated
	2	Window	Aqua	
	7	Bottle	Aqua	Thin, one shard burned
	1	Bottle	Aqua	
53S 68W, 20cm-subsoil	1	Window	Clear	
53S 68W, L-1	1	Bottle lip	Clear	Crown finish
	1	Bottle lip	Aqua	Crown finish
	1	Bottle	Aqua	
54S 68W, L-1	1	Bottle	Clear	Thin
L-3	1	Unid.	Clear	Thick
L-4	1	Bottle	Clear	Thick

Provenience	No	Type	Color	Comments
55S 68W, L-1 (sod)	1	Bottle	Clear	
	1	Window	Aqua	
	1	Bottle	Aqua	
L-1 below sod	3	Window	Aqua	
L-2	1	Acid etched	Clear	
L-3	1	Bottle	Aqua	
L-4	1	Acid etched	Clear	
	1	Unid.	Clear	
Ext	1	Window	Clear	
Fea.80, Zone A	1	Acid etched	Clear	
Fea.80, Zone B	1	Bottle	Clear	
54S 64W, L-3	1	Window	Aqua	
	1	Bottle	Clear	
57S 68W, L-2	1	Bottle	Clear	
TP 12.1	1	Bottle	Clear	Thin
TP 12.2	1	Bottle	Clear	Thin
TP 14.3	2	Bottle	Clear	
TP 1.2	1	Unid	Aqua	
Sq. P.2	1	Window	Aqua	
Fea.79, Z-B	1	Window	Clear	

Provenience	No	Type	Color	Comments
60S 55W, L-1	1	Lip/rim	Clear	Scalloped
60S 53W, L-1	1	Bottle	Clear	
53S 64W, L-1	1	Bottle	Clear	
L-2	1	Window	Aqua	
	2	Bottle	Clear	Thin
	1	Bottle	Clear	Thick
50S 65W, L-1	1	Bottle	Aqua	Imprinted ...IAN
	1	Bottle	Amber	
	1	Bottle	Clear	
	1	Window	Clear	
L-2	4	Window	Clear	
	7	Bottle	Clear	3 vessels
	1	Unid.	Aqua	
Fea.70				
(30-40cm)	2	Bottle	Clear	Thin, 2 vessels
(50-60cm)	1	Bottle	Clear	
53S 63W, L-2	1	Bottle	Olive	
	1	Window	Clear	
	1	Bottle	Clear	
50S 70W, L-1	1	Window	Clear	
	1	Bottle	Clear	Thick
L-2	1	Bottle	Aqua	Imprinted ..HE..
L-3	1	Pendant	Clear	Tear drop shaped pendant, possibly from a chandelier
L-5	3	Bottle	Clear	

Provenience	No	Type	Color	Comments
48S 65W, L-1	1	Bottle	Clear	Thin
	1	Bottle	Aqua	
L-2	2	Window	Aqua	
	2	Bottle	Clear	2 vessels
L-3	1	Window	Aqua	
	1	Window	Clear	

Structural/Building Materials, Hardware, and Miscellaneous Modern Materials

Provenience	No.	Description
TP 3.2	1	Plastic flowerpot fragment
TP 25	1	Barrel hoop fragment
Feature 44, PZ	1	Baling wire fragment
Square A.1	1	Lead fishing weight with metal shank, painted blue, with attached nylon fishing line
Square C.4	1	Window screen fragment
Square I.2	1	Barrel hoop fragment
Square J.1	1	Cast iron fragment
Square U.2	7	Common modern wire nails
	2	Modern wire roofing nails
	4	Unidentified metal fragments
U.3	7	Unidentified metal fragments
4N 0E, L-1	1	Unidentified metal fragment
S Ext, L-1	1	Common modern machine cut nail
N Ext, L-1	1	Bucket rim fragment
2S 12W, L-1	1	Common modern machine cut nail fragment
	1	Bucket rim fragment
L-2	1	Modern machine cut nail fragment
4S 6W, L-2	1	Screw

Provenience	No.	Description
4S 10W, Fea 58	1	Modern machine cut finishing nail
4S 12W	1	Common modern machine cut nail
5S 2W, L-2	2	Baling wire fragments
	1	Fragment flashing
	1	Black plastic trash bag
8S 10W, L-2	1	strip flashing
11S 7W, ext, L-1	1	Trowel
13S 6E, PZ	1	1 1/4" metal washer
13S 4W, L-3	1	Common modern machine cut nail with modified head
13.5S 10W, PZ	1	Ring pull can tab
17S 0E, PZ	2	Unidentified metal fragments
17S 4E, PZ	1	3/8" metal washer
17S 6E, PZ	1	Unidentified metal fragment
17S 8E, PZ	1	Plastic flowerpot fragment
18S 24W, PZ	3	Common modern machine cut nails
	3	Modern machine cut nail fragments
18S 24W, N Ext, PZ	1	Hack saw blade fragment
18S 26W, PZ	9	Common modern machine cut nails
	1	Common modern wire nail
	1	Modern machine cut fragment
19S 6E, PZ	1	Solid metal rod fragment

