1987

21-Archaeological Test Excavations at the Stork Site (2DCS45), Porter Township, Cass County, Michigan

William M. Cremin
Western Michigan University

DEPARTMENT OF ANTHROPOLOGY

WESTERN MICHIGAN UNIVERSITY

TECHNICAL REPORT NO. 21

1987

ARCHAEOLOGICAL TEST EXCAVATIONS AT THE STORK SITE (20CS45), PORTER TOWNSHIP, CASS COUNTY, MICHIGAN

A Report of Phase II Archaeological Test Excavations Conducted for the Michigan Department of Transportation and the Michigan Department of State under Contract #85-1115 (MDOS ER #1594) by Western Michigan University, with Dr. William M. Cremin as the Project Principal Investigator.

William M. Cremin

ABSTRACT

With the execution of a Cultural Resource Investigation work authorization (#5-86/87) under contract #85-1115 (MDOS ER #1594) between the Michigan Department of Transportation, the Michigan Department of State, and Western Michigan University, calling for Phase II archaeological excavation of that portion of the Stork site (20CS45) lying within the expanded right-of-way on the north side of US-12 in Section 1 of Porter Township, Cass County, Michigan, researchers from the Department of Anthropology began a literature, documents, and site file search, reviewed reports of previous work on the site, and undertook limited test excavations on 1-2 Nov 86 in order to determine whether this site was eligible for listing in the National Register of Historic Places.

On-site investigation commenced with surface collection and shovel testing at intervals of 5 m along transects in an area comprising 720 m^2 of a ridge remnant overlooking a small intermittent stream passing by it on the east. According to the Phase I survey report (Garland 1980), this was the general location of the finds leading to the recording of this site with the state, but due to denial of access on the part of the landowner in 1981 this portion of the site was not examined during the original Phase II testing of the site (Myers 1981). Hence, the reason for WMU having undertaken this study.

With surface collection and shovel testing proving inconclusive, the field team concentrated on the excavation of a systematic aligned and judgement sample of 17 1 X 1 m test squares laid out across the crest of the ridge. While the plow zone did produce prehistoric lithic debris and three subsurface features (pits) providing some undisturbed cultural context were delineated, the results of our testing program shed little new light on the prehistoric occupation(s) of this site. The Stork site, as Myers (1981: 21) has suggested, would appear to represent a temporary special purpose encampment.

Considering all information now available to us, this site, while providing minimal evidence for a Paleo-Indian occupation, is in all probability an Archaic campsite. And from the perspective of the botanical remains from the features, it would seem that autumn occupation represents the best estimate of seasonality that can be derived from the scanty indicators in the data set. This interpretation is most consistent with the exposed nature of the site, the lack of evidence for the presence of substantial structures, and the natural or wild food potentials provided by resource zones that presumably comprised the immediate site environs.

In the final analysis, it seems most appropriate to conclude that this site hosted a prehistoric community that was in the main a seasonal and task specific one--a community characterized by intermittent and extensive rather than long term and intensive occupation. As such, it probably reflects a pattern very much in evidence at other sites in the general area. From this perspective, there is nothing that suggests that 20CS45 warrants additional study or inclusion in the National Register.

ACKNOWLEDGMENTS

The author wishes to thank the members of the team responsible for the program of excavation at the Stork site and, especially, Mr. David De Fant, who supervised the fieldwork and also assumed responsibility for the curation and analysis of the cultural assemblage and identified the wood charcoal in flotation samples from features on 20CS45.

W.M.C

TABLE OF CONTENTS

TABLES

FIGURES

INTRODUCTION:

Pursuant to the execution of a Cultural Resource Investigation work authorization (#5-86/87) under contract #85-1115 (MDOS ER #1594) on 10 Oct 86 between the Michigan Department of Transportation, the Michigan Department of State, and Western Michigan University, calling for Phase II archaeological test excavation of the Stork site (20CS45) in Porter Township, Cass County, Michigan, a team of researchers from the Department of Anthropology began a literature, documents, and site file search, reviewed reports of previous work on this site (Garland 1980; Myers 1981), and undertook limited test excavations on 1-2 Nov 86 in order to determine whether this site might be eligible for listing in the National Register of Historic Places, necessitating that it either be avoided or mitigated during proposed reconstruction of US-12. There follows a report of the research program initiated on this occasion, together with recommendations based upon our findings.

It should be understood that the opinions, findings, and conclusions presented in this publication are those of the author, Dr. Cremin, and not necessarily those of the Michigan Department of State, or Bureaus thereof, or the Michigan Department of Transportation or the Michigan Transportation Commission and the United States Department of Transportation or agencies thereof.

PROJECT PERSONNEL:

The following individuals comprise the team responsible for the research program reported herein:

Principal Investigator - Dr. William M. Cremin, Associate Professor of Anthropology, Western Michigan University

