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Howard D. Winters

AN ARCHAEOLOGICAL SURVEY OF THE WABASH VALLEY IN ILLINOIS

REPORTS OF INVESTIGATIONS, NO. 10

Illinois State Museum
AN ARCHAEOLOGICAL SURVEY OF THE WABASH VALLEY IN ILLINOIS

by

Howard D. Winters

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Springfield, Illinois
1967
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FOREWORD TO THE REVISED EDITION

SOME MINOR CHANGES have been made for this printing and a number of typographical errors corrected. Only the section on the Allison Culture has been considerably revised since much more information has become available on what was originally termed the Allison Complex. This new information has resulted from excavations by Dr. James Kellar at the Mann Site in Posey County, Indiana, and from excavations by Messrs. Denzil; Orlin, and Lynn Stephens at the Stoner Site in Crawford County, Illinois.

Howard D. Winters
Charlottesville, Virginia

August 1966

FOREWORD

IN 1961 HOWARD D. WINTERS AND DENZIL STEPHENS were engaged by the Illinois State Museum to make archaeological excavations of three shell middens of the Riverton Culture in the central Wabash Valley. The report of this investigation was completed in 1962 and is scheduled for publication at an early date. The present paper is an analysis of a subsequent archaeological survey of the Illinois side of the Wabash made by Winters in 1962 and enhanced by the results of Stephens' earlier surveys in the area. The central Wabash has been one of the last major unknown archaeological areas of Illinois and, since more survey and excavations are planned for 1963, it seemed well to mimeograph the present edition.

On completion of this report, Mr. Winters joined the teaching staff of the University of Virginia. I must therefore acknowledge the contribution of Dr. Robert L. Hall, Curator of Anthropology, Illinois State Museum, who kindly undertook the task of designing and editing this report. Additional thanks also go to Orvilla M. Robinson, Museum Librarian and Registrar, for critically reading the manuscript and to Charles W. Hodge, Museum Photographer, for photographic reductions of all illustrations.

Joseph R. Caldwell
Head Curator of Anthropology
Illinois State Museum

March 1963
ACKNOWLEDGMENTS

WE SHOULD LIKE TO EXPRESS our deepest appreciation to Mr. Denzil Stephens, a member of the Council for Illinois Archaeology, of Annapolis, Illinois. His thorough surveying in Clark, Crawford, and Lawrence counties in recent years provided invaluable data, and his identification of major characteristics of the La Motte Culture greatly simplified both field work and laboratory analysis. Were the results of such intelligent and dedicated reconnaissance available everywhere, the work of the archaeologist would be both easier and more productive. Mr. Stephens also provided a number of specimens for illustration for the final report from important sites from which adequate collections could not be obtained. Among these were: the gift of an Embarrass Simple Stamped jar from Site Cw282 and sherds from the Townsend Site (Jp117) and the Dhom Site (Jp135); the loan of sherds from the North York Site No. 1 (Cl188), the Musgrave Site (Cw205), the Lowe Site (Cw107), the Minnow Slough Site (Cw164), the Purgatory Swamp Site (Lw95), and the Gamble Site (Lw11); and the loan of fluted points from the Colliflower Site (Cw360), and the Heathsville Site (Cw192). In addition, Mr. Stephens permitted the analysis of material in his survey collections from the Lowe Site (Cw107), Stoner Site (Cw109), Purgatory Swamp Site (Lw95), Minnow Slough Site (Cw164), Fox-McCarthy Site (Cw125), Chenoweth Site (Cl185), North York Site (Cl188), Barbee North Site (Cw352), Barbee South Site (Cw364), and Etchison Site (Cl128 and Cl129).

We also wish to express our thanks to Mr. Lynn Stephens for his capable work as field assistant during most of the survey period; to Mr. Orlin Stephens for the gift of artifacts from the Stoner Site (Cw109), the Minnow Slough Site (Cw164), and the Barbee South Site (Cw364); to Dr. Paul Parmalee of the Illinois State Museum for identification of shell and bone; and to Mr. James Porter of the Museum of Southern Illinois University for analysis of thin-sections of sherds. Dr. Joseph Caldwell, Dr. Robert Hall, and Mr. James Brown of the Illinois State Museum all provided valuable suggestions and criticism. The author wishes to absolve these gentlemen, however, from any responsibility for errors in interpretation, either factual or theoretical.