Provenience	No.	Description
19S 0E, PZ	7	Unidentified metal fragments
19S 2W, PZ	1	1 1/4" staple
20S 24W, PZ	8	Common modern machine cut nails
	1	Common wire nail
	1	Modern machine cut nail fragment
21S 2W, PZ	10	Metal bucket fragments, including 1 rim fragment
	1	Plastic flowerpot fragment
	1	1968 dime
21S 4W, PZ	1	Aluminum foil fragment
21S 6W, PZ	1	Top of tin, flat top beverage can with church key opening. Church key and flat top beer can invented in same year. Commercial production began in 1935 (Rock 1980).
	1	Double seamed sanitary can. Sanitary cans began to be manufactured in the U.S. between 1894-1903 (Rock 1980).
21S 8W, PZ	1	Unidentified metal fragments
	1	Plastic flower pot fragment
	2	Flat top beverage cans with church key openings
21S 9W, PZ	1	Plastic flower pot
23S 2E, SW Ext	1	Common modern wire nail
23S 4W, PZ	13	Metal bucket fragments, including 3 rim fragments
	1	LABATT'S 50 bottle cap

Provenience	No.	Description
23S 6W, PZ	1	Common modern machine cut nail
	1	Flat top tin beverage can with church key opening. Church key and flat top beer can invented in same year. Commercial production began in 1935 (Rock 1980).
23S 8W, PZ	3	Common modern wire nails
	1	Modern wire nail fragment
	1	Screw
24S 12E, PZ	7	Bucket fragments
25S 2E, NE Ext	4	Common modern wire nails
	2	Ring pull can tabs
25S 4W, PZ	1	Unidentified metal fragment
30S 14E, PZ	1	3/4" metal washer
	1	Metal file fragment
TP 12.1	1	Common wire nail
	4	Common modern machine cut nails
	2	Modern machine cut finishing nails
	2	Square cut nail fragments
	1	Tin foil fragment
	1	Leather fragment
	1	Rivet
12.2	1	Orange brick fragment
TP 13.1	4	Wire roofing nails
	6	Common wire nails
	2	Small wire finishing nails
	1	6" wire spike
	1	Door hinge lock plate with 2 wire nails and 1 screw attached
	1	Round, steel radiator hose clamp
	1	12" strip flashing
	1	Machine part, unid.

Provenience	No.	Description
	1	Scrap aluminum
	2	Washers
	4	Roofing shingle fragments
	1	Unidentified metal fragment
13.2	6	Common wire nails
	2	Wire roofing nails
	2	Common machine cut nails
13.3	2	Wire roofing nails
	1	Common wire nail
	2	Common machine cut nails
	2	Buff/pink brick fragments
13.4	1	Buff brick fragment
41S 77W, L-1	7	Wire roofing nails
	2	Wire finishing nails
	20	Common wire nails
	7	Common modern machine cut nails
	3	Unidentified nail fragments
	1	Door spring fragment
	2	Screws
	2	Baling wire fragments
	1	Electrical wire length
	1	Aluminum flashing fragment
	1	Synthetic stretch fragment
	6	Unidentified fragments
41S 84W, L-1	1	Common wire nail
	2	Common modern machine cut nails
	2	Thin, fine wire fragments
	1	Tin foil fragment
42S 76.5W, L-1	4	Wire roofing nails
	9	Common wire nails
	8	Common modern machine cut nails
	1	Wire finishing nail
	2	Staples

Provenience	No.	Description
	1	Screw
	1	Screwed bolt
	3	Canning lid fragments
	17	Bucket fragments
48S 65W, L-2	2	Common wire nails
	3	Common modern machine cut nails
	1	Large modern machine cut spike
	1	Unidentified flat wire strip
L-3	3	Common modern machine cut nails
	1	Common wire nail
	1	Large fish hook fragment
Fea. 77	1	Modern machine cut finishing nail
50S 64W, L-1	5	Common wire nails
	3	Common modern machine cut nails
	1	1/2" washer
	2	Large staples
	3	Scraps of aluminum
	1	Plastic liner for jar lid
	1	scissor handle fragment
	5	roofing shingle fragments
	3	Unidentified metal
	3	Dark green vulcanized rubber fragments
L-2	1	Common wire nail
	9	Modern machine cut nail fragments
	1	3/4" washer
	1	Baling wire fragment
	3	Roofing shingle fragments
	8	Roofing tar fragments
	1	Cement fragment
50S 65W, L-1	1	Hinge fragment
	1	Large (6") cotter pin-like screw with nut