Field Supervisor - Mr. David De Fant, M.A., Department of Anthropology, WMU

Field Assistants - Ms. Mary Jeakle, M.A. Candidate in Anthropology, WMU

- Mr. Conrad Kaufman, Graduate Student in Anthropology, WMU

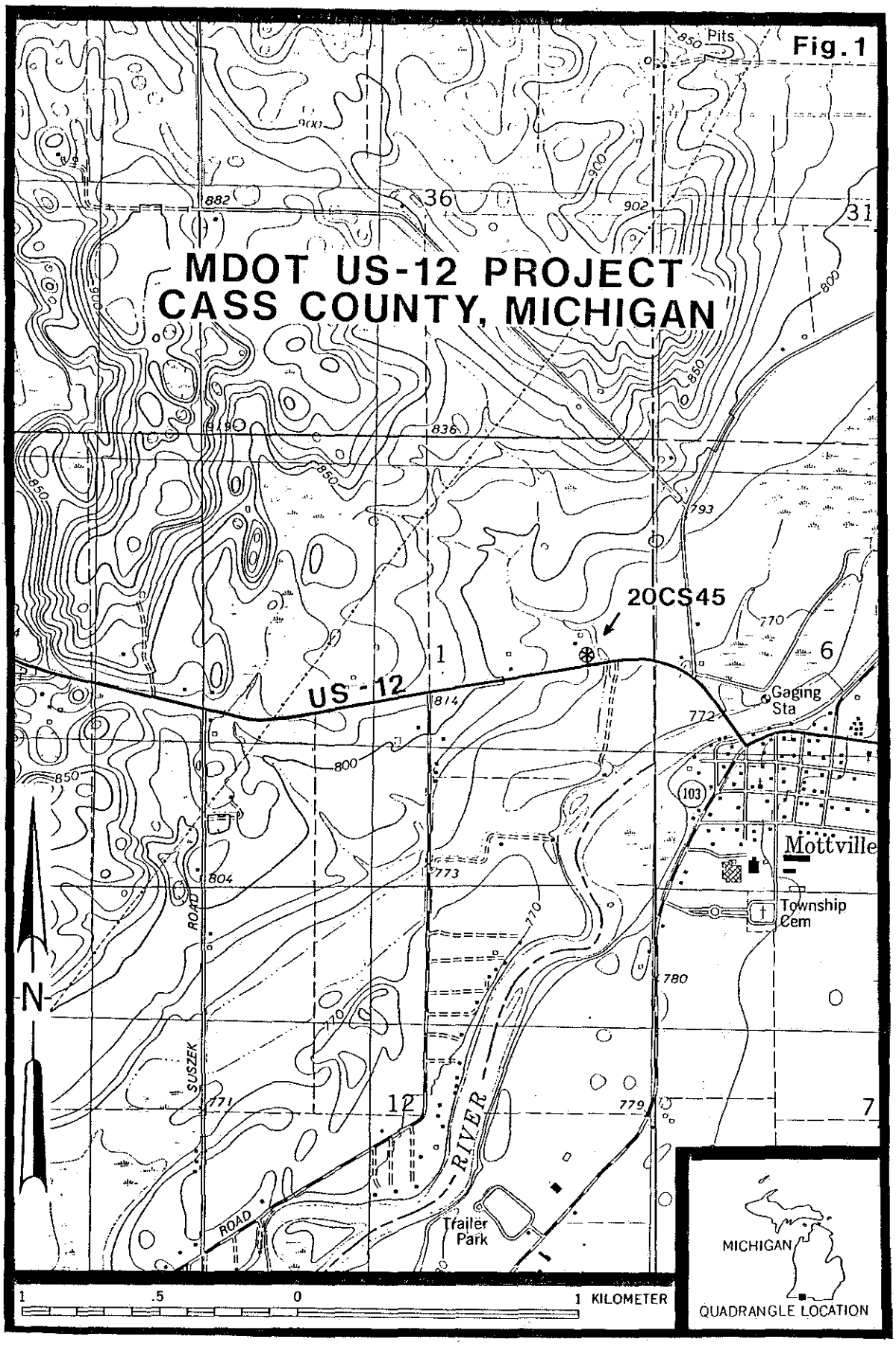
- Mr. Dale Quattrin, Graduate Student in Anthropology, WMU

DESCRIPTION OF THE STUDY AREA (STORK SITE SETTING):

The Stork site (20CS45) is located in the NW 1/4, NE 1/4, SE 1/4 of Section 1, Porter Township (T8S R13W), Cass County, Michigan. Lying at an elevation of about 234 m above sea level, the site occupies a ridge that for a short distance parallels the course of the modern St. Joseph River situated 460 m east of the site near Mottville, Michigan. This landform is separated from the river by a south flowing intermittent stream that partially encircles the site at a distance of 80 m to the north and 20 m to the east of the ridge crest. Between this small stream valley and the river channel there formerly existed low-lying wetlands, but today most of the river floodplain in the immediately vicinity has been drained and put into cultivation (Fig. 1).

The ridge in question is now bisected by US-12. As initially defined during Phase I survey (Garland 1980), the Stork site appeared to be confined to an area of about 400 m^2 in a small field occupying that portion of this landform on the north side of the highway. However, subsequent Phase II investigation (Myers 1981) of the site has established that it extends across US-12 to include the ridge remnant lying to the south of the highway as well. According to Myers (1981:1),

Fig. 1


MDOT US-12 PROJECT
CASS COUNTY, MICHIGAN
20CS45
US-12
Pits
Gaging Sta
Mottville
Township Cem
Trailer Park
SUSZEK ROAD
RIVER
ROAD
36
31
1
6
12
7
N
1 .5 0 1 KILOMETER
MICHIGAN
QUADRANGLE LOCATION

the area of the debris scatter is 7200 m^2; in other words, the site is coterminous with the crest of the ridge itself.

Examination of relevant maps clearly shows that this landform is situated on the valley floor, with the bluffs defining the margins of the river valley commencing at a distance of 1.5 km to the west of the site. At this point, uplands rise quite rapidly to an elevation in excess of 276 m ASL (Fig. 1), providing for overall relief within a radius of 2.0 km of the Stork site of more than 50 m.

The area about the site is now dominated by cultivated fields and pasture lands. Formerly, however, this landscape of dissected morainal uplands and extensive nearly level to slightly undulating floodplain featured a varied vegetative cover consisting mostly of broad-leaved deciduous forest typical of the Carolinian biotic province (Cleland 1966). Utilizing several reconstructions (Brewer 1979; Hodler et al. 1981) of presettlement vegetation in southwest Michigan derived from the fieldnotes and plats of the Government Land Office surveys, it is reasonable to postulate for the floodplain and adjacent uplands a lush plant resource base for exploitation by the human residents of this segment of the St. Joseph River valley. Included within the immediate site environs (i.e. easy walking distance) were the following plant communities: southern floodplain forest; southern swamp forest; wetland communities such as tamarack swamp, shrub-carr, wet prairie, and marsh; and upland forests including the beech-sugar maple, oak, and oak savanna associations.