Mr. Donald Mefford of Lawrenceville, Mr. Robert Baumgart of Mt. Carmel, and Mr. Everett Lambert of Keensburg all provided valuable guidance and information on sites in their areas.

Mr. John Henry provided information on the Albee Complex and arranged for the loan of specimens from the Catlin Site in Vermillion County, Indiana, by Mr. Thomas Razmus of Georgetown, Illinois.

Our special thanks go to Miss Faye Berry, Assistant in Anthropology at the Illinois State Museum, for the care and attention she has given to the preparation of maps, illustrations and stencils used in this report.

December 1962

H. D. W.
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Figure 1

CENTRAL AND LOWER WABASH RIVER VALLEY

SPRINGFIELD PLAINS

MT. VERNON HILL COUNTRY

NEW SITES 1962 SURVEY

BOUNDARY BETWEEN SPRINGFIELD PLAINS & THE MT. VERNON HILL COUNTRY
INTRODUCTION

IN THE FOLLOWING REPORT a summary is presented of the results of a survey undertaken by the author for the Illinois State Museum from 20 March to 15 May 1962. Operations were limited to the Illinois side of the Wabash Valley proper from the Indiana state line to near Carmi, Illinois, a distance of approximately 100 miles. In addition, several major tributaries were partially surveyed for a distance of five to ten miles from their junction with the Wabash. The tributaries included Mill Creek, Hutson Creek, Sugar Creek, No Business Creek, the Embarrass River, La Motte Creek, Raccoon Creek, Crawfish Creek, and Bonpas Creek. Principal tributaries remaining to be checked in the survey area include Big Creek in Clark County and the Little Wabash River.

Before discussing the survey results, we should like to comment on some of the problems and procedures suggested by survey operations.

Survey Records. Although a very large number of survey records has been accumulated in Illinois through the years, about 10 per cent of the site records used in the present survey were worthless because of faulty or inadequate location data and a dearth of description. These records should probably be eliminated from survey files since they do nothing more than occupy a site number and there is no hope of their relocation.

On most of these sheets, sites were recorded either by quarter-section or a quarter of a quarter-section. Unless very good descriptions or maps accompany such location data or the site is a very unusual one with distinctive features, the site located only within 160 or 40 acres can rarely be relocated, particularly when a major river valley is involved with its multitudes of small camps and other sites. A minimal location, in terms of sections, should be a quarter of a quarter of a quarter-section, and even such placement within a ten acre area can be ambiguous if small camps are being recorded. Sites should also be recorded on a suitable map (such as the USGS 15-minute and 7.5-minute series), preferably at the time of discovery of the site. County road maps or plat books can sometimes be used, but these do not usually provide adequate physiographic data for accurate location of the site. These latter items can be valuable technical aids for site recording, however.

Another 80 per cent of the survey records proved adequate in so far as location was concerned but should be extensively revised to provide the sort of cultural and scientific data which is needed for use in archaeological research.

About 10 per cent of the survey records could be considered useful research documents without an absolute necessity of revisiting the site area. If survey records are prepared with the aim of research in mind instead of a perfunctory location of an area which was somehow involved in prehistory, these records can become an invaluable adjunct to many types of research projects.

Survey Procedures. Site surveying is at an optimal productivity from about the end of March to the middle of May in the Wabash. Prior to this period, plowed areas are limited; and, following this period, agricultural activities keep the soil too disturbed to permit location of many sites and the satisfactory sampling of the contents of sites. Expressed in terms of costs, expenses assignable to site location averaged around $5.00 per site during the earlier portion of the survey but had risen to around $15.00 per site during the last two weeks of the survey period. We suspect that the cost would have been prohibitively high after the crops had achieved considerable growth.

A second period suitable for site surveying would begin around the middle of October and last until perhaps the middle of November, following fall plowing and lasting until the fall rains make surveying extremely difficult.