Provenience	No.	Description
L-2	15	Common wire nails
	1	Common modern machine cut nail
	1	Wire roofing nail
	2	Screws
	1	Large staple
	1	Bottle cap
L-5 Fea. 70	1	Common wire nail
L-6 Fea. 70	1	Common modern machine cut nail
50S 70W, L-1	6	Wire roofing nails
	3	Wire finishing nails
	3	Common wire nails
	1	Shoe horn
	1	Roofing tile fragment
	1	Cotter pin
	1	Key opener for sardine type can
	1	Screw
	1	Unidentified metal
L-2	2	Wire roofing nails
	4	Common modern machine cut nails
	4	Metal fragments
	1	Broken bottle cap
L-3	1	Small belt buckle fragment
	1	Door spring fragment
	1	Screw cap possibly from a compass or clock or other delicate instrument
L-4	1	Modern machine cut spike
	1	Common modern machine cut nail
L-5	1	Common modern machine cut nail
	1	Common wire nail
	1	Aluminum fragment

Provenience	No.	Description
52S 68W, L-2	2	Wire roofing nails
	1	Wire tack
	1	Iron fragment
53S 63W, L-1	1	Modern machine cut nail fragment
	1	Horseshoe, 4 holes in follering (groove) on each side of shoe, reinforcing bar on top, similar to 19th century machine made Type 13 (Chappell 1973: Figure 6, p116).
	1	Rivet
	1	1/2" washer
	1	Baling wire fragment
	1	Bottle cap
L-2	22	Common modern machine cut nails
	1	Screw
	1	Nut
	4	Unidentified metal fragments
53S 64W, L-1	1	Common wire nail
	3	Common modern machine cut nails
	1	1/2" open end wrench
	1	Large screw
	3	Heavy duty wire fragments
L-2	3	Common modern machine cut nails
L-3	2	Wire finishing nails
	1	Common wire nail
	1	Common modern machine cut nail
53S 68W, L-1	1	Small jar or bottle screw top
	1	Large staple
L-2	4	Common wire nails
L-3	2	Common modern machine cut nails

Provenience	No.	Description
53S 70W, L-1	2	Common wire nails
	1	Common modern machine cut nail
L-2	5	Common modern machine cut nails
	1	Modern machine cut finishing nail
	3	Modern machine cut spikes
	1	Screw
	1	Wound strip of aluminum from sardine-like can
L-3	6	Common modern machine cut nails
	1	Screw
N1/2,L-1	1	Common modern machine cut nail
L-2	6	Common modern machine cut nails
	2	Common wire nails
L-3	7	Common modern machine cut nails
	1	Common wire nails
54S 64W, L-1	1	Common modern machine cut nail
	1	Possible broken carburetor
L-2	1	Common modern machine cut nail
	1	Large flat thin metal scrap
L-3	2	Common modern machine cut nails
54S 68W, L-1	1	Rivet fragment (clothing)
	3	Roofing tar fragments
L-2	1	Modern machine cut spike with altered head
	1	Common modern machine cut nail
	1	Round wire tack
L-3	1	Common modern machine cut nail

Provenience	No.	Description
55S 68W, Sod	1	Modern machine cut finishing nail
	1	Tin foil fragment
	1	Aluminum foil fragment
	1	Roofing tar fragment
L-2	1	Modern machine cut finishing nail
	4	Common modern machine cut nails
	1	Wire roofing nail
	1	Wire finishing nail
	6	Common wire nails
	2	Unidentified metal fragments
L-4	3	Common modern machine cut nails
	1	Wire finishing nail
N wall ext	1	Modern machine cut spike
	1	Wire roofing nail
	2	Common modern machine cut nails
	1	Roofing tar fragment
	1	Rubber strip fragment
	1	Rubber hose fragment
	1	Plastic fragment
over Fea. 79	1	Wire roofing nail
	4	Common wire nails
over Fea. 80	4	Wire roofing nails
	2	Wire finishing nails
	2	Unidentified metal fragments
Fea. 80, Z-B	1	Common modern machine cut nail
56S 68W, Sod	2	Common modern machine cut nails
	2	Wire roofing nails
	1	Tin foil fragment
L-2	2	Common modern machine cut nails
	1	Wire finishing nails

