The Kasten Mound Group

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Loyola University Chicago

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VITA

The author, Fred K. Stuebe, is the son of Fred F. Stuebe and Barbara M. Stuebe. He was born in Harvey, Illinois on 9 October, 1950.

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CHAPTER 1

ARCHAEOLOGICAL OVERVIEW OF JEFFERSON COUNTY, WISCONSIN

This thesis is, in part, a report of archaeological investigations near the Aztalan site in Jefferson County, Wisconsin. Initial interest in the Aztalan area was generated by its association with the Middle Mississippian complex in the American Bottom region, and, in particular, with the Cahokia site near East St. Louis, Illinois. Aztalan is viewed as a northern outpost of the Middle Mississippian cultures, with direct affinities with Cahokia. Investigations near Aztalan had two purposes: (1) to provide additional information about the Aztalan site by examining the area surrounding the site; and (2) to examine the nature of the interaction between the indigenous Wisconsin populations and Aztalan, on the one hand, and between Aztalan and the American Bottom region, on the other. As such, some discussion of Aztalan's relationship with Cahokia is required. Also, since Aztalan did not exist in a cultural vacuum, a brief archaeological summary of Jefferson County is provided. Finally, the status of current Aztalan research is discussed.
THE AZTALAN-CAHOKIAN RELATIONSHIP

The Cahokian complex is, without a doubt, the largest prehistoric occupation north of central Mexico. At present, the site is believed to have encompassed nearly six square miles. Over one hundred mounds, of varying sizes and shapes, have been recovered. The largest and most impressive of these is Monks Mound, an earthen construction over one hundred feet high and covering fifteen acres of ground. However, these descriptions do not adequately describe Cahokia's true importance or complexity. Cahokia acted as a hub for a network of Mississippian occupations throughout the American Bottom. To the north, the Mitchell site (Porter 1973) was connected to "downtown" Cahokia by a system of extinct Mississippi River channels. There were similar mound groups in both East St. Louis and St. Louis, Missouri. At the southern end of the American Bottom, the Lunsford-Pulcher site, near Dupo, Illinois, also participated in this Mississippian network.

Previously, the occupations at Cahokia have been divided into two periods, Old Village and Trappist. The Old Village focus is characterized primarily by three ceramic styles: Powell Plain, with a typical angular-shouldered jar form, with shell-tempering and a smooth
surface of black, grey, or brown; Ramey Incised, the same form and paste as Powell Plain, but with designs of trailed chevrons; and Monks Mound Red, a bowl form, with grit-tempering and red slip. The Trappist focus is the later period of habitation at Cahokia, during which most of the large structures were constructed or enlarged. During this time, grit-tempering largely disappears and vessel style and decoration become more diversified (Griffin 1949; Wray 1952:159-160).

Additional work at Cahokia has resulted in replacing the old, two-part sequence with a six-phase developmental scheme (Fowler and Hall 1972). This scheme has certain limitations that should be considered. It represents the results of a conference held by a number of archaeologists interested in the American Bottom region, but it does not represent the unanimous consensus of the conference's participants. It has been presented as a model for future research in the area. Also, the dates provided are tentative, pending additional research.

The first utilization of Cahokia, a Late Woodland occupation, has been labeled the Patrick Phase (A.D. 600-800). The most abundant evidence for this phase comes from the Powell Mound area on the western edge of Cahokia. A transitional, unnamed phase (A.D. 800-900) follows. At present, this Late Woodland-Mississippian gradation is
inadequately known. With further work, this phase may be merged with the preceding Patrick Phase or with the subsequent Fairmont Phase (A.D. 900-1050). The major construction of Monks Mound began during this time. The following Sterling Phase (A.D. 1050-1150) is characterized by the completion of Monks Mound and other structures. This phase also closely corresponds to materials described as "Old Village."

The transition between "Old Village" and "Trappist" is represented in the Moorehead Phase (A.D. 1150-1250). The basic patterns established during the previous phases are continued in the Moorehead Phase. In addition, certain ceramic changes occur, notably the disappearance of grit-tempering and Powell Plain wares. Additional features are added to Monks Mound during the Sand Prairie Phase (A.D. 1250-1500). During this period, the central ceremonial plaza reverts back to residential use. Following this, another unnamed phase (A.D. 1500-1700) has been suggested. It is uncertain whether the recovered Oneota ceramics represent this phase or earlier occupations. Finally, a Historic Phase (post 1700 A.D.) is represented by a number of burials on the first terrace of Monks Mound.

The Cahokia site represents a complex occupation of the American Bottom. While not continuous, the site area was sporadically occupied over a period of several
hundred years. In addition to the impressive array of architectural and ceramic features, one of the more interesting aspects of Cahokia is its interaction with other prehistoric communities. Recovered ceramics indicate contact with groups in southwest Indiana, Missouri, and Tennessee. For the most part, these contacts probably represent trade relationships. In at least one case, the Aztalan site, it is likely that the Mississippians from Cahokia established a trading community outside the present state of Illinois.

Approximately 300 air miles from Cahokia is another Middle Mississippian occupation, the Aztalan site in southern Wisconsin. Despite this geographic isolation, it is generally agreed that Aztalan represents one of the northernmost outposts of the Middle Mississippian pattern. It is also agreed that Aztalan has close cultural affinities with Cahokia.

Radio-carbon dating (Hurley 1964) and ceramic similarities (Kelly 1933) suggest that, probably during the Sterling Phase, a group of Cahokians travelled north, up the Mississippi River into Wisconsin, via the Rock River. Continuing up the Rock River, these migrants entered the Crawfish River and settled south of the present settlement of Aztalan. It is suggested that the Aztalan site acted as a clearinghouse for trade goods from the northern re-
gions. The presence of large ceremonial structures sug-
gests that the means for maintaining order were largely
religious. However, the construction of stockades and
their eventual destruction also suggest that these means
were not altogether successful.

The Aztalan site has been known for over one hun-
dered years. Its existence was first reported by Judge
N. F. Heyer in a newspaper article in 1837. Lapham under-
took the first scientific examination and mapping project
at the site (Lapham 1855). The first intensive excavations
were conducted by Barrett in 1919, 1920, and 1933. These
explorations were reported in Bulletin 7 of the Milwaukee
Public Museum (Barrett 1933). This monograph remains the
primary source of information concerning the Aztalan site.

When the Aztalan site was made a State park in 1947,
120 acres were purchased. It is suggested that a large
part of the economy of this large village site was based
on agriculture. Quantities of burnt corn have been recov-
ered at Aztalan. This corn has been of the twelve-row
variety, similar to that found at Cahokia, dating at A.D.
1100-1300 (Cutler 1973).

Aztalan also featured a system of wooden stockades
which enclosed the main village area and major ceremonial
centers. This stockade was a series of three palisades,
which are believed to represent site expansion rather than
a series of interlocking defenses. Two truncated pyramidal mounds dominated the site, which also included a number of other mounds.

The ceramic and lithic assemblages continued the Mississippian pattern already established by the architectural features at Aztalan. Shell-tempered pottery dominated the varied ceramic inventory at Aztalan. Barrett (1933:587) illustrated over twenty decorative styles for Mississippian wares at the site. An important ceramic type at Aztalan was a variant of the Ramey Incised type from Cahokia. This ceramic type provides additional evidence for the association between Cahokia and Aztalan. Typically, Mississippian triangular points were among the major lithic types recovered at Aztalan. A wide variety of flaked and polished artifacts completed the lithic inventory.

Despite the apparent relationship between Aztalan and Cahokia, more complete understanding of Aztalan's significance cannot be solely obtained from excavations at the site itself. While it is obviously important to secure the maximum amount of information from the site, it is equally important to understand Aztalan's position within the archaeology of the surrounding region. The following section provides a brief summary of the prehistoric occupations of Jefferson County, Wisconsin.
PREHISTORIC OCCUPATION OF JEFFERSON COUNTY, WISCONSIN

Prehistorically, Wisconsin is placed among the Northeast Woodlands area. Ethnographically, this grouping mirrors the Eastern Woodlands culture area proposed by Wissler (1922). The archaeology of the Northeast Woodlands has been summarized in review articles by Griffin (1964, 1965, 1967) and Dragoo (1976). The following survey of Jefferson County's place in the archaeology of Wisconsin borrows freely from the above summaries.

The prehistoric cultural pattern of the Northeast Woodlands follows the same general pattern as the rest of North America. Initially, small bands of fluted point hunters specialized in hunting large herd animals, such as mammoth, mastodon, and bison. Later peoples developed more successful adaptive strategies, utilizing an increased number of local animal and vegetal resources. This increased efficiency also generated increased population densities. These trends culminated in large, sedentary populations dependent upon agriculture.

To a certain extent, Jefferson County follows this pattern of cultural development. The earliest archaeological finds in Jefferson County are a number of fluted points (Stoltman and Workman 1969; Salzer and Stock 1961). These
projectile points, in all probability, represent Paleo-
Indian occupation of this area during post-Valders times,
approximately 8500 B.C. (Stoltman and Workman 1969:211-212).
The fluted points from Jefferson County are only represented
by surface finds. Fluted points have also been recovered
in greater numbers from adjacent Dane County.

In the literature, the Archaic period, which follows
the fluted point tradition, is known only from surface
collections in Jefferson County. The Archaic is character-
ized by a more diverse lithic assemblage, a mobile for-
aging pattern, and an intensive use of primary resources
(Caldwell 1958). Perhaps the widest known examples of
Wisconsin Archaic complexes are those rock shelters ex-
cavated by Wittry (1959). An Archaic campsite has also been
recovered in Dane County, near Lake Kegonsa (Nero 1955).

In Wisconsin, the transition between Archaic and
Woodland cultures is represented by the Red Ochre and Old
Copper complexes (Ritzenhailer and Quimby 1962; Wittry and
Ritzenhailer 1956). Previously, such traits as pottery,
increased use of local plant species, and mortuary cer-
emonialism have served as cultural markers differentiating
Woodland from Archaic complexes. Increased explorations
have revealed that all these traits have their roots in
these transitional complexes, or in Late Archaic times.
Consequently, the contrast between Late Archaic and Early
Woodland has become less distinct.

Red Ochre and Old Copper cultures are inadequately known at present, as most of the information regarding these complexes has come from burial sites. As a result, data concerning their settlement patterning and economy remain to be recovered. Neither transitional complex is known in Jefferson County.

Woodland cultures are usually divided into Early, Middle, and Late Woodland periods, with representative specimens occurring throughout Wisconsin. Continuing research into Woodland complexes has blurred these distinctions, generating a continuum, rather than any sort of gradient process. Woodland cultures are characterized by the increased use of both local and imported cultigens (Yarnell 1964); a wide variety of ceramic products, typified by cord-marking and grit-tempering; and an even wider variety of mortuary practices, epitomized by the elaborate Hopewellian burials.

Within Jefferson County, Woodland complexes are known from both surface and excavated contexts. Middle and Late Woodland ceramics have been recovered from the Carcajou Point site (Hall 1962). Late Woodland pottery has also been recovered at the Aztalan site (Barrett 1933; Baerreis and Freeman 1958). At Carcajou Point, Madison cord-impressed ceramics were recovered, representing terminal Middle
Woodland or Early Late Woodland contact. In addition, a 
Late Woodland unnamed ceramic type was also recovered at 
Carcajou Point. Collared sherds, representing Late Woodland 
contact, are among the ceramic types recovered at Aztalan.

Evidence for the occupation of Jefferson County by 
Effigy Mound cultures has also been suggested. The Effigy 
Mound tradition has been suggested, by some, to be a gradual 
decline from Hopewellian complexes (Griffin 1960). Recent work 
by Hurley (1975) suggests that the Effigy Mound tradition was 
an indigenous development within Wisconsin, originating 
around 300 A.D. and lasting into the 1600s. Hurley further 
suggests that the presence/absence of effigy mounds should 
not be used as the single determining trait for the Effigy 
Mound complex. It is necessary to consider the total range 
of artifactual remains, including non-architectural items.

The Effigy Mound tradition in Jefferson County is 
again represented at the Carcajou Point and Aztalan sites. 
This tradition is especially apparent at the Aztalan site, 
where conical and effigy mounds border the eastern and 
western edges of the site (Barrett 1933: 227-255). It is 
unknown whether these mounds represent contact between 
different cultural groups, or merely represent utilization 
of a key area at different times.

The last major cultural development in the Northeast 
Woodlands is the Mississippian tradition. Mississippian
cultures are characterized by increased ceramic complexity, typified by shell-tempering and diverse decorative styles, by large village sites, supported by improved horticultural methods and an increased number of domesticized plants, and by specialized ceremonial constructions. The absence of temple mounds and less diverse art forms usually serves to distinguish Upper from Middle Mississippian cultures. Both Upper and Middle Mississippian complexes are represented within Jefferson County.

Carcajou Point is a large Upper Mississippian village site located on the shores of Lake Koshkonong (Hall 1962). Typically, shell-tempered sherds dominate the ceramic inventory. Carcajou Point is a large agricultural community, perhaps encompassing three-eighths of a square mile in area. As noted above, Carcajou Point also represents contact with Woodland, Effigy Mound, and, in all probability, Middle Mississippian complexes.

The Middle Mississippian site of Aztalan is one of the better known archaeological sites in Wisconsin. Its Mississippian characteristics have been summarized above, and will be discussed in greater detail below. In addition, there is evidence for Late Woodland interaction at Aztalan. Both grit-tempered, collared pottery and stemmed projectile points have been recovered at Aztalan.