The riverbanks and bottoms flanking either side of the St. Joseph were subject to periodic flooding. Here, the forest was dominated by American elm or slippery elm, silver maple, and red

maple, but with some black ash, sycamore, black walnut, butternut, cottonwood, hackberry, basswood, and honey locust also being present. Although more typical of uplands where glacial-till derived soils predominated, the beech-sugar maple association can be anticipated on dry sites (e.g. the ridge on which the Stork site is located) occurring in the floodplain. Inundated areas in close proximity to the river and along the course of tributaries such as the stream passing by the Stork site would have supported species of the southern swamp forest, including black willow, pin oak, aspen, and sycamore. Important nonarboreal species of wet bottoms included cattail, bulrush, arrowhead, pond lilly, and American lotus.

Glacial till-derived upland soils, in addition to the dominant beech-sugar maple association, would have supported as important constitutents of the upland community species such as basswood, blue or green ash, red or American elm, and ironwood. And where sandy outwash-derived soils dominated, there occurred the various oak associations common to uplands in this part of the state, including oak savanna and oak forest. While both of these communities are notable for the dominance of white oak, with black oak, bur oak, pignut hickory, and shagbark hickory occurring in small numbers, the latter can be distinguished by its much greater tree density, resulting in a more closed canopy, and the addition of the red oak as an important constitutent.

Finally, the intermittent stream that rises to the north of the Stork site and flows by it along the eastern margin of the ridge has been observed to occupy a valley varying in width of from 20-30 m. Within this narrow valley, the stream channel is typically 3-8 m wide and strongly meandering throughout its course. At the time of

fieldwork, stream flow was noted to be quite rapid but confined to no more than a 3-4 m strip within the limits of the recognizable channel. Considerable glacial debris (i.e. till cobbles) was observed to be eroding out of the banks where the stream is actively undercutting its banks, contributing to a stream bed that consists of coarse sand and gravelly material rather than fine-grained water deposited sediments of a more silty nature. As the creek proceeds in a southerly direction toward its confluence with the St. Joseph River, it courses over numerous riffles below which are shallow pools representing the widest expanses of water observed in this tributary stream valley. The depth of water over the rocky riffles was typically 20-30 cm, but several pools were noted to collect water to a depth of 80-100 cm.

The entire valley floor not presently occupied by stream channel is choked with tree growth but very little understory or ground cover. Species represented are predominantly red and silver maple, slippery elm, American elm, sycamore, and black walnut. What understory existed was observed to be almost entirely composed of the seedlings of maple and elm.

The present research area terminates on the east amidst a notable deposit of glacial rubble on the heavily eroded valley slope about 15 m west of the stream channel and just upstream from that point where the creek enters a cement culvert passing beneath US-12 (Fig. 1).

PREVIOUS RESEARCH BEARING ON THE STORK SITE AND THIS SEGMENT OF THE ST. JOSEPH RIVER VALLEY:

An extensive and thorough review of the literature, documents, and state site files prior to the initiation of fieldwork revealed

that no prehistoric or historic aboriginal sites had been reported for the general area of the Stork site prior to the commencement of archaeological fieldwork related to the MDOT project in 1979 and subsequently reported by Garland (1980). Be that as it may, it is perhaps noteworthy that the county histories (Mathews 1882; Rogers 1875) consulted during the present Phase II research program indicate that in the early nineteenth century this area of Cass County was the "domain" of a band of 50 people comprising nine families of Potawatomi Indians under the leadership of Chief Shavehead. While both sources note that the band "headquartered" on Baldwin's Prairie and/or Shavehead Prairie, Mathews (1882: 48) states that the Indians spent at least part of the year on the St. Joseph River in the extreme southeastern corner of the county where Shavehead was in the habit of maintaining a residence on the river opposite Mottville for the purpose of taxing the early settlers who attempted to cross the stream on the old Chicago Trail (US-12). This would place the Indian encampment within a few hundred meters of the site that is the subject of this report.

With respect to the Stork site, itself, initial investigation began in 1979 when, as part of a Phase I site location survey of three alternate alignments proposed by the MDOT for widening the approaches and replacing the bridge over the St. Joseph River at Mottville, archaeologists from WMU encountered and recorded this site on the property of Mr. John Stork. On this occasion, the survey team observed on the surface of a small field on the north side of US-12 a light lithic and fire-cracked rock scatter that encompassed about 400 m^2 of the crest of the ridge just west of an intermittent stream flowing to the St. Joseph River. Among the

10 cultural items comprising the surface collection were a partial Paleo-Indian fluted point fabricated on a flake of mottled blue/white chert with secondary heat fractures and reddish discoloration and a biface that could tentatively be assigned to an Archaic period occupation of this site (Garland 1980: 9-10).

While the potential significance of the Stork site was difficult to evaluate from the perspective of this small assemblage, the project Principal Investigator, Dr. Elizabeth Garland, proposed that in light of the rarity of well-documented fluted points for the area and the virtual absence of reported Paleo-Indian sites that it be mitigated (1980: 13).

Subsequent Phase II testing of the Stork site by Resource Analysts, Inc. of Bloomington, Indiana in 1981 revealed that this site was more extensive than previously thought, including not only the small field on the north side of US-12 where the WMU survey team had observed the cultural material but also extending in a southerly direction to include that portion of the ridge lying on the south side of the highway. During this phase of the investigation, the ridge remnant in the cultivated field south of US-12 was subjected to intensive surface reconnaissance followed by systematic shovel testing along transects at intervals of 10 m. By this means the field party was able to determine that the distribution of cultural debris both on the surface and in the plowzone was essentially coterminus with the ridge crest, and estimated site area was extended to include an area of about 7200 m^2 (Myers 1981: 1, 12-14).