Provenience	No.	Description
L-3	1	Common modern machine cut nail
	2	Wire roofing nails
	2	Common wire nails
	1	Small light bulb socket
	1	Safety pin
L-4	1	Modern machine cut spike with altered head
	1	Modern machine cut finishing nail
	7	unidentified metal fragments
57S 68W, L-1	1	Wire spike
	1	Wire finishing nail
	2	Sanitary can top fragments, opened with a can opener
	1	Speedometer cable fragment
	1	Unidentified metal fragment
L-2	3	Modern machine cut finishing nails
	6	Common modern machine cut nails
	7	Fragments of 2 sanitary can tops
58S 136E, 20CM SW1/2	1	Baling wire
60S 53W, L-1	1	Wire spike
	1	Common modern machine cut nail
	1	Rounded metal fragment
	1	Metal name tag imprinted "Bill Priebe 334 Cutler Allegan Mich"
	1	Dark orange/red brick fragment
60S 55W, L-1	1	Cotter pin
	2	Barrel hoop fragment
	1	Roofing tar fragment
	3	Unidentified metal fragments
67S 37W, PZ	1	Large Staple

Kaolin Clay Pipes

Provenience	No	Section	Date Range	Type/Comments
TP 13, L-4	1	Stem	Unknown	No decoration
Square J.1	1	Stem	Unknown	No decoration
2S 6W, L-3	1	Bowl	Unknown	Type 4
2S 10W, L-2	1	Bowl	1800-1850	Type 2
2S 14W, L-2	1	Bowl	1800-1850	Type 2
4S 6W, L-2	1	Stem	Unknown	No decoration
4S 8W, L-2	1	Stem	Unknown	No decoration
4S 10W, L-3	1	Bowl	Unknown	No decoration
4S 16W, L-2	1	Stem	Unknown	No decoration
4S 18W, L-3	1	Bowl	1800-1850	Type 2
5S 6W, L-3 above F101	1	Stem	Unknown	No decoration
6S 10W, L-1	1	Stem	1800-1850	Type 2
6S 10W, L-2	1	Stem	Unknown	No decoration
25S 35E, L-1	3	Bowl	1820-1860	Type 1
41S 84W, L-1	2	Stem	Unknown	Undecorated

Provenience	No	Section	Date Range	Type/Comments
48S 65W, L-3	2	Stem	Unknown	1 is a partial shoulder with an unmarked heel spur
50S 65W, L-2 E Ext	1	Bowl	1800-1850	Type 2
53S 64W, L-2	1	Bowl	1850-1900	Type 3
	1	Bowl	1800-1850	Type 2
53S 70W, L-1,N 1/2	1	Stem	Unknown	No decoration
	1	Bowl	Unknown	Thick, no decoration
	1	Bowl		No decoration
53S 70W, L-2	1	Stem	Unknown	Stem with mouth piece
L-3	1	Neck	Unknown	Undecorated terra cotta
54S 64W, L-2	1	Bowl	1800-1850	Fluted on lower half of bowl, Probably Type 2
57S 68W, L-2	1	Neck	Unknown	Type 5, Series of raised dots/-slashes between horizontal raised bands, mold seam smoothed

Native Made Historic Period Artifacts

Provenience	No	Type
2S 8W, F62	1	Burned crinoid section, partially drilled
4S 8W, L-2	1	Crinoid bead
4S 12W, L-2	1	Undrilled crinoid section
4S 16W, L-1	1	Crinoid Bead
L-3	1	Crinoid Bead
4S 18W, L-1	1	Crinoid Bead
L-3	1	Abrader
7S 2W, PZ	1	Groundstone bead
9S 4E, F51	1	Abrader
13S 8E, PZ	1	Copper perforator or awl
13S 2W, PZ	1	Abrader
13S 4W, L-2	1	Abrader
13S 5W, F95	1	Crinoid Bead
15S 4W, PZ	1	Abrader
15S 6W, PZ	1	Crinoid Bead
17S 0E, PZ	1	Abrader
	1	Copper tinkling cone
17S 2W, PZ	1	Crinoid Bead
19S 2E, F75	1	Abrader

Provenience	No	Type
19S 4W, L-1	1	Abrader
19S 0E, PZ	2	Abrader
20S 8E, PZ	1	Crinoid Bead
F79, back dirt	1	Abrader
SQ H.1	1	Partially drilled crinoid section

BIBLIOGRAPHY

Adams, William Hampton, Linda P. Gaw, and Frank C. Leonhardy
1975 Archaeological Excavations at Silcott, Washington: The Data Inventory. Pullman: Washington State University Laboratory of Anthropology, Reports of Investigations 53.