The prehistoric occupation of Jefferson County has
been extensive. There is evidence that Jefferson County has been occupied, intermittently, for over 10,000 years. The intensity of this occupation is inadequately known. Pre-Mississippian occupations within Jefferson County remain to be examined with the thoroughness that later complexes have been subjected to.
CURRENT STATUS OF AZTALEN RESEARCH

In the years following Barrett's excavations, additional archaeological explorations have been made at Aztalan. The Wisconsin Archeological Survey undertook a series of excavations intermittently from 1949 to 1952. The results of these investigations have been published as an issue of the Wisconsin Archeologist (Baerreis 1958). The Wisconsin Historical Society also excavated at Aztalan in 1964, 1967, and 1968. The results of these inquiries have gone largely unpublished.

Two of the four seasons sponsored by the Wisconsin Archeological Survey were devoted to restoration and reconstruction of the stockade system and the large pyramidal mound in the southwestern corner of the site (Maher 1958). The remaining seasons concentrated on additional excavation. Recovered lithics, ceramics, and house outlines indicated a mosaic pattern of occupation at Aztalan.

Wittry and Baerreis (1958) have examined the variety of styles of houses at Aztalan. The outlines of one circular and two types of rectangular houses were recovered. Comparison with other Middle Mississippian housing styles, such as those at the Fouts and Kincaid sites, indicated that the outlines from Aztalan could be placed within the
range of variation for known Middle Mississippian housing patterns. However, as the sample of known Middle Mississippian housing styles was not then large, Wittry and Baerreis also suggested that the variation at Aztalan might also reflect the mixture of Woodland and Mississippian elements at the site.

The lithic assemblage recovered during these excavations has been described by Maher and Baerreis (1958). The Aztalan lithic complex is comprised of both flaked and polished pieces. The quantity and quality of the polished artifacts indicates the technological superiority of the Middle Mississippians over local Woodland groups, as well as the role agriculture played in Aztalan economy.

Over 90% (52 of 58) of the projectile points examined by Maher and Baerreis were notched or unnotched triangular points common to the Mississippian complex. The remaining points were types that are usually associated with Woodland complexes. This mixture of categories was similar to the lithic pattern established by Barrett's earlier excavations.

The mixture of lithic industries at Aztalan can be explained in a number of ways. The association of Woodland items with Middle Mississippian artifacts suggests that the Woodland items were trade goods, or, at least, items used by the Middle Mississippians, however acquired. Also,
Despite the dominance of Middle Mississippian characteristics at Aztalan, the possibility of an earlier, Woodland occupation exists.

Non-Mississippian elements are even more apparent in the ceramic assemblage. Baerreis and Freeman (1958) have discussed the significance of Late Woodland pottery at Aztalan. Barrett (1933:303-322) originally differentiated the Aztalan Woodland ceramics into two types. One was a circular-mouthed, grit-tempered vessel that Barrett associated with the Lake Michigan (transitional to Late Woodland) complex. The other type, an angular-mouthed form, stylistically distinct from the Lake Michigan form, was associated with local Woodland groups.

Baerreis and Freeman sought to examine these distinctions by comparing a series of design elements between (1) the two Aztalan types and (2) the Aztalan types, as a group, and another Lake Michigan type from Point Sauble, Wisconsin. In general, there was greater variance between the Point Sauble type and the wares from Aztalan than between the Aztalan types themselves. Baerreis and Freeman suggested that the Aztalan wares represent two variants of a single Woodland type, rather than two distinct types.

Baerreis and Freeman’s study, however, did not deal with the paste composition of the Aztalan ceramics. This aspect of the Aztalan ceramic assemblage has been inves-
tigated by Porter (1966). This preliminary thin-section analysis revealed the presence of grog-tempering in both Woodland and Middle Mississippian assemblages. Traditionally, grit and shell-tempering have been used to distinguish between Woodland and Mississippian ceramics respectively. However, the presence of grog-tempering in both assemblages suggests that this dichotomy is neither definitive nor totally valid.

While Porter's work is admittedly based on a small number of sherds, 10, its results do provide additional evidence of the close relationship between Aztalan and Cahokia. The combination of grit-shell-grog-tempering is common to the Cahokia region. Both Late Woodland and Mississippian ceramics at Cahokia are characterized by the use of grog as a tempering medium. Perhaps the mixed ceramic pattern at Aztalan is a reflection of the migration of a group who are accustomed to the use of a variety of tempering agents.

The relationship between Late Woodland and Middle Mississippian ceramics has special significance for Aztalan research. The general pattern at Aztalan indicates some sort of relationship between the Middle Mississippian migrants and local Woodland populations. If it can be shown that Woodland pottery is common throughout the site, one assumption that can be drawn is that there was a merger
of the two groups prior to settling at Aztalan. On the other hand, if Woodland ceramics can be shown to be localized in parts of the Aztalan site, this would suggest that the Middle Mississippians absorbed a Woodland community already occupying the area, or that the clusters of Woodland elements represent some sort of specialized activity area, such as a storage area for trade goods.

At present, the length of occupation at Aztalan is uncertain. Ritzenthaler has provided a number of radiocarbon samples, whose laboratory numbers are M-1037, M-1214, and M-642. These samples have produced the following dates:

- M-1037, 610-910 A.D., from a pit in a house site area in the northeast corner of the site (1961:139);
- M-1214, 1283-1483 A.D., also from a pit in the house area (1963:180); and
- M-642, 1440-1840 A.D., from a charnel house atop the northwest pyramidal mound (1961:139).

The refuse from the pit is comprised of both Late Woodland and Middle Mississippian pottery and debris. The wide variation of the dates themselves and the mixed contents makes the significance of these dates unclear. The upper range of M-642 would appear to be too late, making the importance of this date also unclear. Ritzenthaler favors a short-term occupation at Aztalan, and as such, disregards M-1037 and M-642 as being either too early or too late. He has
suggested that the median dates from M-1214 are more acceptable.

Hurley, on the other hand, favors a longer occupation of the Aztalan site. Hurley (1964) suggests that, on the basis of radiocarbon dates from Cahokia (Fowler 1963), all of the Aztalan dates fit within the range of Mississippian complexes at Cahokia. He further suggests that the upper range of 910 A.D. (M-1037) and the lower range of 1440 A.D. (M-642) be used to represent the length of the Aztalan occupation.

If Aztalan's occupation was lengthy, one would expect to see some degree of stylistic change in the ceramics. Any such change appears to have been minimal. While subject to change with future research, recovered ceramics support a relatively brief occupation at Aztalan. It is apparent that the above dates are inadequate to firmly establish Aztalan's occupation. What is needed is a series of samples dating both house structures and the stockade lines.

One of the few publications resulting from the excavations sponsored by the Wisconsin Historical Society, Bleed (1970), has also dealt with the problem of non-Mississippian pottery at Aztalan. Bleed's summary of the shell-tempered ceramics recovered during the three seasons of excavations notes that the grit-tempered, Late Woodland pottery is the major ceramic variety (1970:2). Bleed's
findings are difficult to reconcile with Barrett's assertions that shell-tempered, Middle Mississippian pottery "is the dominant ware at Aztalan (1933:22)."

The relationship between Aztalan and other Middle Mississippian complexes largely rests upon ceramic affinities. Bleed's findings appear to reduce this affinity. To suggest that Woodland ceramics were the dominant ware at Aztalan questions its Mississippian associations. Any shell-tempered ceramics may then only represent trade articles at a dominantly Late Woodland occupation.

There is a possible explanation. Bleed's sample, as noted above, was derived from excavations other than Barrett's earlier ones. It is possible that the ceramics that Bleed examined reflect intrasite variation at Aztalan. Bleed's findings probably refer to an area of more intensive Woodland utilization rather than to the Aztalan site as a whole.

Our initial interest in Aztalan was focused toward the Late Woodland ceramic assemblage and, in particular, the transitional forms which suggest Late Woodland-Middle Mississippian interaction (Barrett 1933:336-342). It soon became apparent that it would be impossible to establish adequate provenience for these forms, based on the available literature. Without adequate stratigraphic control, any discussion of intrasite variation would have been futile.
Preliminary library work also revealed that previous work at Aztalan has been centered upon excavations and reconstructions at the site itself. This site-oriented approach often deemphasizes the importance of understanding a site's relationship to other sites in the area. In addition to inadequate stratigraphic control over the transitional ceramic varieties, comparative information from other prehistoric occupations near Aztalan was also incomplete.

At Aztalan, there are obvious manifestations of non-Mississippian complexes. Yet, with the exception of Carcajou Point, other prehistoric occupations in Jefferson County are largely unknown. The above archaeological summary of Jefferson County indicates a wide range of prehistoric activity in the area. It is certainly not inconceivable that there were other prehistoric communities near Aztalan, or within the county.

In the attempt to approach Aztalan from its surroundings, rather from the site outwards, the 1975 Loyola Fieldschool undertook a limited site survey along the Crawfish River. The fieldschool also undertook a series of test excavations in response to the survey's findings and to sample the soil variation in the area. This thesis will report the results of the site survey and the test excavations.
CHAPTER II

CRAWFISH RIVER SITE SURVEY: LIMITATIONS AND RESULTS

The site survey undertaken along the Crawfish River resulted in the recovery of over 100 sites. The survey was largely conducted north of Aztalan State Park, in the Lake Mills (La), Jefferson (Je), and Waterloo (Wa) quadrangles. Map 1 is a schematic representation of the spatial distribution of the recovered sites; Appendix A provides U.T.M. coordinates for specific sites.

The major geomorphic features of the area are a till plain studded with a number of drumlins, running northeast and southwest, interspersed with wetland strips (Martin 1965). Most of the drumlins are presently littered with till debris, some of which may have been available to the prehistoric residents for use as raw materials for lithic artifacts. The wetland strips largely represent the Crawfish River floodplain. Floodplain deposits in the survey area are generally very dark loams and silt loams, while the upland soils are much lighter silts and silt loams (Milfred and Hole 1970).

The mixed geomorphic pattern continues in the mosaic plant community. Curtis (1959) classifies the area within the southern mesic forest. There are largely two types of
plant communities: (1) a southern hardwood forest on slopes and protected areas, consisting of oaks (Quercus sp.), and mixed hardwoods, sugar maples (Acer saccharum) and bass wood (Tilia americana); and (2) a floodplain forest of elm (Ulmus americana), ash (Fraxinus sp.), and silver maples (Acer saccharinum). Zicker (in Milfred and Hole 1970) notes that precontact aboriginal occupations occurred on the edges of the upland oak forests.

The site survey team usually consisted of five members, of which only two had any prior survey experience. The survey was conducted for approximately two weeks, with nearly 500 man-hours expended. An attempt was made to collect all visible cultural materials. This attempt met with varying degrees of success, depending on the area surveyed. The upland area was the easiest area to survey, due to the excellent visibility provided by the light till soils and the low height of crops. The more difficult areas to survey were the crests of drumlins, where glacial till masked some cultural materials, and the dark, floodplain regions, where the dark soils obscured some materials, especially ceramics, and depositional factors reduced the likelihood of recovering artifacts in these areas.

The major limitations realized in this survey are its narrow focus, and its emphasis on the west banks of the Crawfish. These can easily be overcome by additional work
in the area by larger crews, for longer periods of time. We received excellent cooperation from the land owners in the survey area and the emphasis on the west banks of the Crawfish River represents one of choice, not the uncoperative nature of eastern land owners.

Despite these limitations, it is believed that the survey was extremely productive, both in the range and quality of the data retrieved. Since the majority of sites are represented by either single flakes or small lithic scatters, there will be no attempt to describe each site here. Appendix B provides a brief description for specific sites.

One of the more apparent features of the site survey was the variation of raw materials used to manufacture lithic artifacts. Three major rock types were used: chert, Waterloo quartzite, and Hiixon silicified sandstone. The most heavily used material was a local grey chert; this and other cherts can be found regionally, weathering out from glacial deposits. No "exotic" or imported cherts were recovered.

The next most numerous lithic resource was Waterloo quartzite. This quartzite is usually a bluish grey in color, also occurring as a reddish or violet variant. Waterloo quartzite occurs in a number of areas in adjacent Dane County (Brown and Brown 1928). Another, smaller outcrop
was discovered during the site survey near the Wa-6 site. This material is somewhat difficult to quarry from the deposit, even with a geological hammer. Prehistoric stone-workers may have had difficulty in obtaining this material directly from the outcrops, and may have had to rely upon natural spalls. Artifacts made from this material are, with one exception, scrapers or chopper/chopping tools. The most impressive examples of this material were recovered from the Je-69 site, where four chopper/chopping tools were found (Figs. 28 and 29).

There was also a limited use of Mixton silicified sandstone. This unique lithic material has been described by Porter (1961), who notes that this material is microscopically distinct from quartzite, but is often mis-identified, or that other materials are mis-labeled as Mixton. True Mixton silicified sandstone occurs only from a quarry site near the town of Mixton, Jackson County, Wisconsin. Only three flaked artifacts, all apparently scrapers that had been made from this material, were recovered during the site survey (Fig. 26a, b, c).

Both Waterloo quartzite and Mixton silicified sandstone are ideally suited to scraper use; both materials are difficult to control during flaking, producing steep step flakes. In the case of Mixton silicified sandstone, however, prehistoric stone-workers somehow overcome this
characteristic, for finely flaked artifacts made from this material have been recovered from the Aztalan site (Aztalan Museum and Milwaukee Public Museum collections). Evidence for the presence of this material has also been recovered from the Cahokia region, hundreds of miles from its quarry source (Porter 1961).

Behm and Faulkner (1974) have tried to duplicate the success prehistoric stoneworkers had in flaking Hixton silicified sandstone by heat-treating it. They note that, while its appearance often changes, they and other workers could detect no significant change in its working properties. It is of interest that even researchers involved in the study of this material still refer to it incorrectly as a "quartzite." It is possible that Behm and Faulkner have lumped a number of lithic materials into the Hixton category, reducing the efficacy of their work. The use of Hixton silicified sandstone and Waterloo quartzite will continue to be examined in subsequent research in the Aztalan area.