For an extended survey period in the spring, it would be best to begin operations in the lower Wabash, gradually moving north as spring plowing advanced.

With respect to site recording, we urge the location and description of all areas which show signs of prehistoric activity. In terms of the solution of archaeological problems, a simple gathering camp, with its numerous manos, metates, and little else, is quite as important as a large village with its often thin and mixed cultural deposits left by thousands of years of occupation.

We also urge the division of seemingly continuous occupation areas into smaller units on the basis of natural features such as knolls or simple arbitrary units. Such divisions of the site often reveal areas assignable to quite different cultural manifestations or activities.
Adequacy of the Survey. Rarely can an adequate survey of an area be completed within a single year. We estimate that about 90 per cent of likely locations noted in the present survey could not be examined because of heavy pasture cover, wheat stubble, weeds, or flooding of the lowlands. Thus, we suggest that a survey in any given area of the Midwest should cover a three-year period, by which time about 30 per cent of possible site locations should have become available.

Survey Equipment. The use of paper bags for survey work has proved very frustrating. Constant rebagging of materials was necessary, with the paper bags sometimes not even surviving the distance between the site and the car on a rainy day. In view of the cost of recovery of material during a survey, it would be advisable to insure the safe return of the material by using cloth bags. While the initial investment in cloth bags is much greater than for paper bags, the former can be re-used and the safety factor should more than compensate for the greater cost.

In addition to the equipment normally provided for a survey, we should recommend the addition of an Edsclor Range Finder and binoculars. The former item has an accuracy within 2 per cent up to 200 feet and would be a valuable adjunct to quick preparation of sketch maps. The latter item would have saved some rather fruitless half-mile trips to fields covered with wheat stubble. Both items would lead to reduced expenses in site recording and greater productivity through the time saved.

SURVEY RESULTS

A TOTAL OF 175 SITES were recorded from the 1962 survey with mound groups counted as single sites. From these sites a total of 4355 sherds and 2125 stone, shell, pottery, and bone artifacts were collected. A full range of cultures was covered, from Paleo-Indian to sites that may be protohistoric. Coverage was very thorough for the Wabash Valley in Clark, Crawford, and Lawrence counties, partial for Wabash County, and very spotty for White County. No reconnaissance was attempted in Gallatin County. However, previous surveys by the Illinois State Museum (ISM) in 1950 covered portions of the latter two counties, and Dr. Melvin L. Fowler kindly permitted examination and analysis of survey collections from Wabash, White, and Gallatin counties at the Museum of Southern Illinois University (SIU) collected by Mr. James E. Gillihan. The Southern Illinois University surface collections include material from such important sites as the Duffy Site (coded as ISM number G28 and SIU number 25B2-4); the Pepper Site (ISM Wh93, SIU 25B2-3); Bennett's Wabash Site (ISM Wh92, SIU 25B2-2); the Dunkel Site (ISM W71, SIU 23C1-2); the Gamble Site (ISM Lw11, SIU 23A4-1); and the M. G. Klutz (Weber) Site in Gibson County, Indiana.

In addition, records were available through the Illinois Archaeological Survey (IAS) of an earlier survey by Vreeland and Kinietz (Kinietz 1933) and a limited reconnaissance in Lawrence, Crawford, and Clark counties by William J. Beeson (Beeson 1952). Also in the Illinois State Museum files are numerous site records provided by surveys of Denzil Stephens in the latter counties.

Supplementing the various survey records are publications on the excavations at the Hubele Site and the Wilson Mounds (Neumann and Fowler 1952) and the Gamble Site (Gillihan and Beeson 1960) in Illinois, and at the Albee Mound in Indiana (MacLean 1931). Also of help were the surveys published by the Indiana Historical Bureau for Vigo County (Helmen 1952), Gibson County (Dragoo 1955) and Posey County (Adams 1949), and the general summary of Indiana prehistory by Lilly (1937).