Albert, Lillian Smith and Kathryn Kent
1949 The Complete Button Book. Garden City, New Jersey: Doubleday and Company Inc.

Anonymous
ND Map of Survey of Proposed Improvements Between Allegan and Saugatuck (ca.1840), Cartographic Records, Lands Division, Department of Conservation, RG 58-17, Box 34, Folder 00270. State Archives of Michigan, Bureau of History, Department of State, Lansing MI.

Anonymous
1895 Map of Pine Plains. In Illustrated Atlas of Allegan County, Michigan. Pp. 43. Racine, Wisconsin: Kace Publishing Co.

Anonymous
1969 The 1902 Edition of The Sears, Roebuck Catalogue. New York: Bounty Books.

Barr, Kenneth
1979 An Analysis of the Faunal Assemblage from the Elam Site: An Upper Mississippian Encampment on the Kalamazoo River in Allegan County, Michigan. Unpublished MA thesis, Department of Anthropology, Western Michigan University.

Benson, Barbara E.
1989 Logs and Lumber: The Development of the Lumber Industry in Michigan's Lower Peninsula, 1837-1870. Mount Pleasant: Clark Historical Library, Central Michigan University.

Bettarel, Robert L. and Hale G. Smith
1973 The Moccasin Bluff Site and the Woodland Cultures of Southwestern Michigan. Ann Arbor: University of Michigan, Museum of Anthropology, Anthropological Papers No. 49.

Binford, Lewis
1978 A New Method of Calculation Dates from Kaolin Pipe Stem Samples. In Historical Archaeology: A Guide to Substantive and Theoretical Contributions. Robert E. Schuyler, ed. Pp. 66-67. Farmingdale, New York: Baywood Publishing Co.

Blanchette, Jean-Francois
1975 Gunflints from Chicoutimi Indian Site (Quebec). Historical Archaeology 9:41-54.

Brain, Jeffrey
1979 Tunica Treasure. Cambridge, Massachusetts: Harvard University, Peabody Museum of Archaeology and Ethnology Papers 71.

Brose, David
1967 An Introduction to Dating Historic Ceramics in Michigan. Coffinberry News Bulletin 14(4):344-41.

1970 Summer Island III: An Early Historic Site in the Upper Great Lakes. Historical Archaeology 4:3-33.

1983 Rethinking the French Presence in the Upper Great Lakes. In Lulu Linear Punctate: Essays in Honor of George Irving Quimby. R. C. Dunnell and D. K. Gramson, eds. Pp. 209-252. Ann Arbor: University of Michigan, Museum of Anthropology Papers 72.

Brown, Ann R.
1982 Historic Ceramic Typology with Principal Dates of Manufacture and Descriptive Characteristics for Identification. Dover: Delaware Department of Transportation, Deldot Archaeology Series 15.

Campbell, Amy L.
1983 An Analysis and Interpretation of the Lithic Assemblage at the Elam Site (20 EA 195), Allegan County, Michigan. Unpublished Honors College Senior Paper, Western Michigan University, Department of Anthropology.

Chappell, Edward
1973 A Study of Horseshoes in the Department of Archaeology, Colonial Williamsburg. In Five Artifact Studies, Audrey No 1 Hume, Merry W. Abbitt, Robert H. McNulty, Isabel Davies, and Edward Chappell, eds. Pp. 100-116. Williamsburg, Virginia: Colonial Williamsburg Foundation, Colonial Williamsburg Occasional Papers in Archaeology 1.

Cleland, Charles E.
1971 The Lasanen Site. East Lansing: Michigan State University, Publications of the Museum, Anthropological Series 1.

1972a The Matthews Site (20CL61) Clinton County, Michigan, Michigan Archaeologist 18(4):175-207.

1972b From Sacred to Profane: Style Drift in the Decoration of Jesuit Finger Rings. American Antiquity 37(2):202-210.

Clifton, James A.
1977 The Prairie People: Continuity and Change in Potawatomi Indian Culture, 1665-1965. Lawrence: The Regents Press of Kansas.

1986 Potawatomi. In People of the Three Fires: The Ottawa, Potawatomi, and Ojibway of Michigan. James A. Clifton, George L. Cornell, and James M. McClurken eds. Pp. 39-74. Grand Rapids, Michigan: The Grand Rapids Inter-Tribal Council.

Cogswell, James W.
1986 An Analysis of Early Woodland Pottery From Southwest Michigan. Kalamazoo: Unpublished MA thesis, Western Michigan University, Department of Anthropology.