The survey recovered 31 projectile points and point fragments upon which some diagnostic measurements could be made. Of these 31, only 19 could be assigned to rough cultural groupings (Table 1). The remaining artifacts are largely unidentified stemmed points, which are probably of Woodland origin. In any case, the identified points indicate
Paleo-indian: 1 Plainview or Browns Valley point, Je-7; 1 unidentified, fluted point, Je-27.

Archaic/Early Woodland: 2 Raddatz side-notched points, Je-13 and Je-46; 1 Waubesa contracting stem point, Je-31; and 3 Madison side-notched points, Je-47, Je-70, and Le-12.

Middle Woodland: 1 Durst stemmed point, Je-77.

Late Woodland: 1 Fox Valley Truncated Barb point, Je-28; 3 unidentified corner-notched points, Je-18, Je-69, and Wa-15.


Unclassified points: 4 unidentified side-notched points, Je-2, Je-23, Je-63, and Je-85; 2 unidentified contracting stem points, Je-28 and Je-40; 7 unidentified stemmed points, Je-20, Je-23, Je-28(2), Je-34, Je-48, and Je-69; and 1 unidentified corner-notched point, Je-5.

Table 1. Projectile point cultural associations.
that the area has seen a variety of prehistoric activity, from Paleo-indian through Mississippian time periods. Most of the points recovered were either from Archaic/Early Woodland or Mississippian periods.

In addition to projectile points, the site survey also recovered a number of flaked artifacts. Scrapers made from a variety of materials were found throughout the survey area. Large, bifacially retouched knife fragments were retrieved from the Je-7, Je-11, Je-16, and Je-39 sites.

As mentioned above, the majority of the sites recovered were either isolated flakes or thin lithic scatters. However, a number of significant isolated finds and concentrated areas were also recovered. Significant isolated sites were the single, fluted Paleo-indian point from Je-27 and the isolated grooved ax from Je-41. Fluted points have been previously reported from within Jefferson County and elsewhere in Wisconsin. Stoltman and Workman (1969) have made a preliminary analysis of fluted points from Wisconsin. They list six fluted points from Jefferson County: three Enterline-Dullbrook points, one Clovis point, and two unidentified points. Applying their typologies, the Je-27 point cannot be placed within any specific category, but is assigned to a catchall, unidentified grouping.

The Je-41 site consisted solely of a grooved ax, ground from fine-grained igneous rock. The ax is full-
grooved, with a convex blade, and narrow waist groove. The poll is partially broken, but also appears to be convex. One of the more interesting features of the ax is its small size and weight. Smith (1972) notes that the majority of axes weigh between three and ten pounds; the Je-41 ax weighs less than one pound (320 grams). It would seem that this ax was intended for some purpose other than those usually associated with larger axes. The ax's size suggests that it may have been used as a hoe, although Smith notes that full-grooved axes are usually associated with Archaic materials.

The most concentrated areas in the site survey were the clustering of the Je-4, Je-5, Je-6, Je-7, Je-7N, Je-7W, and Je-69 sites and the Je-13, Je-14, Je-15, Je-16, Je-17, and Je-76 sites (Figs. 1 and 2 are sketch maps of these areas). Both areas yielded a large number of flakes, debris, and flaked artifacts. Originally, it was tempting to view these areas as single units, but the inventory of the individual sites indicated a wide temporal range. For example, the Je-13 site yielded both a Raddatz side-notched point and a triangular Mississippian point. This must be viewed as the repeated utilization of a specific area over some degree of time depth. In both concentrated areas, however, no evidence for a long term occupation was recovered.
Fig. 1. Je 4-7, Je-69 site areas (not to scale).
Fig. 2. Je 13-17, Je-76 site areas (not to scale)
The quantity of ceramics recovered during the site survey was surprisingly small. Ceramics were recovered from only seven sites (Table 2). With the exception of the Je-76 and Je-84 sites, pottery was a minor element in any site's inventory. The ceramics indicate both a Woodland and Mississippian utilization of the area. These identifications are admittedly based on very fragmented sherds and the general grit/shell dichotomy; it is important to remember that this dichotomy is of limited utility and generates only general descriptions. The grit-tempered rim from Je-17 (Fig. 17b) is similar to the Late Woodland rim illustrated in Barrett (1933:314, Fig. 97). A Ramey Incised rim sherd was recovered from the surface of the Je-76 site (Fig. 17d).

Finally, two of the survey's more significant recoveries were the locating of the Milford Fish Dam (Appendix C) and the discovery of the Kasten Mound Group[47 Je 250]. Both these features are described elsewhere in this report, but their locations are of more immediate interest. It would appear that the Milford Fish Dam acted as a hub for an area of concentrated prehistoric activity. The Kasten Mound Group lies approximately 400 meters NW of the fish dam, on the north banks of the Crawfish River, while the concentrated area of sites Je-13 through Je-17, plus the Je-76 site, lies adjacent to the fish dam on the southern banks of the Crawfish. This concentrated area formed the focus of the
Je-7: A single, worn grit-tempered, unidentified sherd, Wt. 1.

Je-16: 14 grit-tempered, cord-marked sherds, Wt. 31; 4 grit-tempered, smooth surface sherds, Wt. 8; 2 shell-tempered, smooth surface sherds, Wt. 2; 1 shell-tempered, scalloped rim, Wt. 2.

Je-17: 2 grit-tempered, smooth surface sherds, Wt. 4; 1 grit-tempered, cord-marked, scalloped rim, Wt. 5.

Je-76: 10 grit-tempered, smooth surface sherds, Wt. 15; 7 grit-tempered, cord-marked sherds, Wt. 17; 1 grit-tempered, incised sherd, Wt. 3; 7 shell-tempered, smooth surface sherds, Wt. 35; 1 grog-tempered, notched rim, Wt. 4; 1 shell-tempered, Ramey Incised rim, Wt. 14.

Je-77: 1 grit-tempered, cord-marked sherd, Wt. < 1.

Je-83: 3 grit-tempered, cord-marked sherds, Wt. 22; 1 grit-tempered, incised sherd, Wt. < 1.

Je-84: 19 grit-tempered, cord-marked sherds, Wt. 82; 5 grit-tempered, smooth surface sherds, Wt. 16; 5 grit-tempered, unidentified sherds, Wt. 7; 1 grit-tempered, cord-marked rim, Wt. 23; 1 grit-tempered, smooth surface rim, Wt. 6.

Table 2. Sherd counts and weights (in grams) from site survey sites.
second stage of the investigations carried out by the Loyola University Field School.

One of the survey's major goals was to generate information about Aztalan's interaction with local, indigenous groups. However, little actual evidence of Mississippian influence was recovered, even though the survey area was only a few miles from Aztalan. The apparent lack of Mississippian influence generates a number of questions: Was the Middle Mississippian site of Aztalan an important force in the area, among local populations? And, if it was, why have we not recovered more of its influence?

Obviously, the first question can hardly be answered by just one season's work. Part of the answer to the second question may lie in the fact that it may be difficult to judge Aztalan's importance in Wisconsin terms. If Aztalan acted as a clearinghouse for northern trade goods, sending these articles to the American Bottom region, evidence for Aztalan's success is to be retrieved in the American Bottom. If Aztalan did function in this manner, it would probably be exporting local materials faster than it would be importing southern items. Also, as noted in the first chapter, the length of the Mississippian occupation at Aztalan is unclear. If Aztalan represents a short term occupation, the amount of influence it could have had upon local populations would have been limited.
In general, the survey reveals that the area to the north of Aztalan supported a number of non-Mississippian populations, at varying time periods; this is borne out by both lithic and ceramic artifacts. No habitations were recovered, but, of course, their presence is by no means precluded. Only a single test excavation, Je-76, was undertaken in either of the concentrated areas discussed above. This test revealed both Woodland and Mississippian complexes. The Je-76 test site was located on the banks of the Crawfish River; no excavations were executed on higher ground, above the Crawfish. Future work in the area, perhaps emphasizing these upland regions, may reveal any habitation sites in the immediate region.
CHAPTER III

TEST EXCAVATIONS

In addition to the site survey, the 1975 Loyola University Fieldschool also undertook a series of six test excavations. Most of these tests were in response to the survey's findings, particularly in those areas where ceramics had been recovered. As excavation procedures were largely the same for all the test trenches, they will be briefly summarized here. All the excavation units were either 1x1, or 2x1 meters in size. The plow or sod zones were removed as a unit and screened through $\frac{1}{4}$" mesh, with the exception of the Je-16 test, which was screened through $\frac{3}{8}$" mesh. Subsequently, ten centimeter levels were removed and screened through $\frac{1}{4}$" mesh. Troweling was largely limited to the bases of levels and in profiling walls. Soil profiles and any features were mapped.
THE Je-16 TEST EXCAVATION

The first test trench executed was located on the western edge of the Je-16 site, approximately 200 meters north of the Crawfish River. As noted above, this area was part of a large, concentrated lithic scatter, with an occasional sherd. This location was chosen because it represented an area somewhat removed from the river and because it was accessible by farm roads and our activities would not interfere with those of the Kasten family.

An arbitrary datum was established as M100 W50, with an elevation of 240 meters. Figure 3 represents the soil profile from this trench. The plow zone is characterized as a dark silty clay, extending approximately 25cm below the surface. Unit 1 is a dark yellowish brown silty clay loam, extending 25 to 40cm below the surface. Between the plow zone and unit 1 there is a sporadic 5 to 10cm layer of dark silty clay, lightly mottled with brown clay. The base of the excavation is a dark yellowish brown clay loam.

The northernmost square was excavated to a greater depth than the rest of the trench in the attempt to reach some of the local clay deposits available to prehistoric potters. In this square, the zone of the dark yellowish brown clay loam extended from 40 to 70cm below the surface.
Below this clay loam zone, two layers of sterile clays were reached. Gravels of varying sizes were also recovered throughout this test trench.

Table 3 lists the amounts and weights (in grams) of materials recovered during this excavation; Appendix D provides a brief description of some of these materials. Chert debris was recovered throughout the excavations, with only an occasional flake being found below 50 cm below the surface. Most of the chert items, however, recovered from the third level and below were largely water-worn and rolled, and probably do not represent any cultural activity.

Modified pieces were recovered only from the plow zone and the first 10 cm level below it. Two scrapers and a single sherd were recovered while profiling and have no significant provenience. None of the flaked artifacts are diagnostic, and the single sherd is grit-tempered and cord-marked. A very tenuous Woodland association is made for this test. It is possible that this area represents the edge of a larger, more concentrated occupation located farther upslope.
Table 3. Material totals and weights (in grams) from Je-16 by excavation units.

<table>
<thead>
<tr>
<th>Material</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>NVC*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plow Zone</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chert</td>
<td>18(217)</td>
<td>13(45)</td>
<td>42(226)</td>
<td>5(46)</td>
</tr>
<tr>
<td>Pottery</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Quartzite</td>
<td>10(11)</td>
<td>5(48)</td>
<td>2(26)</td>
<td>-</td>
</tr>
<tr>
<td>Gravels</td>
<td>(2767)</td>
<td>(451)</td>
<td>(1047)</td>
<td>(507)</td>
</tr>
<tr>
<td>Rough rock</td>
<td>-</td>
<td>5(287)</td>
<td>29(755)</td>
<td>-</td>
</tr>
</tbody>
</table>

* No Vertical Control
THE Je-17 TEST EXCAVATION

The Je-17 test trench was located in an area some 300 meters northeast of the Je-16 test; Map 2 illustrates the area surrounding this site. This test trench was given an arbitrary datum of N150 E150, with an elevation of 237 meters. All subsequent test excavations were oriented in respect to this datum. This area was chosen for testing because it had yielded a number of sherds during the site survey, and it was hoped that testing would produce additional ceramics.

Figure 4 is a representation of the soil profile from this excavation. The surface slopes to the north, toward the Crawfish River. The plow zone is characterized as a lightly colored sandy clay loam, extending 25 to 30 cm below the surface. A layer of darker sandy loam extends from 30 to 70 cm below the surface. At this depth, there is a 10 cm layer of fine yellow sand with calcareous gravels, below which is a bed of larger calcareous gravels, inter-bedded with lenses of fine sand and mussel shell.

A number of areas of soil discoloration were encountered and mapped; it is unclear what these areas represent. Figures 5 and 6 represent two such areas. The area illustrated in Fig. 5 occurred near the base of the first
Figure 4. East Profile of Je 1787-248

P2 10YR5/1 Sandy Loam
1A 10YR3/1 Sandy Loam to Sandy Clay Loam
1D 10YR3/2 Sandy Loam
10YR3/1 Sandy Loam with Calcareous Pebbles (1cm, 1D Diameter)
10YR5/4 Sand with Occasional Small Calcareous Pebbles (<1cm.)
3 Belty Calcareous Gravels (up to 5cm.), with pockets of 10YR 3/4 Sand, 10YR 5/3 Clay, and Mussel Shell
1. 10YR 3/3 Sandy silt loam, mottled with dark and light brown areas

2. 10YR 3/2 Sandy silt loam, mottled with a few dark brown areas

3. 10YR 4/3 Sandy silt loam, mottled with a few dark brown areas

RR= rodent run

Fig. 5. Soil discoloration from Je-17.
1. 10YR 4/4 Sandy silt loam, mottled with occasional dark brown areas

2. 10YR 3/2 Sandy silt loam

3. 10YR 3/3 Sandy silt loam, mottled with a few dark brown areas

3A. Slightly darker than unit 3

Fig. 6. Soil discoloration from Je-17.
10cm level below the plow zone; the area represented by Fig. 6 occurred in the second level. No significant cultural materials were associated with either area. Possible interpretations for these areas include a wall trench (Fig. 5) and a hearth (Fig. 6). While there were some charcoal flecks associated with the area shown in Fig. 6, their presence is probably due to rodent disturbance. In all probability, these areas are not culturally meaningful, but reflect rodent activity and such historic activities as the clearing and burning of stumps in order to produce more farmable acreage.