In the following summary, we have attempted to synthesize as many data as possible into areal distribution patterns. Thus the organization of the report overrides county and state boundaries in order to better present prehistoric culture areas and complexes.
CLASSIFICATION AND ANALYSIS

UNDOUBTEDLY OUR CLASSIFICATORY PROCEDURES will seem loose. They are intentionally so. It seems better to utilize flexible units which can be modified as needed than to construct or follow prematurely a rigid and internally logical system. We have used the term tradition to indicate very large units of shared behavioral patterns which for the present report are defined largely in terms of material culture.

In general, we have been guided by Caldwell’s usage of the term tradition (Caldwell 1958). Caldwell states (p. 3):

“The concept of tradition, becoming increasingly useful in Americanist archeology, is in the present view another specific kind of pattern. In a general sense, any culturally transmitted pattern of action seen through time is a tradition, with or without an archeologically preserved product, or it may be action with no material product at all. In our special use of this term we shall regard a culture-historical tradition as a main-line, areally based continuity of what would theoretically be a cultural whole. In some cases one horizon within a tradition might represent the culture of a single people or ethnic group. More often it would include several ethnic groups which were culturally pretty much alike. What is always true of the tradition as we here consider it, however, is that its space-time limits mark the effective contrast with neighboring traditions. In other words, the boundaries are drawn to represent the maximum usefulness in studying traditions in terms of each other.”

Traditions, in turn, have been divided into phases, based upon major shifts in cultural content. Phases have a decided advantage in that they avoid the dilemma of the tripartite temporal terminology, which inevitably gets caught up in such absurdities as “Early Late Woodland” as the need for new sequential distinctions are recognized. At the same time, we have retained such terms as Early, Middle, and Late Woodland to serve as informal time divisions for the Midwest. However, we should like to express a certain amount of distress about the increasingly rigid application of the terms as absolute classificatory units and to note with approval Caldwell’s stricture on their usage (Caldwell 1962).

Of course, traditions and phases themselves often contain a number of regional variants through space and time. When a number of sites have assemblages so similar within a limited temporal and geographic range that direct and common sharing of behavioral patterns are implied, we have used the term culture (i.e., regional variant within a tradition). In respect to the survey, the term culture has been reserved for clusterings of sites with sufficiently unmixed material that a large number of items within such diversified functional categories as general utility tools, weapons, fabricating and processing tools, woodworking tools, domestic implements, ornaments, ceremonial equipment, digging tools, and recreational equipment could be assumed to belong together. When only a few artifacts could be shown as occurring consistently together, the term complex has been used with the assumption that, eventually, sufficient data will become available to relate the complex to a culture.

No attempt has been made at establishing any sort of quantitative qualifiers for classificatory procedures. If the data from survey operations is not overwhelmingly suggestive of classificatory position, quantification would probably provide only spurious orders of classificatory relationship.

On file at the Illinois State Museum are full records of analyses of materials from each site. It had originally been planned to include these records as an appendix with this report, but their considerable length would have made the report prohibitively long and delayed publication of the preliminary statement on prehistoric occupations of the Wabash. We felt that it would be better to omit the raw data rather than to delay the report.

Most of the terms used in the classification of artifacts are already familiar, but a few are new. Some common terms are also used in a more restricted sense.

One category not previously published in the Midwest is that of shredder. These are irregular flakes or cores which have one steeply keeled face chipped to a straight, toothed edge. Presumably
they would have been used for tearing raw materials of some sort into strips of fibers. These implements are very common in Illinois and are found in sites ranging from Archaic to Mississippian (Fig. 22A).

Another category we have termed strike-a-lite. These are small chert squares or rectangles (Fig. 22C) which show along one of the edges numerous hinge fractures resulting from repeated blows. We doubt that they would be very effective as choppers, in view of their small size, but they would serve admirably for producing sparks.

The term hammerstone is reserved strictly for implements showing usage only as hammers. This restriction of usage is based upon a detailed study of some 2000 of the pitted and unpitted pebbles which normally are called hammerstones in Illinois and elsewhere. There is no longer any doubt for us that most of these are manos, and that a "pure" hammerstone is a comparatively rare item. The hammering usage observable on the edges of manos is probably the result of pounding seeds, nuts, roots and the like prior to grinding on a metate with a mano. Certainly, pestles, which are undoubtedly grinding implements, show such hammer usage on the poll.