Cremin, William M.
1992 Researching the Void Between History and Prehistory in Southwest Michigan. Michigan Archaeologist 38(1-2):19-38.

Cremin, William M, R. David Hoxie, and Donald E. Weston
1978 An Archaeological Survey of Allegan County, Michigan: 1977 Transect Survey in the Lower Kalamazoo River Valley. Lansing, Michigan: Michigan Department of State, Michigan History Division.

Deiss, Ronald W.
1981 The Development and Application of a Chronology for American Glass. Normal: Illinois State University Midwestern Archaeological Research Center.

Demeter, C. Stephan
1991 Personal communication

DeRoo, Brian D.
1991 Flotation Data Sampling Strategies in Archaeological Research: An Experiment at the Elam Site (20AE195), Allegan County, Michigan. Kalamazoo: Unpublished MA thesis, Western Michigan University, Department of Anthropology.

DeRoo, Brian D. and Kathryn E. Parker
1989 Ethnobotany of the Late Woodland Component of the Elam Site, A Multi-Component Woodland Site on the Kalamazoo River, Allegan County, Michigan. Iowa City, Iowa: Unpublished Paper Presented at the Midwest Archaeology Conference.

Durant, Samuel W.
1880 History of Kalamazoo County, Michigan. Philadelphia: Everts and Abbott, and J. B. Lippincott and Co.

Fitting, James E.
1975 The Archaeology of Michigan. Bloomfield Hills, Michigan: Cranbrook Institute of Science.

Garland, Elizabeth B.
1986 Early Woodland Occupations in Michigan: A Lower St. Joseph Valley Perspective. In Early Woodland Archaeology. Kenneth B Farnsworth and Thomas E. Emerson, eds. Pp. 47-83. Kampsville, Illinois: Center for American Archaeology, Kampsville Seminars in Archaeology 2.

1989 The Elam Site (20AE195): A Multicomponent Woodland Site on the Lower Kalamazoo River in Southwestern Michigan. Iowa City, Iowa: Unpublished Paper Presented at the Midwest Archaeology Conference.

1991 Personal communication.

Gibbon, Gary
1986 The Mississippian Tradition: Oneota Culture. In Introduction to Wisconsin Archaeology. Wisconsin Archaeologist 67 (3-4).

Good, Mary Elizabeth
1972 Guebert Site: An Eighteenth Century Historic Kaskaskia Indian Village in Randolph County, Illinois. Unlisted: Central States Archaeological Societies, Inc., Memoirs II.

1977 Glass Bead Manufacturing Techniques. In Beads: Their Use by Upper Great Lakes Indians. Pp. 27-34. Grand Rapids, Michigan: Grand Rapids Public Museum.

Hamilton, T. M.
1964 Recent Developments in the Use of Gunflints for Dating and Identification. In Diving into the Past. J. D. Holmquist and A. H. Wheeler, eds. Pp. 52-57. St. Paul: Minnesota Historical Society.

Harrington, J. C.
1978 Dating Stem Fragments of Seventeenth and Eighteenth Century Clay Tobacco Pipes. In Historical Archaeology: A Guide to Substantive and Theoretical Contributions. Robert E. Schuyler, ed. Pp. 63-65. Farmingdale, New York: Baywood Publishing Co.

Hauser, Judith Ann
1982 Jesuit Rings from Fort Michilimackinac and Other European Contact Sites. Mackinac Island, Michigan: Mackinac Island State Park Commission, Archaeological Completion Report Series 5.

Henderson, Donald C.
1881 Allegan County--Its Rise, Progress, and Growth in Population, with a Brief History of Its Press. Michigan Pioneer and Historical Collections 3:270-276.

Herbstritt, James
1987 Notes on the Elam Site Beads. Kalamazoo, Michigan: Unpublished manuscript on file, Western Michigan University, Department of Anthropology.

Herrick, Ruth
1958 A Report on the Ada Site, Kent County, Michigan. Michigan Archaeologist 4(1):1-26.

Hulse, Charles A.
1977 An Archaeological Evaluation of Fort St. Joseph: An 18th Century Military Post and Settlement in Berrien County, Michigan. Unpublished MA thesis, Department of Anthropology, Michigan State University.

Humphrey, Richard V.
1969 Clay Pipes from Old Sacramento. Historical Archaeology 3:12-33.

Israel, Fred L., ed.
1976 1897 Sears Roebuck Catalogue. New York: Chelsea House Publishers.

Johnson, Crisfield
1880 General History of the Two Counties. In History of Allegan and Barry Counties, Michigan. Crisfield Johnson, ed. Philadelphia: D.W. Ensign and Co.