Table 4 lists the materials recovered from this test trench. Throughout the test, gravels predominate over all other materials. Only a few chert items were recovered, and all those from the third level below the plow zone, and below, are water-worn pebbles. The single flaked artifact recovered was a Waterloo quartzite scraper (Fig. 32i) described in Appendix D.

No cultural associations can be made for this test.
<table>
<thead>
<tr>
<th></th>
<th>plow zone</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
</tr>
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<tbody>
<tr>
<td>Chert</td>
<td>6(19)</td>
<td>5(4)</td>
<td>2(4)</td>
<td>20(46)</td>
</tr>
<tr>
<td>Pottery</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Quartzite/</td>
<td>-</td>
<td>1(1)</td>
<td>5(35)</td>
<td>-</td>
</tr>
<tr>
<td>Mixton</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bone</td>
<td>-</td>
<td>(4)</td>
<td>-</td>
<td>(1)</td>
</tr>
<tr>
<td>Shell</td>
<td>(49)</td>
<td>-</td>
<td>(1)</td>
<td>(810)</td>
</tr>
<tr>
<td>Gravels</td>
<td>(1500+)</td>
<td>(1300+)</td>
<td>(1500+)</td>
<td>(3000+)</td>
</tr>
<tr>
<td>Rough rock</td>
<td>1(88)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
THE Je-76 TEST EXCAVATION

The Je-76 test area was located along the Crawfish River, approximately 130 meters east of the Je-17 site. The contour map of the area (Map 2) indicates that the region generally slopes toward the Crawfish, and that the excavation area itself is located on a small lobe on the banks of the river. Map 2 also indicates a small depression east of the test area; it is suggested that this depression may be the remnants of an extinct natural spring. The combination of a natural spring and the adjacent Milford Fish Dam would have made this area attractive to the prehistoric residents of the region.

The Je-76 area was chosen for excavation because it had been the most productive area, in terms of ceramics, recovered during the site survey. The recovery of a Ramey Incised rim sherd (Fig. 17d) and other ceramics made this an especially promising area. Consequently, a series of test trenches was laid out and excavated (Fig. 7). Figs. 8 and 9 represent soil profiles for two of the trenches. The N198-199 E21-27 profile was very similar to the N196-197 E21-28 profile (Fig. 9) and was not mapped. The soil throughout this test excavation can be roughly divided into two zones: a dark clay loam, which becomes progressively lighter.
Fig. 7. Sketch map of the Ja-76 excavations.
PZ 10 YD 2.5/1 LOAM TO CLAY LOAM
1 10 YD 3/1 CLAY LOAM
2 10 YD 3/2 SILTY CLAY

FIGURE 9. NORTH PROFILE dE70 (67.2E 240)

[Diagram with dimensions and scale]
(PZ and unit 1); and a dark silty clay zone, which can be subdivided further by texture (units 2 and 3).

Table 5 lists the materials recovered from the Jc-76 test by excavation unit. A large amount of chert and ceramic materials was recovered, especially when compared to the rest of the test excavations. The majority of these materials were recovered from the plow zone and from the first 10cm level below it. Significantly smaller amounts were recovered from the second and third levels. Appendix D provides both descriptions and provenience for these materials. All the flaked artifacts were recovered from the plow zone. Three broken triangular points suggest a Mississippian influence in the area, while a broken, contracting stem point suggests a Woodland utilization.

Table 6 distinguishes recovered ceramics on the basis of temper categories and excavation units. Shell-tempered Mississippian pottery is, numerically and by weight, in the majority, but grit-tempered, cord-marked Woodland ceramics occur throughout the excavations in appreciable quantities. The ceramics suggest both a Woodland and Mississippian utilization of the region.

The potential pitfalls of accepting a Woodland/Mississippian separation solely on the basis of temper categories are recognized. These pitfalls are even more apparent in this situation, where the recovered ceramics
Table 5. Material totals and weights (in grams) from Je-76 by excavation units.

<table>
<thead>
<tr>
<th>Material</th>
<th>Plow Zone</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>NVC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shell</td>
<td>138(177)</td>
<td>14(125)</td>
<td>8(160)</td>
<td>-</td>
<td>-</td>
<td>6(14)</td>
</tr>
<tr>
<td>Pottery</td>
<td>351(428)</td>
<td>28(30)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>11(9)</td>
</tr>
<tr>
<td>Bone</td>
<td>(593)</td>
<td>(41)</td>
<td>(128)</td>
<td>-</td>
<td>-</td>
<td>(31)</td>
</tr>
<tr>
<td>Shell</td>
<td>(516)</td>
<td>(1093)</td>
<td>(244)</td>
<td>(7)</td>
<td>(3)</td>
<td>(27)</td>
</tr>
<tr>
<td>Gravel</td>
<td>5963</td>
<td>478</td>
<td>257</td>
<td>-</td>
<td>-</td>
<td>(159)</td>
</tr>
<tr>
<td>Rough rock</td>
<td>26(1775)</td>
<td>110(6618)</td>
<td>81(5712)</td>
<td>3(110)</td>
<td>2(25)</td>
<td>20(863)</td>
</tr>
</tbody>
</table>
Table 6. Je-76 ceramics by temper categories and excavation units.

<table>
<thead>
<tr>
<th>Plow zone</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>NVC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grit-temper</td>
<td>26(151)</td>
<td>21(14)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Shell-temper</td>
<td>188(261)</td>
<td>6(16)</td>
<td>-</td>
<td>-</td>
<td>11(9)</td>
</tr>
<tr>
<td>Unidentified</td>
<td>67(30)</td>
<td>1(1)</td>
<td>1(1)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
were so fragmentary that identifications were often somewhat tenuous, and the presence of grog-tempering would be difficult to observe in such small fragments. The presence of grit and shell-tempering may indicate sequential or simultaneous occupation of the area by two different cultural groups, or it may represent the adoption of a new tempering agent by one group or the other. This latter interpretation may account for the mixed ceramic assemblage at Aztalan.

Sub-plow zone materials largely consisted of lenses of bone and shell. Figure 10 is a diagram of one such area, which occurred at the base of the plow zone. A number of mussel shells, some with their valves open, others with their valves closed, were found in association with an amount of burnt bone and two shell-tempered sherds. No soil discoloration was noted in the area. It would appear unlikely that this concentration, and other similar ones recovered, represent hearths, but rather reflect a small midden area.

A number of other lenses of shell and bone were recovered, mostly at the base of soil unit 1, and throughout units 2 and 3. No soil discoloration was noted in any of these lenses. It would seem unlikely that these areas represent refuse pits, although shallow, basin-shaped pits, filled with the same soil, would be difficult to discern. This site probably represents a small midden area which has
Fig. 10. Shell and bone concentration from Je-76.
been covered over by a series of water-laid deposits. This area of the Crawfish River floods annually, a natural condition worsened by the construction of a modern dam a half-mile downstream at Milford. Periodic flooding and deposition over hundreds of years could easily account for the 25cm of deposits overlying the midden debris.
THE Je-81 TEST EXCAVATION

Map 3 illustrates the area surrounding the Je-81 test excavation. This area was chosen for testing because it was adjacent to what appears to be a natural ford for the Crawfish River, and because it was near both the Milford Fish Dam and the Kasten Mound Group. Additionally, this location was currently being used as pasture and was believed never to have been plowed. We were interested in excavating in an undisturbed area, as all previous tests had been undertaken in disturbed contexts.

Figure 11 is the soil profile from the Je-81 test trench. The sod zone, which was found to be 5 to 10 cm thick, was removed as a unit. Soil unit 1 was characterized as a dark brown loam extending 10 to 55 cm below the surface. The first 10 to 15 cm of this zone are a uniform dark brown; below this, the soil becomes progressively lighter. This change suggests an old plow zone which the current residents were unaware of, or a developing A1 horizon. In any case, the first 15 to 20 cm below the plow zone represent considerable mixing of historic and prehistoric materials.

Table 7 lists the materials recovered from the Je-81 test by excavation unit; these materials are partially described in Appendix D. This table indicates that most of
Table 7. Material totals and weights (in grams) from Je-81 by excavation units.

<table>
<thead>
<tr>
<th></th>
<th>plow zone</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
<th>4th</th>
<th>5th</th>
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<tbody>
<tr>
<td>Chert</td>
<td>5(14)</td>
<td>22(44)</td>
<td>27(344)</td>
<td>120(197)</td>
<td>44(176)</td>
<td>2(2)</td>
</tr>
<tr>
<td>Pottery</td>
<td>5(3)</td>
<td>39(41)</td>
<td>5(4)</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Quartzite/Hixton</td>
<td>–</td>
<td>2(14)</td>
<td>7(124)</td>
<td>11(123)</td>
<td>7(93)</td>
<td>–</td>
</tr>
<tr>
<td>Bone</td>
<td>42(42)</td>
<td>96(96)</td>
<td>18(18)</td>
<td>110(110)</td>
<td>235(235)</td>
<td>1(1)</td>
</tr>
<tr>
<td>Shell</td>
<td>162(162)</td>
<td>196(196)</td>
<td>1(1)</td>
<td>2(2)</td>
<td>16(16)</td>
<td>1(1)</td>
</tr>
<tr>
<td>Gravels</td>
<td>89(89)</td>
<td>388(388)</td>
<td>71(71)</td>
<td>116(116)</td>
<td>39(39)</td>
<td>2(2)</td>
</tr>
<tr>
<td>Rough rock</td>
<td>5(42)</td>
<td>25(1093)</td>
<td>32(517)</td>
<td>29(1739)</td>
<td>8(882)</td>
<td>–</td>
</tr>
<tr>
<td>Charcoal</td>
<td>(1)</td>
<td>(42)</td>
<td>–</td>
<td>(269)</td>
<td>(10)</td>
<td>(1)</td>
</tr>
</tbody>
</table>
the ceramics recovered occurred in the sod zone and from the first 10cm level below it. The pottery recovered represents both Woodland and Mississippian complexes. This mixing may be accounted for by the presence of an old plow zone.

The majority of lithic materials occurred at the base of the third level below the sod zone and into the fourth. This material largely consisted of a number of small chert flakes, a number of fire-cracked rocks, and a quantity of burnt bone. A number of points were found throughout the fourth 10cm level. One of the more interesting artifacts recovered from this level was a broken-based, Snyder-like point (Fig. 34a). No ceramics were recovered from this level.

A single feature was recovered during this excavation from square N317-318 E59-60. This feature is a probable hearth area and is illustrated in Fig. 12. Unit A from Fig. 12 is an area of loosely packed loam, with burnt twigs and charcoal. A single mussel shell was also recovered from this feature. Unit B consists of white ash and burnt bone. Two points were also found in association with this feature.

The Je-81 test recovered both Woodland and Mississippian artifacts throughout the sod zone and the first 10cm level below it. At lower levels, Mississippian artifacts disappear. Although no ceramics were recovered, the flaked artifacts, especially the Snyder-like point, suggest a (Middle) Woodland utilization of the area.
A. Charcoal and burnt twigs

B. White ash, charcoal, and calcified bone

Fig. 12. Probable Hearth from Je-81, N317-318
E49-50.
THE JE-82 TEST EXCAVATION

The Je-82 test trench was located approximately 30 meters northeast of the Kasten Mound Group (Map 4). Its location appeared to be favorable for the recovery of more information than the previous tests had yielded. Unfortunately, only a small amount of lithic material was recovered from this test.

This area was also of interest because it spanned an area where it was certain no prior plowing had occurred. The soil profile for this trench, Fig. 13, suggests that the plowed/no-plowed boundary occurred in square N456-457 W138-139. Throughout the excavation, the soil composition remained relatively homogeneous. Soil units 1, 2, and 3 are all silt loams, varying in color from a light grey in unit 1, to a light brown in unit 3. Unit 4 is a zone of dark brown loam, extending from 50 to 70 cm below the surface. Below unit 4 is a bed of sterile, decomposed sandstone. In general, this soil appears to be a loess that has been weathered in place.

There were very few areas of rodent disturbance or soil discoloration encountered during this test. An area of concentrated rock was uncovered in square N455-456 W138-139, at the base of the first 10 cm level below the sod zone (Fig. 62).
14). Its circular arrangement is suggestive of a hearth; some of the rocks do appear to be fire-cracked, and a few flecks of charcoal were recovered. There was, however, no indication of any soil discoloration, or burnt soil, so its designation as a hearth is tentative.

Table 8 lists the materials recovered from the Je-82 trench by excavation units. This inventory reveals that no ceramics were recovered, and that the majority of chert items were recovered from the second and third levels below the sod zone. The majority of these are extremely small and sharp flakes which occurred at the base of the second level and into the third. Ten flaked artifacts were recovered from this excavation and are described in Appendix D. All, but one, of these occurred in the second and third levels. None of these artifacts were diagnostic, and, as such, no cultural associations have been made for this test.