Following application of the aforementioned recovery procedures, the field party excavated four 1 X 2 m test squares in the MDOT right-of-way on the south side of the highway. On the north side

of US-12, Phase II investigation was confined to the ROW because Mr. Stork denied access to that portion of the site occurring on his property. Here, because of the steep road cut paralleling the highway, the application of standard excavation procedures was not possible. The removal of soil and examination of the soil profile was necessarily confined to the upper portion of the bank as close to the ground surface as possible at two separate locations (Myers 1981: 15-17).

During the Phase II investigation conducted by RAI personnel the following cultural items were collected: four bifaces or biface fragments; one denticulate graver/scraper; three decortication flakes, one of which exhibited utilization; one large utilized flake; 10 waste flakes and/or pieces of angular debris; five pieces of FCR; and one historic whiteware sherd. No subsurface features were encountered (Myers 1981: 18-19).

Although RAI investigators clearly established that much of this site had been affected during previous road construction, and that the ridge remnant on the south side of US-12 had been subjected to erosion and much loss of topsoil as a result of cultivation, greatly reducing the opportunity for delineating subsurface features had they previously existed, Myers (1981: 22) did note that the ridge remnant on the north side of the highway, on the property of Mr. Stork, appeared to be less eroded. Here, the opportunity for finding preserved context beneath the plowzone would be much greater; that is, had RAI personnel been granted access to this portion of the Stork site.

Nevertheless, this report authored by Myers concludes with an identification of the site as a temporary special purpose camp--

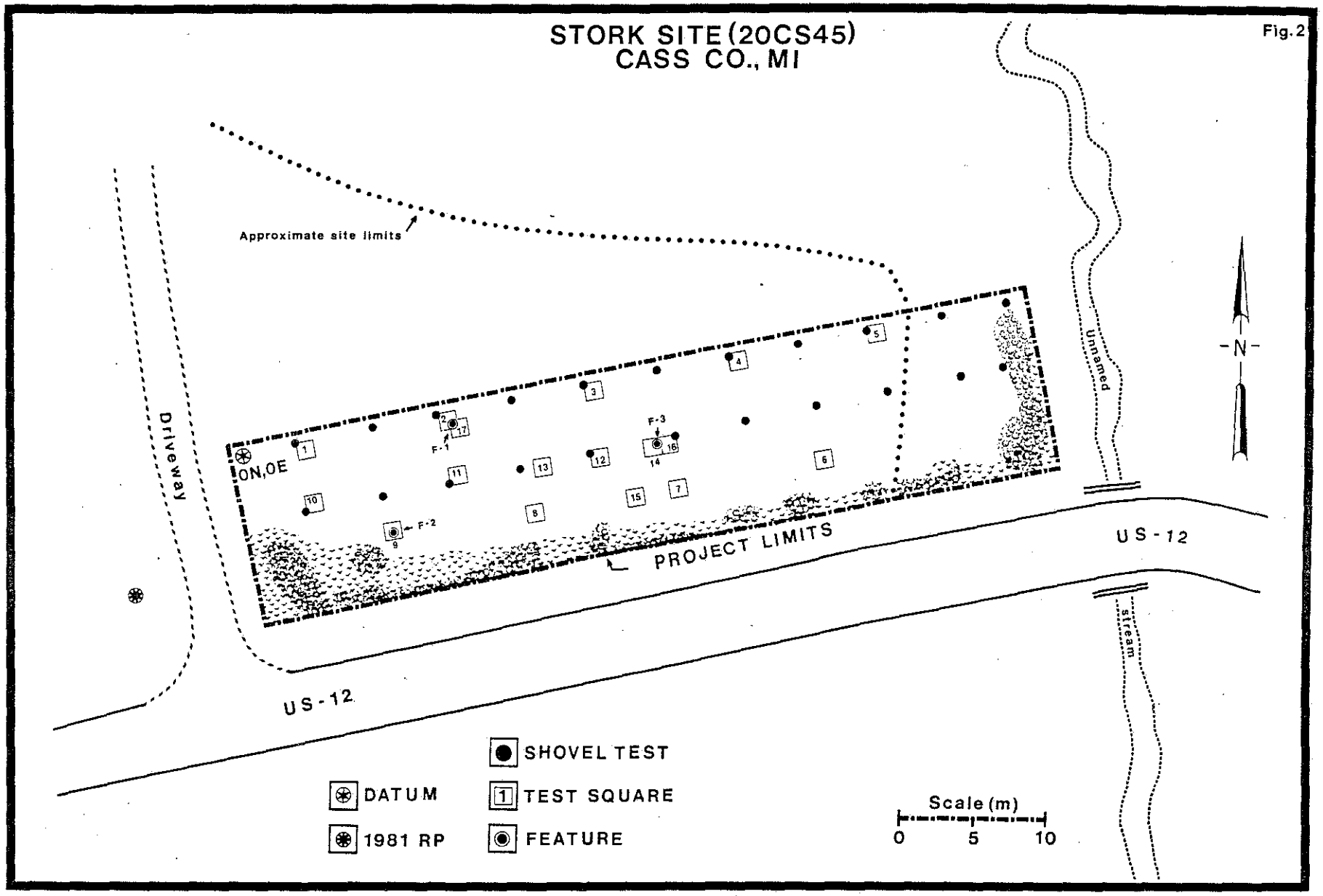
perhaps the only interpretation that is warranted in light of the sparse cultural remains and absence of features signaling activity areas in those portions of the site accessible to RAI personnel for the purpose of Phase II evaluation (Myers 1981: 20-21). Nor for that matter does the report really address in any definitive way the issue of the site's apparent temporal placement and/or cultural affiliation. The data presented in this report neither substantiate nor refute the interpretations offered by Garland following analysis of the initial data set recovered from the surface of the site at the time of its discovery and entry into the state site files.