 Blades (knives) have been distinguished from projectile points on the basis of the chipping of the edges. Blades have wavy, saw-like edges produced by the removal of alternate flakes from the two faces of the implements. Projectile points have edges chipped to a straight line. Of course, many points have edges which have been reworked into knife edges. (Lamellar flake blades represent an exception to the foregoing statement.) These distinctions between blades and points have been based upon the results of an analysis of 9000 such implements from the Cache River drainage.

 The term backed blade has been used to refer to lanceolate, ovate, rectanguloid, and triangular forms which have one side left unthinned as a gripping surface, with deliberate crushing of the edges of the unthinned side a common feature. Backed blades are plentiful on Illinois sites in contexts ranging from Archaic to Mississippian and are generally referred to as cores, choppers, blanks, or rejects. However, the presence of the traditional chipping techniques and use-patterns characteristic of blades would argue against placement within any of the latter categories, which in themselves are quite legitimate classificatory groupings. Backed blades are generally included with the latter as the result of rather subjective classificatory procedures based upon form alone or crudeness of appearance.

 Names of projectile point types conform, generally, to terminology developed for the Cache River Valley in southern Illinois (Winters, n.d., a). Where possible, previously published or commonly circulated names have been used (Scully 1951; Ford and Webb 1956; Suhm and Krieger 1954; Bell 1958). Some common names have been dropped when these were found to be based upon inadequate data, such as classification on the basis of point outline or base shape alone.

 It has been necessary to create two new names for description of certain Archaic points common in the Wabash Valley. These are Bristol Diagonally Notched and Barbee Corner Notched. Both should be considered provisional types until adequate data can be secured from a larger sample and from stratified contexts. Formal definition of these provisional types will be delayed until then.

 Included as Appendix I is a formal statement of the simple-stamped, check-stamped, and cord-marked pottery of the Emarrass Ceramic Series, which summarizes the work of Dr. Edward V. McMichael of the West Virginia Geological and Economic Survey and the author of this report on the characteristics, origins, and relationships of the distinctive ceramics of the La Motte Culture of the Wabash Valley.

 Appendices II and III present provisional statements on two new "Late Woodland" types, Albee Cordmarked and Duffy Plain.

 In Appendix IV, some of the major attributes of Lowe Flared Base, the diagnostic projectile point of the La Motte Culture, are summarized.
CULTURES AND CULTURE AREAS OF THE CENTRAL
AND LOWER WABASH VALLEY

IN THE FOLLOWING SECTIONS, summaries of the prehistoric Wabash occupations are presented. Since the interpretation of these traditions, cultures, and complexes on the Illinois side of the Wabash is dependent in large part on data from surface collections rather than excavations, adequacy of definition will vary considerably. A further complication in the present analysis arises from the fact that many of the prehistoric occupations of the Wabash have no precise equivalents in contiguous areas of the Midwest, since the Wabash throughout prehistory was often linked culturally to the South rather than to the Midwest. Thus, with the exception of the Havana and Crab Orchard traditions, which are well known from excavations in other areas of Illinois, cultural definition has had to depend, primarily, on internal evidence from the Wabash Valley alone. Of course, the sizable quantity of published material on other areas of Illinois and Indiana has been useful in interpreting general cultural succession, since some traits are practically pan-eastern in their order of appearance.

A tentative sequence for the lower and central Wabash is presented as Table 1. Where survey results were inadequate for even preliminary definition of a cultural unit the term undefined has been used. We regret that so many new terms have been used in the Wabash Valley sequence, but we have seen no point in trying to force the distinctive Wabash Valley cultural manifestations into pre-existing classificatory systems, particularly since so many of the older classificatory units such as Hopewell, Baumer, Lewis, Raymond, Dillinger, and Weaver are badly in need either of re-definition or clarification.