The five test excavations, as a whole, reveal a mixed prehistoric utilization of the area. None of the tests give any evidence as to the exact nature of the relationship between Woodland and Mississippian complexes in the region. The excavations have, however, succeeded in part of our original goals. These tests reveal that there is evidence for Middle Mississippian influence outside of the immediate Aztalan area. This evidence, plus the presence of the Milford Fish Dam and Kasten Mound Group, suggests that this area might be considered another example of Mississippian/
a, b, d, e. Weathered gabbroic rock

f, h, i, j, l, n. Gabbroic rock

p, q, r, s, t, w.

g, m. Greenstone

c. Medium grain granite

do. Quartzite flake

u. Fired clay(?)

v. 2 chert flakes

Fig. 14. Rock concentration from Je-82.
Table 8. Material totals and weights (in grams) from Je-82 by excavation units.

<table>
<thead>
<tr>
<th>Material</th>
<th>Plow Zone</th>
<th>1st</th>
<th>2nd</th>
<th>3rd</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chert</td>
<td>34(31)</td>
<td>215(418)</td>
<td>524(672)</td>
<td>209(179)</td>
</tr>
<tr>
<td>Pottery</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Quartzite/Hixton</td>
<td>6(6)</td>
<td>22(128)</td>
<td>16(284)</td>
<td>2(109)</td>
</tr>
<tr>
<td>Bone</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Shell</td>
<td>-</td>
<td>-</td>
<td>(2)</td>
<td>-</td>
</tr>
<tr>
<td>Gravels</td>
<td>(114)</td>
<td>(1772)</td>
<td>(1971)</td>
<td>(694)</td>
</tr>
<tr>
<td>Rough rock</td>
<td>27(600)</td>
<td>129(5776+)</td>
<td>131(5053+)</td>
<td>21(1147)</td>
</tr>
<tr>
<td>Charcoal</td>
<td>(1)</td>
<td>(3)</td>
<td>(13)</td>
<td>-</td>
</tr>
</tbody>
</table>
non-Mississippian interaction outside of Aztalan.
CHAPTER IV

THE KASTEN MOUND GROUP AND
LOCAL PREHISTORIC OCCUPATIONS

THE KASTEN MOUND GROUP[47 Je 250]

One of the most interesting features revealed during the site survey was the discovery of a group of three mounds near the north banks of the Crawfish River (Maps 4 and 5). The mound group is located in the NW $\frac{1}{4}$, SW $\frac{1}{4}$, NE $\frac{1}{4}$ of Sec. 5, T. 7N, R. 14E of Jefferson County, Wisconsin, on the property of Mr. Orville Kasten.

The mound group consists of two smaller mounds and one larger, possibly pyramidal, rectangular mound. The smallest mound (Mound C) is somewhat irregular in shape, measuring roughly seven meters in diameter and 30cm high. Mound B is conical in shape, measuring ten meters in diameter and 50cm high. The largest mound (Mound A) is over two meters in height, measuring 15 meters N-S, 20 meters E-W. The mound group and surrounding area was covered with locust, somewhat reducing the group's accessibility. This locust was subsequently removed so mapping and testing of the area could be executed. Mounds A and B do show signs of pot-hunters; Mr Kasten also recalls one instance where he
drove off pot-hunters who were preparing to dynamite Mound A.

Map 5 is a 10cm interval contour map of the mound group area which reveals a number of features which were somewhat obscured prior to the removal of the locust and undergrowth. This map clearly indicates the rectangular pattern of Mound A, as well as partially confirming the visual suggestion of it being a small, truncated pyramidal mound. Of particular interest is what appears to be a ramp extending from the eastern edge of Mound A. Two depressions flank either side of the mound and probably provided the fill for the ramp's construction. Two other depressions (barrow-pits?) are located to the north of Mound A, separating it from the two smaller mounds.

At present there is no evidence as to the sequence of mound construction, although it is tempting to view the larger Mound A as being later than either Mounds B or C. Other than minor pot-hunter damage, Mound B does not appear to have been significantly altered. The somewhat irregular appearance of Mound C is of interest regarding the sequence of mound building. The small lobe (20cm high) laying just west of Mound C appears to have been connected with it at one time. There also appears to have been additional disturbance to Mound C, resulting in two crests in the smallest mound. None of the area's present residents
can recall any historic digging in the mound group, with the exception of the pot-hunter pits in Mounds A and B. It is possible that, during the construction of Mound A, Mound C was used as partial fill, resulting in its present appearance. During the field season, it was suggested that Mound C may have been an effigy mound; if this was the case, then Mound C may have been either an oval or biconical mound. The practice of constructing mounds at sites where earlier mounds already exist is well known (Rowe 1956; Hurley 1975).

A 2x1 meter trench was sunk into the western edge of Mound A. Figure 15 shows the soil profile from this test. A variety of soils appears to have been used in this mound's construction. In most instances, the soils are similar to those recovered from test excavations near the banks of the Crawfish River, the Je-76 and Je-81 tests. In the N434-435 W172-173 square, just below the sod zone, a lighter colored silt loam was recovered. This soil is similar to the loessic deposits that were encountered during the Je-82 excavations. It is interesting that more extensive use of these loessic soils was not made as they would have been more easily manipulated than the denser loams nearer the river.

There was a great deal of gravel throughout the mound fill. At this location, south of Mound A, there is a natural gravel deposit that was, at one time, mined by the
historic residents. This gravel deposit is probably related to the same glacial feature that the Crawfish River cuts through, creating both the shallow fording area and the advantageous positioning for the Milford Fish Dam. It appears that the heavily gravelled soils along the banks of the Crawfish provided most of the mound fill, and that only limited use of the northern loessic soils was made.

Table 9 indicates that a large amount of ceramics was recovered from this test trench. All the pottery recovered was grit-tempered and extremely fragmented; both cord-marked and smooth surface sherds were found. Two rim sherds were also recovered (Fig. 18e,f); both appear to be Madison Plain ware. A number of incised sherds were also recovered; these are similar to Dane Incised wares. Hurley (1975) cites both these wares in association with Effigy Mound complexes in Wisconsin. This association strengthens the suggestion that Mound C may have provided some of the fill for Mound A, as well as its being an effigy mound.

Appendix D provides further descriptions of the ceramics recovered from this test, as well as the three flaked artifacts retrieved. Two crude points were recovered (Fig. 36 a,b), neither providing any diagnostic information. A small copper pin was also found in a level containing approximately 15 sherds.

The mound fill of Mound A appears largely to have been
Table 2. Material totals and weights (in grams) from Je-83 by excavation units.

<table>
<thead>
<tr>
<th></th>
<th>3rd</th>
<th>4th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chert</td>
<td>27(11)</td>
<td>31(15)</td>
</tr>
<tr>
<td>Pottery</td>
<td>3(4)</td>
<td>12(23)</td>
</tr>
<tr>
<td>Quartzite/Hinton</td>
<td>-</td>
<td>1(1)</td>
</tr>
<tr>
<td>Bone</td>
<td>(6)</td>
<td>(5)</td>
</tr>
<tr>
<td>Shell</td>
<td>(1)</td>
<td>(1)</td>
</tr>
<tr>
<td>Gravels</td>
<td>(3000+)</td>
<td>(3512)</td>
</tr>
<tr>
<td>Rough rock</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Charcoal</td>
<td>-</td>
<td>(1)</td>
</tr>
</tbody>
</table>
Table 9. Continued.

<table>
<thead>
<tr>
<th></th>
<th>5th</th>
<th>6th</th>
<th>7th</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chert</td>
<td>177(144)</td>
<td>169(98)</td>
<td>84(61)</td>
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<tr>
<td>Pottery</td>
<td>110(121)</td>
<td>4(4)</td>
<td>1(1)</td>
</tr>
<tr>
<td>Quartzite/Hinxton</td>
<td>3(1)</td>
<td>5(10)</td>
<td>13(48)</td>
</tr>
<tr>
<td>Bone</td>
<td>(2)</td>
<td>(1)</td>
<td>-</td>
</tr>
<tr>
<td>Shell</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Gravel</td>
<td>(4450+)</td>
<td>(2980)</td>
<td>(2701)</td>
</tr>
<tr>
<td>Rough rock</td>
<td>10(373)</td>
<td>50(1250)</td>
<td>56(2050)</td>
</tr>
<tr>
<td>Charcoal</td>
<td>(2)</td>
<td>(5)</td>
<td>-</td>
</tr>
</tbody>
</table>
comprised of Effigy Mound or Woodland materials. The fill, however, obviously does not determine the mound's builders. The form of the mound is reminiscent of the pyramidal mounds at Aztalan and other Mississippian centers. Perhaps this mound group represents another instance of Mississippian influence and interaction with local, indigenous populations outside of Aztalan. Verification of this suggestion depends largely upon the discovery of the occupation site(s) responsible for the mound group and the variety of ceramics recovered from the surrounding region.
THE KASTEN MOUND GROUP AND LOCAL PREHISTORIC OCCUPATIONS

As a result of the limited site survey, the 1975 Loyola University Fieldschool concentrated its energies on an area west of Hilford, Wisconsin. This area revealed a considerable amount of prehistoric activity. The area also contained a prehistoric fish dam and a small mound group. A number of test excavations revealed a mixture of Woodland and Mississippian complexes.

Our initial intent was to investigate the area surrounding Aztalan in the attempt to understand further its relationship to other prehistoric complexes and to the American Bottom. A preliminary investigation can hardly hope to answer all the questions it originally poses; at best it can provide some of the data upon which future explorations can be based. Probably the most obvious example of the area's connection with the American Bottom is the Ramey Incised rim sherd (Fig. 17d) recovered from the Je-76 site. Another possible example of Mississippian influence in the area is the rectangular Mound A in the Kasten Mound Group.

As mentioned above, Aztalan's suggested function, and suggested length of occupation, might preclude the recovery of a great deal of Mississippian influence outside the
Aztalan site. Also, as the region examined was only three miles north of Aztalan, it would be unlikely that another large Mississippian site would arise so near to Aztalan.

Our research regarding other prehistoric complexes has been more satisfying. The Je-76 test excavations suggest that there was, at least, Woodland and Mississippian utilization of the same area, and possibly some interaction. While it is admittedly difficult to interpret small midden deposits, the mixture of cultural elements presents a number of interpretations. The Je-76 site may represent a succession of Woodland and Mississippian groups, or the simultaneous use of the same area, or the adoption of a new tempering agent by one group. In any case, the area to the south of the Je-76 site, which was in high corn throughout the field season, remains to be tested to determine if the occupation site(s) responsible for the midden lies there, or elsewhere.

It is also unlikely that it is purely accidental that the Je-76 coincides with the Milford Fish Dam. This dam, and the resources it provided, may have acted as a hub for prehistoric activity on both sides of the Crawfish River. Its spatial position also has to be considered. If non-Mississippian groups were traveling to Aztalan, for whatever purpose, it is likely that at least some of them would have chosen to cross the Crawfish at this convenient ford.

The Kasten Mound Group adds to the suggestion that
this was an area of concentrated prehistoric activity. While admittedly there is little hard data upon which to suggest that the Kasten Mound Group represents an instance of non-Mississippian/Mississippian interaction, the smaller mounds suggest Effigy Mound complex activity in the area.

Hurley (1975) suggests that the Effigy Mound tradition persisted in Wisconsin into the 1600s; he also notes the presence of effigy mounds at Aztalan. Accepting Hurley's views, there are no compelling reasons to regard the Kasten Mound Group as simply another instance of sequential mound building. However, the present state of Aztalan research precludes a more definite interpretation of the evidence.

An area that may provide additional data on this region lies approximately 50 meters to the north of the Kasten Mound Group. This is the Je-67 site, which yielded a thin lithic scatter and a few sherds. Clearer aerial photographs, obtained after the field season was over, revealed that this site was on the fringe of a rectangular, dark stained area in the middle of light colored till soil. This stained area may represent an occupation site connected with the mound group. Future explorations in the area hopefully will clarify the nature of this stained area.

Explorations surrounding the Wilford Fish Dam revealed a concentrated area of prehistoric activity. How this activity is related to Aztalan remains unclear. The presence of shell-tempered pottery and a rectangular,
possibly pyramidal, mound indicates Mississippian influence in this region. There is no reason to believe that the question of Mississippian activity outside of the immediate Aztalan site cannot be resolved. Investigations carried out by the 1975 Loyola Fieldschool have provided the initial data base for subsequent explorations in the problem area. Future research will aid in the further understanding of the archaeology of this region.
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Wittry, W. L. and R. E. Fitzenthaler.

Wray, D. E.

Yarnell, R.
APPENDIX A
## APPENDIX A

**CRAWFISH RIVER SITE SURVEY U.T.M. COORDINATES**

(7.5 Minute Quadrangles)

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APPENDIX B
APPENDIX B

CRAWFISH RIVER SITE SURVEY ARTIFACT DESCRIPTIONS

This appendix provides a cursory description of the individual sites recovered during the site survey. In general, only flaked artifacts are described. The choice to designate single flake recoveries as "sites" was made for two reasons. First, as the survey was partly conducted in a floodplain area, the combination of periodic deposition and dark colored silts created a situation where any recovery at all was significant. Second, work carried out by Dr. James W. Porter in similar locales in the American Bottom has indicated that surface collections often bore no relationship to subsurface concentrations. This was illustrated in Wisconsin at the Je-76 site, which yielded only a few surface sherds, but became the most productive test area.

Figure 16 illustrates the parameters employed in measuring projectile points. Unless otherwise noted, point descriptions and identifications follow Ritzenthaler (1967). With non-point artifacts, such as scrapers, the maximum dimensions are given, regardless of apparent orientation; as such, the length is always the maximum dimension. All dimensions are given in centimeters and grams.
A. Maximum Length  B. Maximum Width
C. Maximum Thickness  D. Maximum Basal Width
E. Minimum Basal Width  F. Stem Length

Fig. 16. Projectile Point Parameters.
LAKE MILLS QUADRANGLE SITES (La field numbers)

La-1 1 flake
La-2 1 flake
La-3 3 flakes
La-4 2 flakes
La-5 1 flake
La-6 1 flake
La-7 1 flake
La-8 3 flakes
La-9 Only two artifacts were recovered from this site, one was an unmodified chert flake. The other was a bifacially worked knife fragment, made from pink chert (Fig. 24d). Dimensions: Length 3.0, Width 1.9, Thickness 0.65, Weight 4.