WMU'S PHASE II TEST EXCAVATION OF 20CS45:

The present study results from the recent sale of the Stork property to neighbors and the willingness of the new landowners, Mr. and Mrs. Hilton, to grant the MDOT (and the WMU research team) access to that portion of the ridge lying north of US-12 where the presence of prehistoric cultural material had been initially recorded in 1979. Although surface visibility in the fallow field occupying the north ridge remnant was minimal at the time of our fieldwork on 1-2 Nov 86, casual observations of lithic debris and FCR from across the entire landform clearly indicate that 20CS45 here extends beyond the expanded MDOT ROW (Fig. 2).

Be that as it may, the focus of our activity on this occasion was the much smaller area of the zone of impact resulting from the proposed realignment of the approach to the nearby bridge over the St. Joseph River. This constituted a narrow strip of land along the north side of the highway from the intermittent stream valley on the east to the driveway leading to the former Stork residence

Fig. 2


STORK SITE (20CS45)
CASS CO., MI
Approximate site limits
Driveway
Unnamed
stream
N
0N,0E
F-1
F-2
F-3
PROJECT LIMITS
US-12
US-12
SHOVEL TEST
DATUM
TEST SQUARE
1981 RP
FEATURE
Scale (m)
0
5
10

on the west, a distance of 57 m, and extending back from the existing ROW about 12.6 m to the north. In aggregate, the research area of this study comprises a mere 720 m^2.

Our work at 20CS45 commenced with the establishment of a grid, with the datum (0N, 0E) being located 7.5 m N and 10.0 m E of the grid TBM #2 established for the Phase II program of research that was undertaken by RAI personnel in 1981 (Myers 1981: 12-14). Inasmuch as our grid was laid out so as to parallel the existing US-12 ROW, and the highway here trends slightly south-of-west, grid N is approximately 7^{o} west of magnetic N (Fig. 2).

Following establishment of the project grid, the field team was to have undertaken a controlled surface colllection of the 720 m^2 study area. However, surface visibility was such that this aspect of the work plan had to be abandoned. Rather, a general surface pickup was performed, resulting in a "grab sample" that consisted of only six cultural items. These items, together with four other pieces collected from elsewhere on the ridge crest, are listed and described in Table 1.

Without good surface indicators to guide us, the field team set about the task of shovel testing the study area. Two east-west transects (i.e. lines of survey) spaced 5 m apart were established to systematically probe subsurface deposits within the limits of the study area, with 30-cm shovel tests being placed along each transect at intervals of 5 m. Each shovel test was excavated through the plow zone and at least 20 cm into the underlying clayey subsoil prior to backfilling following examination of the soil extracted from and the profile exposed in each shovel test. The locations of 22 shovel tests are shown in Fig. 2, and the single flake recovered

TABLE 1

Cultural material from WMU's phase II testing of the Stork site.

Surface Collection

1-bifacial blank of Burlington chert
1-core fragment
1-utilized flake of Burlington chert
4-primary thinning flakes
2-secondary thinning flakes (one is of Burlington chert)
1-piece of lithic shatter

Shovel Tests

ON, 15E

1-primary thinning flake

Excavation Units

Test Square 1 (1S, 5E)

5-primary thinning flakes
1-piece of lithic shatter
1-square cut nail
1-piece of melted glass

Test Square 2 (1S, 15E)

1-biface of an unidentified chert
2-primary thinning flakes
1-piece of lithic shatter
1-nail

Test Square 3 (1S, 25E)

4-primary thinning flakes (one of Burlington chert)
2-secondary thinning flakes (one of Upper Mercer chert)
1-nail

Test Square 4 (1S, 35E)

1-primary thinning flake
2-secondary thinning flakes
2-pieces of lithic shatter
1-piece of historic shelledge stoneware

Test Square 5 (1S, 45E)

4-primary thinning flakes

Table 1, cont.

Test Square 6 (8S, 40E)

1-utilized flake
7-primary thinning flakes
1-secondary thinning flake
1-nail

Test Square 7 (8S, 30E)

5-primary thinning flakes
3-secondary thinning flakes (two of Burlington chert)

Test Square 8 (8S, 20E)

2-primary thinning flakes
2-secondary thinning flakes of Burlington chert

Test Square 9 (8S, 10E)

2-primary thinning flakes
1-secondary thinning flake

Test Square 10 (5S, 5E)

1-decortication flake

Test Square 11 (5S, 15E)

2-secondary thinning flakes

Test Square 12 (6S, 25E)

3-secondary thinning flakes
1-nail

Test Square 13 (6S, 21E)

1-primary thinning flake
2-secondary thinning flakes

Test Square 14 (6S, 28E)

1-unidentified stemmed projectile point
3-primary thinning flakes (one of chalcedony)
2-secondary thinning flakes

Test Square 15 (8S, 27E)

3-secondary thinning flakes

Test Square 16 (6S, 29E)

5-primary thinning flakes
9-secondary thinning flakes

Table 1, cont.

Test Square 17 (1.5S, 15.5E)

no cultural material

Features

Feature 1 (S 1/2)

1-primary thinning flake

prior to our having abandoned this strategy is also listed and described in Table 1.

Having concluded both the surface collecting and shovel testing phases of the work plan, the research team set about the task of extending the grid so that we might lay out a series of 1 X 1 m excavation units. The display of test squares shown in Fig. 2 reflects both a systematic aligned and judgement sample of 17 units located across the crest of the ridge. In total, 16.75 m^2, or 2.3% of the 720 m^2 study area, were excavated during the two days of fieldwork. Had we not encountered some cultural features that required considerable time to excavate and evaluate, the total area excavated would undoubtedly have been greater.