Jones, Olive, Catherine Sullivan, George L. Miller, E. Ann Smith, Jane E. Harris, and Kevin Lunn
1989 Parks Canada Glass Glossary. Ottawa, Ontario: Parks Canada.

Karklins, Karlis
1974 Seventeenth Century Dutch Beads. Historical Archaeology 8:64-82.

1982 Guide to the Description and Classification of Glass Beads. In Glass Beads. Karlis Karklins, ed. Pp. 83-117. Ottawa, Ontario: Parks Canada, National Historic Parks and Sites Branch, History and Archaeology 59.

Kent, Barry C.
1983 The Susquehanna Bead Sequence. In Proceedings of the 1982 Glass Trade Bead Conference. Charles F. Hayes III, ed. Pp. 75-82. Rochester, New York: Rochester Museum and Science Center Research Division, Research Records 16.

Kidd, Kenneth E. and Martha Ann Kidd
1970 A Classification for Glass Beads for the Use of Field Archaeologists. Canadian Historic Sites. Occasional papers in Archaeology and History. No. 1, pp. 46-89.

1983 A Classification System for Glass Beads for the Use of Field Archaeologists. In Proceedings of the 1982 Glass Trade Bead Conference, Research Records No. 16. Charles F. Hayes, III, editor. Pp. 219-256. Rochester, New York: Rochester Museum and Science Center Research Division, Research Records 16.

Kovel, Ralph and Terry Kovel
1986 New Dictionary of Marks. New York: Crown Publishers Inc.

Linebaugh, D. Walter
1983 Nineteenth Century Earthenware from the De Marsac Trading Post Site, Lowell, Michigan. Wisconsin Archaeology 64(3):261-287.

Lofstrom, Ted, Jeffrey P. Tordoff, and Douglas C. George
1982 A Seriation of Historic Earthenwares in Midwest, 1780-1870. Minnesota Archaeologist 41(1):3-29.

Luscomb, Sally C.
1967 The Collector's Encyclopedia of Buttons. New York: Crown Publishers Inc.

Mainfort, Robert C. Jr.,
1979 Indian Social Dynamics in the Period of European Contact: Fletcher Site Cemetery, Bay County, Michigan. East Lansing: Michigan State University, Publications of the Museum.

Majewski, Teresita and Michael J. O'Brien
1984 An Analysis of Historical Ceramics from the Central Salt River Valley of Northeast Missouri. Columbia: University of Missouri Department of Anthropology, Publications in Archaeology 3.

Martin, Patrick E.
1985 The Mill Creek Site and Pattern Recognition in Historical Archaeology. Mackinac Island, Michigan: Mackinac Island State Park Commission, Archaeological Completion Report Series 10.

Mason, Ronald J.
1986 Rock Island: Historical Indian Archaeology in the Northern Lake Michigan Basin. Kent, Ohio: Kent State University Press, Mid-Continental Journal of Archaeology Special Paper 6.

McClurken, James M.
1986 Ottawa. In People of the Three Fires: The Ottawa, Potawatomi, and Ojibway of Michigan. James A. Clifton, George L. Cornell, and James M. McClurken eds. Pp. 1-38. Grand Rapids, Michigan: The Grand Rapids Inter-Tribal Council.

Mead, Barbara
1984 An Early Nineteenth Century Cemetery (20ON84) at Fourteen Mile Point, Ontonagon County, Michigan. Lansing, Michigan: Unpublished Manuscript on file, Michigan Bureau of History.

Mirken, Alan, ed.
1970 The 1927 Edition of the Sears, Roebuck Catalogue. New York: Bonanza Books.

Morgan, G. A.
1881a Township of Pine Plains - A Historical Sketch. Michigan Pioneer and Historical Collections 3:293-296.

1881b Township of Allegan - Its Topography, Products, Early Settlements, and History. Michigan Pioneer and Historical Collections 3:276-293.

Munsey, Cecil
1970 The Illustrated Guide to Collecting Bottles. New York: Hawthorn Books Inc.

Nelson, Lee H.
1968 Nail Chronology as an Aid to Dating Old Buildings. Nashville, Tennessee: American Association for State and Local History, Technical Leaflet 48.

Nern, Craig F. and Charles E. Cleland
1974 The Gros Cap Cemetery Site St. Ignace, Michigan: A Reconsideration of the Greenless Collection. Michigan Archaeologist 20(1):1-58.

Noel Hume, Ivor
1969 A Guide to Artifacts of Colonial America. New York: Alfred A. Knopf.

Olsen, Stanley J.
1963 Dating Early Plain Buttons by Their Form. American Antiquity 28(4):551-554.