La-10 3 flakes
La-11 2 flakes
La-12 A lithic scatter of over 100 chert, Waterloo quartzite, and Hixton silicified sandstone flakes over three-quarters of an acre. Two flaked artifacts were recovered:
1) a battered piece of grey chert (Fig. 23e), it is impossible to judge whether this piece was used as a point or a knife. Dimensions: L. 3.68, W. 2.03, T. 0.82, Wt. 4;
2) a possible side-notched projectile point, with a concave base, made from dark grey chert (Fig. 22h). Dimensions: L. 3.10, W. 2.58, T. 0.59, Wt. 5, maximum base W. 2.58, minimum base W. 2.30, stem L. 0.78.

La-13 A lithic scatter of 8 chert flakes over one-quarter of an acre.

JEFFERSON QUADRANGLE SITES (Je field numbers)

Je-2 One side-notched, straight base projectile point made of grey chert (Fig. 22a). Dimensions: L. 4.90, W. 2.09, T. 0.76, Wt. 6, max. base W. 1.91, min.
10. Four chert flakes found in a backdirt pile from a house construction site, near Je-10.

Je-4 A sparse chert scatter of 11 flakes over one-half acre. A triangular point of creme colored chert was also recovered (Fig. 19c). Dimensions: L. 3.31, W. 2.90, T. 0.77, Wt. 6.

Je-5 A lithic scatter of over 50 chert, Waterloo quartzite, and Hixton silicified sandstone flakes over three acres. Additionally, three flaked artifacts were recovered:
1) aotted white/grey chert projectile point, probably triangular (Fig. 19f). Dimensions: L. 2.08+, W. 1.77, T. 0.53, Wt. 2;
2) a broken, corner-notched projectile point of grey chert (Fig. 20a). Dimensions: Wt. 6, stem L. 1.24;
3) a scraper of dark grey chert (Fig. 25e). Dimensions: L. 0.77, W. 1.9, T. 0.82, Wt. 2.

Je-6 A lithic scatter of over 50 chert and Waterloo quartzite flakes over three acres; two flaked artifacts were also recovered:
1) a dark grey chert scraper (Fig. 25e). Dimensions: L. 2.7, W. 2.0, T. 0.36, Wt. 4;
2) a utilized core of pink chert (Fig. 30b). Dimensions: L. 4.2, W. 2.3, T. 1.40, Wt. 15.

[Je-7, Je-7H] A lithic scatter of over 300 chert and Waterloo quartzite flakes over seven acres. One, extremely worn, grit-tempered chert, Wt. 1, also was found, plus three flaked artifacts:
1) a light grey chert drill (Fig. 27d). Dimensions: L. 1.80, W. 1.27, T. 0.63, Wt. 1;
2) a large bifacial fragment of Waterloo quartzite (Fig. 26i). Dimensions: L. 5.9, W. 4.5, T. 0.32, Wt. 25;
3) a very finely flaked, lanceolate shaped projectile point of white chert (Fig. 19e). Its base is concave, but somewhat damaged, making identification difficult. Its general appearance is reminiscent of Plainview or Brown Valley points. Dimensions: L. 5.01, W. 2.82, T. 0.64, Wt. 10.

Je-7W A lithic scatter of over 100 chert, Waterloo quartzite, and Hixton silicified sandstone flakes over
four acres. Four flaked artifacts were recovered:
1) a scraper of banded Waterloo quartzite(Fig. 26f). Dimensions: L. 5.9, W. 2.9, T. 0.87, Wt. 13;
2) an endscraper of light grey chert(Fig. 25b). Dimensions: L. 2.8, W. 2.4, T. 0.60, Wt. 3;
3) a broken, side-notched projectile point base of mottled grey/white chert(Fig. 22i). Dimensions: Wt. 4;
4) a broken, expanding stem projectile point of dark grey chert(Fig. 21h). Dimensions: Wt. 2, max.
base W. 1.34, min. base W. 1.15, stem L. 1.23.

Je-8 A sparse lithic scatter of eight chert flakes over one to one and one-half acres.

Je-9 A sparse lithic scatter of nine chert and Waterloo quartzite flakes over one and one-half acres. A
large, white chert triangular point was also recovered(Fig. 19d). Dimensions: L. 6.92, W. 4.05, T. 0.91, Wt. 17.

Je-10 A lithic scatter of five chert flakes over one acre.

Je-11 A lithic scatter of over 50 chert and Waterloo quartzite flakes over three acres. Two flaked
artifacts were also recovered:
1) a large igneous/sedimentary knife fragment(Fig. 26i). Dimensions: L. 6.8, W. 3.2, T. 1.8, Wt. 11;
2) a thin, broken scraper/knife fragment of light grey chert(Fig. 24i). Dimensions: L. 4.3, W. 3.2, T. 0.96, Wt. 11.

Je-12 A thin lithic scatter of seven chert flakes over two-tenths of an acre. One flaked artifact was
recovered:
1) a large combination scraper/notch of Waterloo quartzite(Fig. 27c). Dimensions: L. 9.6, W. 5.2, T. 1.6, Wt. 96.
An inscribed and notched igneous rock(Fig. 31) was also recovered. Dimensions: L. 5.9, W. 3.3, T. 1.07, Wt. 26.

Je-13 A lithic scatter of over 100 chert, Waterloo quartz-
It was also recovered. Dimensions: L. 5.9, W. 3.3, T. 1.07, Wt. 26.
3) a convex base, Raddatz side-notched projectile point (Fig. 22f). Dimensions: L. 3.55, W. 1.88, T. 0.81, Wt. 3, max. base W. 1.40, min. base W. 0.94, stem L. 1.22;
4) a crude triangular point of white chert (Fig. 19c). Dimensions: L. 2.34, W. 2.59, T. 0.69, Wt. 4.

Je-14
A lithic scatter of over 50 chert, Waterloo quartzite, and Hixton silicified sandstone flakes over one and one-half acres. One flaked artifact was recovered:
1) a large Hixton silicified sandstone scraper/knife fragment (Fig. 26b). Dimensions: L. 5.4, W. 5.3, T. 0.84, Wt. 24.

Je-15
A lithic scatter of over fifty chert and Waterloo quartzite flakes over three acres. Three flaked artifacts were recovered:
1) a large scraper of white chert (Fig. 25g). Dimensions: L. 5.3, W. 4.3, T. 1.15, Wt. 24;
2) a brown chert sidescraper (Fig. 25j). Dimensions: L. 3.9, W. 2.7, T. 0.91, Wt. 6;
3) a broken projectile point of white chert (Fig. 23i). Dimensions: Wt. 2.

Je-16
Primarily a lithic scatter of over 300 chert and Waterloo quartzite flakes over four acres. Eight flaked artifacts were recovered, as well as a small amount of ceramics:
1) a large knife fragment of tan chert with quartz inclusions (Fig. 24f). Dimensions: L. 6.4, W. 5.9, T. 1.18, Wt. 37;
2) a thin scraper/knife fragment of grey chert (Fig. 24h). Dimensions: L. 5.7, W. 4.0, T. 1.11, Wt. 18;
3) a dark grey chert projectile point tip fragment (Fig. 23h). Dimensions: Wt. 4;
4) a light grey chert, bifacially worked scraper/knife fragment (Fig. 24a). Dimensions: L. 4.1, W. 3.2, T. 0.74, Wt. 7;
5) a small core of grey chert (Fig. 30c). Dimensions: L. 4.0, W. 3.5, T. 1.12, Wt. 15;
6) a Hixton silicified sandstone scraper (Fig. 26a). Dimensions: L. 3.2, W. 2.0, T. 0.74, Wt. 2;
7) a Hixton silicified sandstone scraper (Fig. 26c). Dimensions: L. 2.7, W. 1.8, T. 0.51, Wt. 2;
8) A Waterloo quartzite scraper fragment (Fig. 26e). Dimensions: L. 4.3, W. 2.7, T. 0.65, Wt. 4;
9) 14 grit-tempered, cord-marked sherds, Wt. 31,
   3 grit-tempered, smooth surface sherds, Wt. 8,
   2 shell-tempered, smooth surface sherds, Wt. 2,
   1 shell-tempered, scalloped rim sherd(Fig. 17a),
   Wt. 2.

**Je-17**
A thin lithic scatter of over 25 chert flakes over one acre. A small amount of ceramics was also recovered:
2 grit-tempered, cord-marked sherds, Wt. 4;
1 grit-tempered, scalloped rim sherd(Fig. 17b),
Wt. 5.

**Je-18**
A sparse lithic scatter of over 25 chert flakes over one acre. Three flaked artifacts were recovered:
1) a dark grey chert projectile point tip fragment (Fig. 23j). Dimensions: Wt. 1;
2) a crude stemmed point of white chert(Fig. 23b). Dimensions: L. 3.57, W. 1.57, T. 0.65, Wt. 4, max.
   base W. 1.40, min. base W. 1.23, stem L. 0.87;
3) a corner-notched, convex base, projectile point of white chert(Fig. 20c). Dimensions: L. 3.07,
   W. 2.21, T. 0.69, Wt. 3, max. base W. 1.17, min.
   base W. 1.07, stem L. 0.80.

**Je-19**
2 flakes

**Je-20**
A broken, stemmed projectile point of white chert (Fig. 21j). Dimensions: L. 3.03, W. 2.15, T. 0.50,
Wt. 4, base W. 1.52.

**Je-21**
1 flake

**Je-22**
A thin chert scatter of over 25 flakes over two and one-half acres. Three flaked artifacts were also recovered:
1) a small, serrated edge triangular point of pink chert(Fig. 19a). Dimensions: L. 1.95, W. 1.50,
   T. 0.37, Wt. 1;
2) a broken, unidentifiable point of pink chert (Fig. 23g). Dimensions: Wt. 3;
3) a grey chert endscraper(Fig. 25d). Dimensions:
   L. 2.9, W. 2.1, T. 0.84, Wt. 4.

**Je-23**
A thin lithic scatter of over 25 chert flakes over three acres. Four flaked artifacts were also recovered:
1) a large scraper of white chert(Fig. 25j).
   Dimensions: L. 5.5, W. 3.3, T. 1.57, Wt. 23;
2) a probable stemmed projectile point, with a broken base, made of white chert (Fig. 21k). Dimensions: L. 2.65+, W. 2.08, T. 0.53, Wt. 3;
3) a broken, side-notched projectile point of pink chert (Fig. 22j). Dimensions: L. 2.64+, W. 2.39, T. 0.69, Wt. 2.04, max. base W. 2.04, min. base W. 1.58, stem L. 0.62;
4) a mottled white/tan chert, bifacially worked scraper/knife fragment (Fig. 25c). Dimensions: L. 3.1, W. 2.8, T. 0.93, Wt. 5.

Je-24  1 flake
Je-25  1 flake
Je-26  3 flakes
Je-27  An unclassified, fluted Paleo-Indian projectile point of mottled brown chert (Fig. 19h). Dimensions: L. 4.59, W. 2.35, T. 2.13, Wt. 27, base W. 2.36, basal concavity 0.31, flute L. 1.27/1.15, flute W. 1.09/1.16.

Je-28  A lithic scatter of over 25 chert and Waterloo quartzite flakes over two and one-half acres. Five flaked articles were also recovered:
1) a light brown chert, straight stemmed projectile point (Fig. 21e). Dimensions: L. 2.74, W. 1.97, T. 0.47, Wt. 2, base W. 1.02, stem L. 0.71;
2) a broken, light brown chert, probably stemmed projectile point (Fig. 21i). Dimensions: L. 3.20+, W. 2.02, T. 0.65, Wt. 2, base W. 1.10;
3) a grey chert, contracting stem projectile point (Fig. 21a). Dimensions: L. 3.71, W. 2.32, T. 0.95, Wt. 6, max. base W. 1.60, min. base W. 1.09, stem L. 1.00;
4) a creme colored projectile point fragment (Fig. 20e), its serrated edges and truncated barb are reminiscent of Fox Valley Truncated Barb points.
5) a bifacially retouched scraper fragment (Fig. 24e). Dimensions: L. 4.0, W. 3.6, T. 1.35, Wt. 18.

Je-29  1 flake
Je-30  1 flake
Je-31  A contracting stem, Waubesa projectile point of mottled grey/pink chert (Fig. 21b). Dimensions: L. 6.64, W. 3.13, T. 0.96, Wt. 16, max. base W. 1.82, min. base W. 1.23, stem L. 1.24.
Je-32 1 flake

Je-33 1 flake

Je-34 A lithic scatter of less than 25 chert, Waterloo quartzite, and Hixton silicified sandstone flakes over one and one-half acres. One flaked artifact was also recovered:
1) a light grey chert, slightly expanding stem projectile point (Fig. 21f). Dimensions: L. 3.21, W. 2.07, T. 0.79, Wt. 4, max. base W. 1.57, min. base W. 1.33, stem L. 1.10.

Je-35 1 flake

Je-36 1 flake

Je-37 1 flake

Je-38 A historic pipe stem

Je-39 A bifacially retouched scraper fragment of pink chert (Fig. 24g). Dimensions: L. 3.9, W. 3.9, T. 1.05, Wt. 15.