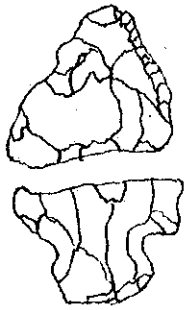
Each test square was excavated using standard data recovery procedures. Since all fieldwork was undertaken in what formerly had been cultivated field, the plow zone was removed as a single unit or level. The soil was sifted through 6 mm mesh screen to facilitate the recovery of cultural items. Upon reaching the base of the disturbed zone, the floor of the test square was carefully scraped with shovel and trowel in an effort to discern any soil changes (i.e. staining attributable to either color or textural differences with the surrounding subsoil) that might indicate the

presence of a cultural feature extending below the depth to which the plow had penetrated. In the event that no suspicious stains were observed, the excavation team took depth measurements and terminated the unit, but not before probing the floor with either a shovel or our Stam soil tester for an additional 30-40 cm to ensure that good contact with culturally sterile subsoil had been made.

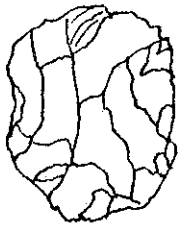
Although lacking context, the plow zone in 16 of 17 test squares did contain 81 prehistoric cultural items and seven objects of historic origin (Table 1). Of the prehistoric pieces, the vast majority are flakes representing various stages in the lithic reduction process. However, a stemmed projectile (Fig. 3, A) of probable Archaic affiliation was recovered from Test Square 14, and a biface (Fig. 3, C) was found in Test Square 2. Together with the utilized flake from Test Square 6 and the bifacial blank of Burlington chert (Fig. 3, B), core fragment, and utilized flake of Burlington chert from the surface collection, these constitute the only artifacts recovered during our research program.

At the base of the plow zone in Test Squares 2/17, 9, and 14, excavators did observe soil staining suggestive of remnant features. In each case, upon closer inspection, designation of a cultural feature seemed appropriate; at which point the stain was assigned a feature number and treated as an excavation unit. Initially, the feature was drawn and photographed in plan view. Then it was cross-sectioned in order to permit drawing and photographing of the feature profile to illustrate the depositional history and determine the probable function that it served. The soil (fill) extracted during profiling was removed by trowel and sifted through

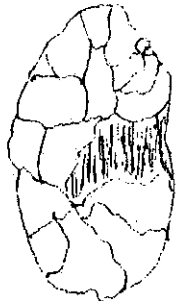
Fig. 3



A



B



C

ARTIFACTS RECOVERED

(20CS45)

Drawn to Scale

Three artifacts recovered during the phase II study.

the collection screen. That portion of the feature remaining after cross-sectioning was treated in similar fashion, but with a sample of the fill being collected beneath the screen for removal to the laboratory at WMU and subsequent processing by flotation to maximize the recovery of any small-scale remains that the fill might contain. The three features that were defined by excavators at the Stork site are illustrated in cross-section in Fig. 4 and are described below. The contents of features are summarized in Table 2.

Feature 1

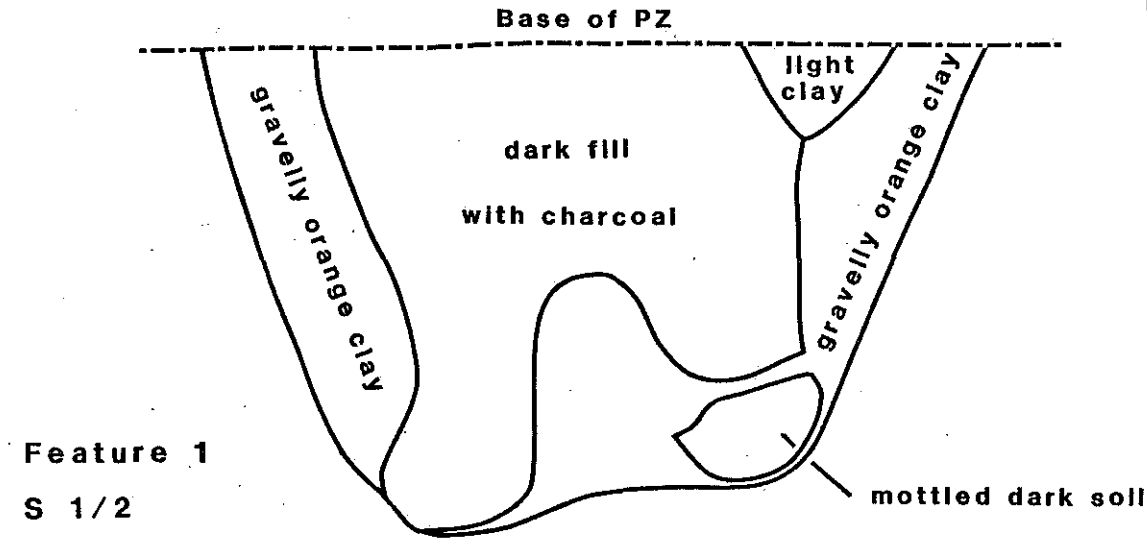
At the base of the disturbed zone in Test Square 2/17 there occurred a circular stain 63 cm in diameter and featuring a dark brown core fringed by a ring of orange (oxidized?) soil. The core was heavily mottled with flecks of charcoal, but no other organic materials were observed. Cross sectioning revealed an irregular fill unit flanked by orange clay along both sides and at the base of the pit. A patch of light colored clay appeared to be not too dissimilar from ash in color and consistency. Maximum depth below the base of the plow zone is 43 cm. The 18 l of pit fill floated contained 4.04 g of carbonized plant material, including pine charcoal, the shell of black walnut and acorn, and some unidentified seed fragments. This feature is probably a food processing facility.