Omwake, H. Geiger
1965 Analysis of Nineteenth Century White Kaolin Pipe Fragments From the Mero Site, Door County, Wisconsin. Wisconsin Archaeologist 46(2):125-139.

Oswald, Adrian
1975 Clay Pipes for the Archaeologist. British Archaeological Reports 14.

Parachini, Kathryn E.
1981 The Paleoethnobotany of the Upper Mississippian Component at the Elam Site, A Seasonal Encampment on the Lower Kalamazoo River. Kalamazoo: Unpublished MA thesis, Western Michigan University, Department of Anthropology.

Pittman, William E.
1987 A Laboratory Manual. Williamsburg, Virginia: Colonial Williamsburg Foundation Department of Anthropology, Office of Archaeological Excavation.

Quimby, George
1964 European Trade Objects as Chronological Indicators. In Diving Into the Past. J. D. Holmquist and A. H. Wheeler, eds. Pp. 48-52. St. Paul: Minnesota Historical Society.

1966 Indian Culture and European Trade Goods. Madison: University of Wisconsin Press.

Rock, Jim
1984 Cans in the Countryside. Historical Archaeology 18(2):97-111.

Ross, Lester A.
1974 Hudson's Bay Company Glass Trade Beads: Manufacturing Types Imported to Fort Vancouver (1829-1860). The Bead Journal 1(2):15-22.

Schroeder, Joseph J. (editor)
1971 The 1908 Sears, Roebuck Catalog: A Treasured Replica from the Archives of History. Northfield, Illinois: DBI Books.

van der Sleen, W. G. N.
1967 A Handbook on Beads. Liege: Musee du Verre.

Smith, Carlyle S., translator
1960 Two Eighteenth Century Reports on the Manufacture of Gunflints in France. Missouri Archaeology 22:40-48.

South, Stanley
1964 Analysis of the Buttons from Brunswick Town and Fort Fisher. Florida Anthropology 17(2):113-133.

Spector, Janet D.
1976 The Interpretative Potential of Glass Trade Beads in Historic Archaeology. Historical Archaeology 10:17-27.

Sprague, Roderick
1983 Tile Bead Manufacturing. In Proceedings of the 1982 Glass Trade Bead Conference. Charles F. Hayes III, ed. Pp. 167-172. Rochester, New York: Rochester Museum and Science Center Research Division, Research Records 16.

Stone, Lyle M.
1972 Archaeological Investigation of the Marquette Mission Site, St. Ignace, Michigan, 1971: A Preliminary Report. Mackinac Island, Michigan: Mackinac Island State Park Commission, Reports in Mackinac History and Archaeology 1.

1974 Fort Michilimackinac 1715-1781: An Archaeological Perspective on the Revolutionary Frontier. East Lansing: Michigan State University Museum Anthropological Series.

Tanner, Helen Hornbeck
1987 Atlas of Great Lakes Indian History. Norman: University of Oklahoma Press.

United States Geological Survey
1981 Millgrove, Michigan Quadrangle. Lansing, Michigan: Michigan Department of Natural Resources Geological Survey Division, 7.5" Series (Topographic).

Wade, Herbert
1914 Buttons. In The New International Encyclopedia 4:233-235. New York: Dodd, Mead, and Company.

Wagner, O. E.
1880a The Villages and Townships of Allegan County: Allegan. In History of Allegan and Barry Counties, Michigan. Crisfield Johnson, ed. Philadelphia: D. W. Ensign and Co.

1880b The Villages and Townships of Allegan County: Pine Plains. In History of Allegan and Barry Counties, Michigan. Crisfield Johnson, ed. Philadelphia: D. W. Ensign and Co.

Warner, William W.
1896 Early History of Michigan. Michigan Pioneer and Historical Society 27:289-304

White, Stephen W.
1975 On the Origins of Gunspalls. Historical Archaeology 9:65-73.

Witthoft, John
1966 History of Gunflints. Pennsylvania Archaeology 36(1,2):12-49.

Wittry, Warren L.
1963 The Bell Site, Wn9, An Early Historic Fox Village. Wisconsin Archaeology 44(1):1-57.

Wood, Alice S.
1974 A Catalogue of Jesuit and Ornamental Rings from Western New York State. Historical Archaeology 8:83-104.

Woolworth, Alan R. and W. Raymond Wood
1960 The Archaeology of a Small Trading Post (Kipp's Post, 32MN1) in the Garrison Reservoir, North Dakota. Pp. 239-305. Smithsonian Institute, Bureau of American Ethnology Bulletin 176, River Basin Survey Papers 20.