Je-40 A chert scatter of over 35 chert flakes over two acres. Two flaked artifacts were also recovered:
1) a white chert, possibly stemmed projectile point fragment (Fig. 23a). Dimensions: Wt. 5;
2) a grey chert, slightly contracting stem projectile point fragment (Fig. 21c). Dimensions: Wt. 5, max. base W. 1.74, min. base W. 1.65, stem L. 1.23.

Je-41 A full-grooved ax, made from igneous rock (Fig. 30a) Dimensions: L. 10.0, W. 8.8, T. 2.63, Wt. 320, max. groove W. 1.90.

Je-42 A sparse scatter of 12 chert flakes over three acres.

Je-43 Fifteen chert flakes and five grit-tempered, cord-marked sherds, Wt. 6, from a small garden overlooking the Crawfish River, near the Je-42 site.

Je-44 3 flakes

Je-45 5 flakes

Je-46 A lithic scatter of over 30 chert flakes over three acres. One flaked artifact was recovered:
1) a broken, side-notched point of white chert, possibly a Raddatz point (Fig. 22d). Dimensions: Wt. 2.

Je-47 Three chert flakes over one-half acre. Two flaked artifacts were also recovered:
1) a grey chert, Madison side-notched projectile point (Fig. 22g). Dimensions: L. 2.53, W. 2.49, T. 0.68, Wt. 5, max. base W. 2.24, min. base W. 1.95, stem L. 0.63;
2) a white chert, serrated edge triangular point (Fig. 19b). Dimensions: L. 2.65, W. 1.85, T. 0.43, Wt. 2.

Je-48 A lithic scatter of 11 chert flakes over one acre. Two flaked artifacts were also recovered:
1) a mottled pink/grey chert, expanding stem projectile point (Fig. 21g). Dimensions: L. 2.82, W. 2.05, T. 0.48, Wt. 2, stem L. 0.71;
2) a white chert, with some cortex remaining, scraper (Fig. 25i). Dimensions: L. 5.3, W. 3.4, T. 0.48, Wt. 11.

Je-49 A sparse scatter of nine chert flakes over two acres.

Je-50 1 flake
Je-51 1 flake
Je-52 1 flake
Je-53 2 flakes
Je-54 2 flakes
Je-55 2 flakes
Je-56 2 flakes
Je-57 2 flakes
Je-58 2 flakes
Je-59 2 flakes
Je-60 4 flakes
Je-61 1 flake
Je-62 2 flakes

Je-63 3 flakes

Je-64 A grey chert, side-notched serrated edge projectile point (Fig. 23b). Dimensions: L. 3.88, W. 2.11, T. 0.71, Wt. 5, max. base W. 2.11, min. base W. 1.51, stem L. 0.75.

Je-65 1 flake

Je-66 2 flakes

Je-67 Eight chert flakes and two grit-tempered, smooth surface sherd.s, Wt. 4, over one-third acre. One flaked artifact was also recovered:
1) a broken, contracting stem projectile point (Fig. 21d). Dimensions: L. 2.75+, W. 2.99, T. 1.02, Wt. 7, max. base W. 2.00, min. base W. 1.88, stem L. 1.86.

Je-68 A lithic scatter of over 25 chert flakes over one-third acre.

Je-69 A lithic scatter of over 400 chert, Waterloo quartzite, and Mixton silicified sandstone flakes over two and one-half acres. Twelve flaked artifacts were also recovered:
1) a pink chert, serrated edge, corner-notched projectile point (Fig. 20a). Dimensions: L. 3.77, W. 2.48, T. 0.63, Wt. 4, max. base W. 1.44, min. base W. 1.14, stem L. 0.82;
2) a mottled grey/white chert, broken, stemmed projectile point (Fig. 23a). Dimensions: L. 2.46+, W. 2.18, T. 0.53, Wt. 2;
3) a crude point/knife of pink chert, with some cortex remaining (Fig. 23c). Dimensions: L. 3.74, W. 2.18, T. 1.02, Wt. 6;
4) a grey chert, side-notched point base fragment (Fig. 231). Dimensions: Wt. 1, max. base W. 1.36, min. base W. 1.00, stem L. 0.52;
5) a mottled pink/white chert, bifacially retouched scraper fragment (Fig. 24b). Dimensions: L. 4.4, W. 3.9, T. 0.90, Wt. 14;
6) a light grey chert, with cortex remaining, scraper (Fig. 25k). Dimensions: L. 5.7, W. 3.8, T. 1.20, Wt. 22;
7) a light grey chert scraper on a flake (Fig. 25a). Dimensions: L. 2.9, W. 1.9, T. 0.58, Wt. 2;
8) a Waterloo quartzite chopper/chopping tool (Fig. 29b). Dimensions: L. 12.8, W. 9.2, T. 5.12, Wt. 448;
9) a Waterloo quartzite chopper/chopping tool (Fig. 29a). Dimensions: L. 13.2, W. 8.6, T. 5.03, Wt. 550+;
10) a probable utilized core of Waterloo quartzite (Fig. 28a). Dimensions: L. 13.3, W. 10.9, T. 6.12, Wt. 550+;
11) a Waterloo quartzite chopper/chopping tool (Fig. 28b). Dimensions: L. 11.3, W. 7.0, T. 3.33, Wt. 256;
12) a Waterloo quartzite scraper. Dimensions: L. 8.8, W. 5.6, T. 1.85, Wt. 83.

Je-70 A light grey chert, probable Madison side-notched projectile point (Fig. 22e). Dimensions: L. 3.13, W. 1.80, T. 0.67, Wt. 4, max. base W. 1.80, min. base W. 1.30, stem L. 0.64.

Je-71 A thin scatter of 10 chert and Waterloo quartzite flakes over one-quarter acre. One flaked artifact was also recovered:
1) a Waterloo quartzite scraper/knife tip fragment (Fig. 27a). Dimensions: L. 3.1, W. 1.9, T. 0.76, Wt. 5.

Je-72 1 flake

Je-73 3 flakes

Je-74 1 flake

Je-75 A lithic scatter of over 30 chert and Waterloo quartzite flakes over one acre.

Je-76 A small, low area (20 meters N-S, 30 E-W) along the Crawfish River, which yielded 10 chert flakes and the following ceramics:
10 grit-tempered, smooth surface sherds, Wt. 15,
7 grit-tempered, cord-marked sherds, Wt. 17,
1 grit-tempered, incised sherd, Wt. 3,
7 shell-tempered, smooth surface sherds, Wt. 35,
1 grog-tempered, notched rim sherd (Fig. 17c), Wt. 4,
1 shell-tempered, Ramey Incised rim sherd (Fig. 17d), Wt. 14.

Je-77 One grit-tempered, cord-marked sherd, Wt. <1.
Je-78  1 flake
Je-79  1 flake
Je-80  1 flake
Je-81  Sterile surface
Je-82  Sterile surface
Je-83  The following ceramics were recovered from the
       surface of mound A in the Kasten Mound Group:
       3 grit-tempered, cord-marked sherds, Wt. 22,
       1 grit-tempered, incised sherd, Wt. <1.
Je-84  A small (10 meter in diameter) drainage area, north
       of the Crawfish River, and west of the Kasten Mound
       Group, yielding the following ceramics:
       19 grit-tempered, cord-marked sherds, Wt. 89,
       5 grit-tempered, smooth surface sherds, Wt. 16,
       5 grit-tempered, unidentifiable sherds, Wt. 7,
       1 grit-tempered, smooth surface rim sherd(Fig. 18c),
       Wt. 23,
       1 grit-tempered, smooth surface rim sherd(Fig. 18d),
       Wt. 6.
Je-85  A lithic scatter of over 50 chert flakes over one
       acre. Two flaked artifacts were also recovered:
       1) a grey chert, side-notched point(Fig. 22c).
       Dimensions: L. 3.87, W. 2.03, T. 0.79, Wt. 6, max.
       base W. 1.71, min. base W. 1.61, stem L. 0.55;
       2) a Waterloo quartzite scraper(Fig. 27b). Dimen-

WATERLOO QUADRANGLE SITES(Wa field numbers)
Wa-1  A lithic scatter of eight Waterloo quartzite flakes
       over one and one-half acres.
Wa-2  A lithic scatter of over 30 chert, Waterloo quartz-
       ite, and Hixton silicified sandstone flakes over
       four acres. One flaked artifact was also recovered:
       1) a creme colored chert projectile point tip
       fragment(Fig. 23k). Dimensions: Wt. 1.
Wa-3  A lithic scatter of eight chert and Waterloo quartz-
       ite flakes over one and one-half acres.
A lithic scatter of 10 chert flakes over one acre. One flaked artifact was also recovered: 1) a Waterloo quartzite notch(Fig. 26g). Dimensions: L. 4.5, W. 3.5, T. 1.05, Wt. 11.

1 flake

Six chert flakes over one-quarter acre.

4 flakes

Five chert flakes over one acre.

4 flakes

1 flake

1 flake

2 flakes

A pink chert, corner-notched projectile point(Fig. 20b). Dimensions: L. 3.13, W. 1.89, T. 0.39, Wt. 2, max. base W. 1.40, min. base W. 0.78, stem L. 0.82.

1 flake

1 flake

1 flake

1 flake
APPENDIX C
During the course of the site survey, the Milford Fish Dam was located and mapped (Maps 1 and 2). This fish dam has been previously reported on by Kuhm (1928), but had not been adequately mapped. The fish dam is located in an area where the Crawfish River cuts through a drumlin, resulting in one of the few areas of shallow rapids in the Crawfish system. The drumlin also provides the glacially derived materials used in the dam's construction. It would be interesting to verify if the other fish dams Kuhm mentions are located in similar situations.

The Milford Fish Dam is formed by two lines of rock which form a "V" pointing downstream, or eastward. At the lines' convergence, a small gap has been left, providing a space for netting or a weir. At present, the fish dam is somewhat damaged; whether this due to natural forces or to modern intervention is unknown. Supposedly, a second dam had been located approximately 100 meters upstream. Local residents do recall that an "Indian Dam" had been destroyed about a 100 years ago to provide materials for barn foundations. Boulders similar to those in the Milford Fish Dam can be seen in the barn foundations on the adjacent Kasten.
farms.

The fish dam was observed in late July, following a period of little rainfall. Consequently, the configuration of the dam was clearly visible. At this time, there was also little difficulty in fording the Crawfish. Remaining boulders would also provide a passable footbridge at higher water levels than those observed in July. The river, at this point, does not appear to be particularly deep. It would seem that this area would provide an excellent fording spot.

It is, of course, impossible to determine the age of fish trap, or who constructed it. Kuhm (1928:82-84) cites several ethnographic sources which indicate that the building of fish dams was practiced by Winnebago, Potawatomi, and Oneida groups. Disregarding any discussion of these groups' prehistoric antecedents, the technology involved in the dam's construction is not complex enough to discount any prehistoric manufacture.

Parmalee (1960) has analyzed the faunal remains recovered from the Aztalan site. The quantities of fish bone indicate that fish played a large role in the Aztalan diet. Catfish, bass, and buffalofish are among the varieties of fish taken by the Middle Mississippians. All the species identified by Parmalee are still present in the area, utilizing a variety of habitats (Hubbs and Lager 1947). It is
unlikely that the range of fish available near Aztalan is significantly different than that near Milford.

In addition to netting and trapping fish, it would have also been possible to spear larger fish, like pike and gar, as they passed through the open apex of the dam. The dam probably also acted as a breakwater that created a favorable stillwater environment for clams. The banks of the fish dam region are littered with the valves of clams. Clams would have provided both an additional food resource and an important source of raw materials.

The location of the fish dam is as interesting as its function. The dam is sandwiched between sites Je-17 and Je-76 on the south bank, and by the Je-81 site on the north bank of the Crawfish. The fish dam is also some 400 meters east of the Kasten Mound Group. Perhaps stretching orientations too far, the fish dam is approximately two miles due north of the Aztalan site. If it is too far to provide fish and shell resources to Aztalan, the fish dam would provide a convenient ford for groups travelling north and south. Regardless of its connection to Aztalan, the Milford Fish Dam is located in an area of appreciable prehistoric activity.
APPENDIX D

TEST EXCAVATION ARTIFACT DESCRIPTIONS

Je-16 Test

Seven flaked artifacts and one sherd were recovered from the Je-16 test.

N105-107 W50-51. 239.98-239.73 (plow zone). A light grey chert scraper (Fig. 32d). Dimensions: L. 3.5, W. 2.4, T. 1.39, Wt. 11.

N105-107 W50-51. 239.62-239.51. Two fragments of a fine-grained igneous material which form one scraper (Fig. 32g). Dimensions: L. 3.8, W. 2.9, T. 0.48, Wt. 5.

N107-108 W50-51. 239.96-239.70 (plow zone). A bifacial fragment of mottled red/white chert (Fig. 32f). Dimensions: L. 3.3, W. 2.5, T. 1.13, Wt. 8.

N108-109 W50-51. 239.94-239.75 (plow zone). A Waterloo quartzite scraper (Fig. 32a). Dimensions: L. 5.4, W. 2.2, T. 1.72, Wt. 13.

N109-110 W50-51. 239.94-239.67 (plow zone). Two fragments of light grey chert which combine to form one scraper (Fig. 32b). Dimensions: L. 2.8, W. 2.0, T. 0.50, Wt. 5; a Waterloo quartzite scraper (Fig. 32c). Dimensions: L. 3.8, W. 2.0, T. 0.44, Wt. 3.

N102-104 W50. No vertical control. A grey chert scraper (Fig. 32e). Dimensions: L. 3.5, W. 2.4, T. 1.39, Wt. 11.


N108-110 W50. No vertical control. A Waterloo quartzite scraper (Fig. 32b). Dimensions: L. 4.9, W. 2.7, T. 1.05, Wt. 9.
Je-17 Test

N154-156 E149-150. 236.51-236.28. A possible scraper of Waterloo quartzite (Fig. 32i). Dimensions: L. 6.5, W. 4.2, T. 1.22, Wt. 32.