Feature 2

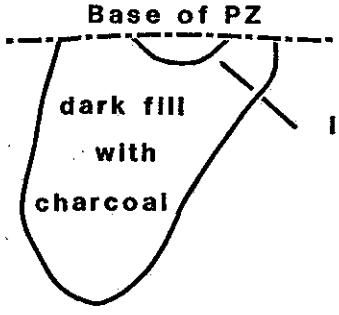
This small irregular pit was observed at the base of the disturbed zone in Test Square 9. It is only 17 cm in diameter and 22 cm deep, and aside from a small pocket of ash-like clay in the center and at the top of the recorded profile the fill is a homogeneous dark brown soil mottled with charcoal. Carbonized plant food

STORK SITE (20CS45) FEATURES

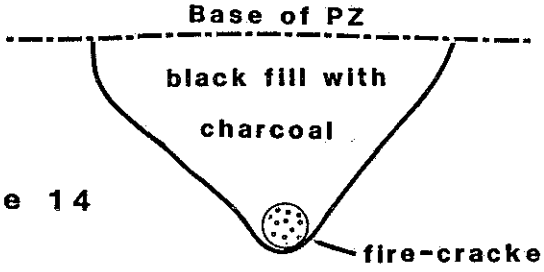
Fig. 4



Feature 1
S 1/2
Test Square 2



Feature 2
S 1/2
Test Square 9



Feature 3
N 1/2
Test Square 14

SCALE
10 cm

TABLE 2

Contents of flotation samples extracted from three features on the Stork site.

Lot	Feature (provenience)	Sample volume (l)	Cultural/Ecological Contents weight (g)/count/identification			Comments
1	1 (N 1/2)	8	2.38	117	unid. wood charcoal	The fill from this sample was screened prior to floating.
			.01	4	unid. seed fragments	
			.09	5	*Quercus* spp. nutshell	acorn shell
2	1 (S 1/2)	10	1.30	63	unid. wood charcoal	
			.15	1	*Pinus* sp. charcoal	probably *P. strobus*, white pine
			.11	1	*Juglans* sp. nutshell	probably *J. nigra*, black walnut
3	2 (N 1/2)	6	4.90	77	unid. wood charcoal	
			.03	2	*Quercus* spp. nutshell	
4	3 (N 1/2)	8	2.55	39	unid. wood charcoal	All of the wood charcoal in this sample is probably pine (*P. strobus*).
			.34	2	*Pinus* spp. charcoal	
			.12	17	unid. nutlet	very fragmentary
			.18	4	chert flakes	resharpening or retouch specimens

residues consist of carbonized acorn nutshell fragments. The six liter float sample produced even more wood charcoal (4.90 g) than was recovered from Feature 1, but nutshell, volumetrically speaking, is somewhat less evident. Similarities in fill contents, if not in feature morphology, may argue for a food processing function for this small pit as well.

Feature 3

The very regular shape of this conical feature sets it off from the others. This pit is 28 cm in diameter and 17 cm deep. The fill was observed to be very black and greasy to the touch, and it was heavily mottled with pine charcoal. In addition to charcoal, the flotation sample produced very fragmentary pieces of an unidentified nutlet and four resharpening or retouch flakes. A fifth piece of debitage was picked from feature fill by hand. Finally, at the very base of this pit there occurred a heavily oxidized piece of fire-cracked rock. It may also be noteworthy that the projectile point found in Test Square 14 was recovered from the base of the disturbed zone immediately above this pit. Again, a food processing function might be the most appropriate interpretation of the use to which this pit was put by the site's occupants.

All observations made during WMU's Phase II excavation of the Stork site have been recorded in the project log maintained by the Field Supervisor and also entered on standard test square, feature, and analytic sample forms kept by the team of excavators responsible for each unit and/or feature. All material remains, with the exception of pieces of FCR, were placed in appropriate containers and returned to the laboratory in the Department of Anthropology for

cleaning, cataloguing, and analysis by the Field Supervisor, Mr. De Fant. De Fant and the Principal Investigator, Dr. Cremin, examined and identified the contents of flotation samples, and Mr. Quattrin, one of our able Field Assistants, prepared the illustrations of the artifacts shown in Fig. 3. Finally, a photographic log was maintained to document our excavation activity as well as to enhance the record of those features that were encountered.

RESULTS OF THE PHASE II EXCAVATION:

The Stork site (20CS45) occupies an estimated 7200 m^2 of the crest of a ridge lying immediately west of a small intermittent stream that is tributary to the St. Joseph River. Today, this landform is bisected by US-12, and it seems quite certain that the road cut has severely impacted the site. Through a combination of surface collecting, shovel testing, and excavating 17 1 X 1 m test squares, the WMU research team has recovered data confirming the prehistoric occupation(s) noted earlier by Garland (1980) and Myers (1981). To the 29 cultural items collected during the Phase I and earlier Phase II investigations of this site, our research program has added 98 pieces and three cultural features. However, the only clearly diagnostic artifact from all work conducted to date remains the fragmentary Paleo-Indian fluted point reported from the surface collection made by the Phase I survey team in 1979 (Garland 1980).

Of the total of 127 cultural items from the Stork site, bifacial implements are represented by nine specimens; one tool is a denticulate graver/scraper; one specimen is a remnant core; and three are flakes evidencing utilization. The remaining pieces are blocky and/or waste flakes (N=17); decortication flakes (N=3); and thinning,

resharpening, or retouch flakes (N=93). While these data do suggest that the entire range of lithic reduction is in evidence at Stork, clearly the predominance of the last category of debitage, represented by 93 specimens aggregating 72.3% of all lithics recovered, attests to the importance of activities relating to the final stages of tool preparation and refurbishing on the site. As a final note, it is also perhaps significant that a mere 10 lithic specimens comprising the WMU Phase II collection are of exotic or nonlocal materials. Burlington chert is represented by eight pieces, while Upper Mercer chert and chalcedony are represented by single occurrences in the assemblage. This observation contrasts markedly with the results of recent research at the New Buffalo Weigh Station site in Berrien County (Cremin 1986) and current survey activities directed by the author in the St. Joseph River valley a short distance upstream from the Stork site in St. Joseph County.