Je-76 Test

Six flaked artifacts were recovered from this test; five were broken points, of which three were triangular. A large amount of fragmentary ceramics also was recovered.

N191-192 E21-22. 236.18-235.94 (plow zone). Three grit-tempered, unidentified sherds, Wt. 1; one shell-tempered, smooth surface sherd, Wt. <1.


N193-194 E21-22. 236.16-235.95 (plow zone). Three grit-tempered, unidentified sherds, Wt. 4; three shell-tempered, unidentified sherds, Wt. 2.


N194-195 E21-22. 236.21-235.93 (plow zone). A light brown chert, broken triangular point (Fig. 33b). Dimensions: W. 1.93, T. 0.39, Wt. 1; three grit-tempered, cord-marked sherds, Wt. 2; four shell-tempered, smooth surface sherds, Wt. 8; three unidentified sherds, Wt. 2.


N196-197 E21-22. 236.21-235.97 (plow zone). Three grit-tempered, cord-marked sherds, Wt. 1; four shell-tempered, smooth surface sherds, Wt. 2.

N197-198 E21-22. 236.17-235.95 (plow zone). Two grit-tempered, incised sherds, Wt. <1; one grit-tempered, unidentified sherd, Wt. <1; four shell-tempered, smooth surface sherds, Wt. 1; three unidentified sherds, Wt. <1.
N198-199 E21-22. 236.13-235.88 (plow zone). Six grit-tempered, cord-marked sherds, Wt. 5; one grit-tempered, inscribed sherd, Wt. 1; five shell-tempered, smooth surface sherds, Wt. 2.


N196-197 E22-23. 236.20-235.96 (plow zone). A mottled grey/pink chert, triangular point fragment (Fig. 33a). Dimensions: W. 1.58, T. 0.29, Wt. < 1; six shell-tempered, smooth surface sherds, Wt. 2.

N196-197 E23-24. 236.20-235.97 (plow zone). A mottled pink/grey chert, triangular point fragment (Fig. 33d). Dimensions: Wt. 3; a grey chert, bifacially worked scraper/knife fragment (Fig. 33f). Dimensions: L. 3.0, W. 2.3, T. 0.73, Wt. 2; fifteen grit-tempered, cord-marked sherds, Wt. 27; six grit-tempered, unidentified sherds, Wt. 4; eight shell-tempered, smooth surface sherds, Wt. 2; three unidentified sherds, Wt. 1.


N196-197 E24-25. 236.18-235.96 (plow zone). One grit-tempered, unidentified sherd, Wt. < 1; 21 shell-tempered, smooth surface sherds, Wt. 12; eight shell-tempered, unidentified sherds, Wt. 1; seven unidentified sherds, Wt. 4.

N196-196 E24-25. 235.96-235.86. Six grit-tempered, unidentified sherds, Wt. < 1; two shell-tempered, smooth surface sherds, Wt. 3.

N196-197 E25-26. 236.18-235.95 (plow zone). Three grit-tempered, unidentified sherds, Wt. < 1; eight shell-tempered, smooth surface sherds, Wt. 5; three unidentified sherds, Wt. 1.


N196-197 E27-28. 236.20-235.94 (plow zone). Two grit-tempered, cord-marked sherds, Wt. 24; nine shell-tempered, smooth surface sherds, Wt. 6; 13 unidentified sherds, Wt. 5.


N197-198 E22-23. 236.18-235.97 (plow zone). A mottled grey/white chert, contracting stem projectile point fragment (Fig. 33c). Dimensions: Wt. 8, max. base W. 1.50, min. base W. 1.06, stem L. 1.23; one grit-tempered, stamped rim sherd (Fig. 17c), Wt. 9; one grit-tempered, cord-marked sherd, Wt. 1; 13 shell-tempered, smooth surface sherds, Wt. 29; two shell-tempered, unidentified sherds, Wt. 1.

N198-199 E22-23. 236.04-235.90 (plow zone). A grey chert projectile point tip fragment (Fig. 33e). Dimensions: Wt. 2; two grit-tempered, unidentified sherds, Wt. 4; seven shell-tempered, smooth surface sherds, Wt. 6; one unidentified rim sherd (Fig. 18b), Wt. <1; 13 unidentified sherds, Wt. 2.

N198-199 E24-25. 236.14-235.88 (plow zone). Five grit-tempered, unidentified sherds, Wt. 1; 17 shell-tempered, smooth surface sherds, Wt. 22; three shell-tempered, incised sherds, Wt. 1; one shell-tempered rim sherd (Fig. 18a), Wt. <1; nine shell-tempered, unidentified, Wt. 3; two unidentified sherds, Wt. 1.

N198-199 E24-25. 235.88-235.78. One shell-tempered, smooth surface sherd, Wt. 3.

N198-199 E25-26. 236.08-235.85 (plow zone). Eight grit-tempered, unidentified sherds, Wt. 3; 32 shell-tempered, unidentified sherds, Wt. 15; one shell-tempered rim sherd (Fig. 17f), Wt. 4; 21 unidentified sherds, Wt. 3.


N198–199 E26–27. 236.11–235.30 (plow zone). Two grit-tempered, cord-marked sherds, Wt. 24; nine shell-tempered, smooth surface sherds, Wt. 6; 13 unidentified sherds, Wt. 5.


Je-81 Test

Six flaked artifacts were recovered from this test, as well as a quantity of ceramics.


N314–315 E59–60. 236.33–236.22. A white chert, bifacially worked point/knife fragment (Fig. 34c). Dimensions: L. 3.3, W. 2.4, T. 0.87, Wt. 4.

N315–316 E59–60. 236.78–236.68. Seven grit-tempered, cord-marked sherds, Wt. 4; one shell-tempered, smooth surface shard, Wt. 4.

N315–316 E59–60. 236.47–236.37. A mottled pink/grey chert, broken base, corner-notched projectile point (Fig. 34a). Dimensions: L. 4.14, W. 2.24, T. 0.76, Wt. 11.

N316–317 E59–60. 236.80–236.70. Six grit-tempered, cord-marked sherds, Wt. 3.

N316–317 E59–60. 236.70–236.60. Three grit-tempered, unidentified sherds, Wt. 3.

N316–317 E59–60. 236.50–236.40. A crude white chert point/knife fragment (Fig. 34a). Dimensions: L. 3.13, W. 1.79, T. 0.75, Wt. 3; a broken, tan chert with cortex, point/knife (Fig. 34b). Dimensions: L. 4.01, W. 2.25, T. 0.66, Wt. 5.


N317–318 E59–60. 236.52–236.42. A light grey chert scraper (Fig. 34c). Dimensions: L. 4.1, W. 3.1, T. 1.18, Wt. 11.
N319-320 E59-60. 236.66-236.59 (sod zone). Five grit-tempered, cord-marked sherds, Wt. 3.

N319-320 E59-60. 236.59-236.49. Three grit-tempered, unidentified sherds, Wt. 4.

N319-320 E59-60. 236.49-236.37. A Waterloo quartzite scraper (Fig. 34f). Dimensions: L. 7.7, W. 4.4, T. 1.41, Wt. 39.

N319-320 E59-60. 236.37-236.27. A grey chert scraper (Fig. 34g). Dimensions: L. 5.0, W. 3.3, T. 1.53, Wt. 12.

Je-82 Test

Ten flaked artifacts were recovered from this test.

N454-455 W138-139. 241.14-241.04. A light grey chert, crude point/knife fragment (Fig. 35c). Dimensions: L. 2.5, W. 2.0, T. 0.85, Wt. 2; a grey chert, bifacially worked scraper/knife (Fig. 35h). Dimensions: L. 4.8, W. 3.2, T. 1.08, Wt. 12.

N455-456 W138-139. 241.19-241.08. A mottled pink/grey chert, bifacially worked scraper/knife fragment (Fig. 35f). Dimensions: L. 4.7, W. 3.9, T. 1.23, Wt. 19; a crude, dark grey chert point (Fig. 35a). Dimensions: L. 3.10, W. 1.59, T. 0.77, Wt. 2.

N456-457 W138-139. 241.27-241.17. A Niton silicified sandstone scraper (Fig. 35i). Dimensions: L. 3.7, W. 2.0, T. 0.40, Wt. 3.


N456-457 W138-139. 241.07-240.97. A grey chert point base fragment (Fig. 35b). Dimensions: L. 1.93+, W. 2.13, T. 0.77, Wt. 3; a mottled pink/grey chert scraper (Fig. 35g). Dimensions: L. 4.4, W. 2.9, T. 1.56, Wt. 13.

N457-458 W138-139. 241.19-241.09. A mottled pink/dark grey chert, bifacially retouched scraper fragment (Fig. 35d). Dimensions: L. 2.1, W. 1.7, T. 0.81, Wt. 2.

N458-459 W138-139. 241.19-241.08. A mottled grey/red chert, bifacially retouched scraper/knife fragment (Fig. 35e). Dimensions: L. 2.7, W. 2.2, T. 0.74, Wt. 6.
Three flaked artifacts, plus one copper pin, were recovered from this trench. A large amount of ceramic material was also recovered. However, most of the ceramics were extremely fragmented, making some identifications tenuous.


N433-434 W172-173. 240.48-240.37. A light pink chert, biaxially retouched scraper/knife fragment (Fig. 36c). Dimensions: L. 3.6, W. 2.4, T. 0.45, Wt. 2; six grit-tempered, cord-marked sherds, Wt. 20.

N433-434 W172-173. 240.37-240.26. One grit-tempered, cord-marked rim sherd (Fig. 18e), Wt. 19; 20 grit-tempered, smooth surface sherds, Wt. 13; 56 grit-tempered, unidentified sherds, Wt. 31.

N433-434 W172-173. 240.26-240.16. A crude, mottled pink/grey chert point (Fig. 36a). Dimensions: L. 3.0, W. 2.0, T. 1.6, Wt. 2; 35 grit-tempered, cord-marked sherds, Wt. 40; 28 grit-tempered, smooth surface sherds, Wt. 25; 150 grit-tempered unidentified sherds, Wt. 61.

N433-434 W172-173. 240.16-240.06. Fourteen grit-tempered, cord-marked sherds, Wt. 8; 16 grit-tempered, smooth surface sherds, Wt. 14; 21 grit-tempered, unidentified sherds, Wt. 9.

N433-434 W172-173. 240.06-239.98. Nineteen grit-tempered, cord-marked sherds, Wt. 54; 17 grit-tempered, smooth surface sherds, Wt. 20; 22 grit-tempered, unidentified sherds; 1 grit-tempered, inscribed sherd, Wt. 4.

N433-434 W172-173. 239.86-239.77. One grit-tempered, smooth surface sherd, Wt. 2.


N434-435 W172-173. 240.37-240.27. Four grit-tempered, cord-marked sherds, Wt. 7; six grit-tempered, smooth surface sherds, Wt. 1; 21 grit-tempered, unidentified sherds, Wt. 8.
N434-435 W172-173. 240.27-240.17. Ten grit-tempered, cord-marked sherds, Wt. 8; four grit-tempered, smooth surface sherds, Wt. 4; three grit-tempered, unidentified sherds, Wt. 2.


N434-435 W172-173. 240.17-240.07. A crude, tan chert, side-notched point fragment (Fig. 36b). Dimensions: L. 2.6, W. 1.8, T. 0.78, Wt. 2; 12 grit-tempered, cord-marked sherds, Wt. 13; three grit-tempered, smooth surface sherds, Wt. 4; one grit-tempered, incised sherd, Wt. 1; 10 grit-tempered, unidentified sherds, Wt. 7; one grit-tempered, cord-marked rim sherd (Fig. 18f), Wt. 8.


N434-435 W172-173. 239.96-239.86. Two grit-tempered, cord-marked sherds, Wt. 2; six grit-tempered, smooth surface sherds, Wt. 2.
Fig. 17. Crawfish River Site Survey and test excavation rim profiles (actual scale).
Fig. 18. Crawfish River Site Survey and test excavation rim profiles (actual scale).
Fig. 19. Paleo-indian and triangular projectile points (actual scale).
Fig. 20. Corner-notched projectile points (actual scale).
Fig. 21. Stemmed projectile points (actual scale).
Fig. 22. Side-notched projectile points (actual scale).
Fig. 23. Crude points and point fragments (actual scale).
Fig. 24. Bifacial pieces (actual scale).
Fig. 25. Chert scrapers (actual size).
Fig. 26. Hixton silicified sandstone and Waterloo quartzite artifacts (actual scale).
Fig. 27. Waterlob quartzite artifacts (a–c) and short drill (d) (actual scale).
Fig. 28. Waterloo quartzite chopper/chopping tools (actual scale).
Fig. 29. Waterloo quartzite chopper/chopping tools (actual scale).
Fig. 30. Grooved ax from Je-41, two chert cores (actual
Fig. 31. Inscribed piece from Je-12 (actual scale).
Fig. 32. Artifacts from Je-16(a-h) and Je-17(i) test excavations (actual scale).
Fig. 33. Artifacts from the Je-76 test excavations (actual scale).
Fig. 34. Artifacts from the Je-81 test excavations (actual scale).
Fig. 35. Artifacts from the Je-82 test excavations (actual scale).
Fig. 36. Artifacts from the Je-83 test excavations

(actual scale)
This thesis submitted by Fred K. Stuebe has been read by the following committee:

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The final copies have been examined by the director of the thesis and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the thesis is now given final approval with reference to content and form.

The thesis is therefore accepted in partial fulfillment of the requirements for the degree of Master of Arts.

Date: July 16, 1976
Signature of Director