That our Phase II program of research at 20CS45 resulted in the recording of undisturbed archaeological context in the form of three cultural features has been gratifying from a methodological standpoint. However, the small pits that excavators defined and their contents provide little in the way of information useful in assessing site function and potential significance. From the perspective of feature data and, for that matter, cultural debris density over the site, it is not really possible to expand upon the interpretation offered by Myers (1981: 21) that the Stork site represents a temporary special purpose encampment. Considering all the information now available to us, 20CS45, while providing very minimal evidence for a Paleo-Indian occupation, is in all probability an Archaic campsite. And from the perspective of plant residues

retrieved through flotation from the three feature contexts, it would appear that autumn occupation represents the best estimate of site seasonality that can be derived from the scanty indicators in the Stork site data set. This interpretation is also consistent with the exposed nature of the site on the crest of a prominent ridge situated on the valley floor, the absence of any indicators for the presence of substantial structures in our limited excavations, and, of course, the natural food potentials which would have been afforded the site's occupants in the resource zones surrounding the Stork site.

Parenthetically, some of the data derived from flotation of feature fill point to an inconsistency when comparing presettlement forest composition based on the GLO survey fieldnotes and plats presented earlier in this report and the environmental context of the site at that time when its occupants put the pit features into use. There are no data in the GLO records to indicate that oak-pine forest was represented in this segment of the St. Joseph River valley; albeit similar documents show this association to have been present in areas downstream of the project and in closer proximity to Lake Michigan (Brewer 1979). Yet Mr. De Fant has positively identified pine charcoal (probably Pinus strobus, white pine) in one flotation sample from Feature 1, together with the residues of an unidentified wood and nutshell of Juglans sp. Moreover, all the wood charcoal in the sample from Feature 3 is probably attributable to this same species. Clearly, the occupants of this site had access to pine wood for use as fuel in the immediate vicinity of 20CS45.

SIGNIFICANCE OF OBSERVATIONS:

The WMU Phase II investigation of the Stork site (20CS45) has through the program of research discussed above resulted in the recovery of additional cultural material. However, fieldwork conducted on 1-2 Nov 86 has not resulted in the recovery of data in quantities sufficient for elucidating site function; albeit we did record undisturbed feature contexts on three occasions. Moreover, in the absence of any diagnostic artifacts from our excavations, we are unable to expand upon earlier suggestions with respect to the site's cultural affiliation and/or temporal placement. Aside from the Features that we recorded and the addition of 98 cultural items to the site inventory, it is difficult to argue that we really accomplished anything more than had been achieved during prior investigations of the Stork site.

Certainly, our controls were most adequate to the task of collecting appropriate information for National Register evaluation of this site. But the requisite data were not forthcoming! In the final analysis, we can only conclude that the prehistoric occupation(s) of the Stork site was such that little information has been preserved over time or, alternately, that the combination of cultivation and highway construction have so impacted the site and the landform that it occupies that little of potential significance remains for the archaeologist to recover, analyze, and interpret.

Perhaps it is most appropriate to conclude that in all probability the prehistoric occupation(s) of the Stork site was in the main a seasonal and rather task specific one. That is, the prehistoric community represented by 20CS45 was characterized by intermittent and extensive rather than long term and intensive

occupation of this ridge crest on the valley floor. As such, it is perhaps best viewed as reflecting a shifting pattern of settlement between similar landforms or ridges on the valley floor and other suitable site loci in the adjacent uplands during the seasonal exploitation of select or target resources that in terms of food value, abundance, or accessibility were harvested from more than one location by the human group(s) occupying this segment of the St. Joseph River valley.

RECOMMENDATIONS:

In light of the findings derived from this and earlier investigations of the Stork site in Porter Township, Cass County, Michigan, it is quite apparent that additional archaeological study (Phase III mitigation) is not warranted. There is nothing to suggest that 20CS45 is eligible for listing in the National Register of Historic Places. The loss of site data that may result from highway realignment proposed by the MDOT will have only a negligible impact on future research problems and objectives as these relate to furthering knowledge of the prehistoric occupation of the general area of the Stork site.

REFERENCES CITED:

Brewer, R., compiler

1979 Vegetation of southwestern Michigan at the time of settlement. Department of Biology, Western Michigan University. Kalamazoo.

Cleland, C.E.

1966 The prehistoric animal ecology and ethnozoology of the upper Great Lakes region. Anthropological Papers of the Museum of Anthropology, University of Michigan 29.

Cremin, W.M.

1986 Archaeological investigations at the New Buffalo weigh stations, Berrien county, Michigan. Department of Anthropology, Western Michigan University, Technical Report 17.

Garland, E.B.

1980 Archaeological site examination of the US-12 Mottville bridge and approaches replacement project, St. Joseph and Cass counties, Michigan. Department of Anthropology, Western Michigan University, Technical Report 2.

Hodler, T.W., R. Brewer, L.G. Brewer, and H.A. Raup, compilers

1981 Presettlement vegetation of Kalamazoo county, Michigan. Department of Geography, Western Michigan University. Kalamazoo.

Mathews, A.

1882 History of Cass county, Michigan. Waterman, Watkins, and Company, Chicago.

Myers, R.J.

1981 Phase II archaeological investigation at the Stork site. Resource Analysts, Inc., RAI-1464. Submitted to the Michigan Department of Transportation and the Michigan History Division, Michigan Department of State.

Rogers, H.S.

1875 History of Cass county, from 1825-1875. W.H. Mansfield, Cassopolis.