Furthermore, the problem of southern cultural affiliation, which was mentioned in the first paragraph of this section, must be met when establishing a classificatory system for the Wabash. With the exception of the Havana Tradition and the Albee Complex, which have their closest ties to the north and the west, all of the prehistoric occupations of the Wabash either relate to the lower Ohio Valley (Faulkner and Thebes complexes of the Archaic, the Crab Orchard Tradition, the Allison Culture in part, the Duffy Complex, the Yankeetown Culture, and the Vincennes Culture in part) or to even more southern areas (Riverton Culture of the Archaic, the La Motte Culture, and the Murphy Complex). An exception to the foregoing statement, of course, would be the Clovis Tradition of Paleo-Indian, which has a very wide distribution in North America.

That such a salient of prolonged southern penetration into the Midwest should exist is an interesting problem in itself. Partial explanation may be offered on the basis of two known factors, one geographical and the other ecological. First of all, the Wabash flows from north to south in its lower and central portions, and empties into the Ohio not far from the confluences of the Cumberland and Tennessee with the same river. Thus, ready access from the south is provided by a practically direct route. Secondly, the biota of the Wabash Valley has many southern characteristics (Adams 1949; Helmen 1952; Winters and Stephens n.d.), perhaps providing a general environment more conducive to penetration by southern groups than other areas of the Midwest. Such factors fail to explain, however, why the La Motte and Riverton cultures are concentrated in the central Wabash near the prairie margins of the Springfield Plains, rather than in the lower Wabash which is typified by the rolling terrain of the Mt. Vernon Hill Country. Only much more reconnaissance on both the Illinois and Indiana sides of the valley and extensive excavations can provide the data needed for solving the enigma of the southern salient in the Midwest.

That physiography and vegetation have both been important determinants throughout the prehistoric occupations is borne out by the present reconnaissance and by previous excavations. With the exception of Paleo-Indian and the earlier Archaic occupations, the various occupations within the Wabash tend to be confined within rather small geographic areas which can be qualified by specific physiographic and environmental factors. For example, the Crab Orchard Tradition, the Duffy Complex, the Yankeetown Culture, and the Murphy Complex are concentrated in the lower Wabash in the Mt. Vernon Hill Country of the Central Lowlands Province, an area typified by the Western Mesophytic Forest, while the Riverton Culture, Havana Tradition, Allison Culture, La Motte Culture, the Vincennes Culture, and the Etchison Complex all have limited distributions on or near the
### TABLE I

**TENTATIVE CULTURAL SEQUENCE FOR THE CENTRAL AND LOWER WABASH VALLEY**

<table>
<thead>
<tr>
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<th>South Central Wabash</th>
<th>Lower Wabash</th>
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<td>Vincennes Culture</td>
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<td>La Motte Culture</td>
<td>Crab Orchard Tradition</td>
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<td>Allison Culture</td>
<td>Allison Culture</td>
<td>—Hopewellian Phase</td>
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<tr>
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<td>Havana Tradition</td>
<td>—Unnamed Phase</td>
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<tr>
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<td>Undefined</td>
<td>—Unnamed Phase</td>
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<td>Clovis</td>
<td>Clovis</td>
</tr>
<tr>
<td>9000</td>
<td>Tradition</td>
<td>Tradition</td>
<td>Unknown</td>
</tr>
<tr>
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<td>?</td>
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prairies of the Springfield Plains (see Figs. 7, 11, 15, 19). Such consistency of distribution of cultural remains over fairly small areas has, of course, been of considerable help in defining the prehistoric cultures of the Wabash through analysis of surface collections alone.

**PALEO-INDIAN OCCUPATIONS**

The presence of the Paleo-Indian Culture is attested for the Wabash by the finding of three fluted points of the Clovis type during the 1962 survey. Since the information on these fluted points has been published previously (Winters 1962C), we shall quote from a slightly revised version of that report.

"One of these (fluted points) was from Murphy No. 2 (ISM Cl229), a site located on a silty sand knoll with an elevation of about two meters above the surface of the T-1 of the Wabash River. Snyder Creek lies about 1/2 mile to the north of the site, and the Wabash River now occupies a channel about two miles east of the site. A second fluted point fragment was found on the Barbee South Site (ISM Cw364), which is on a clay knoll on the T-1 of the Wabash and immediately south of Sugar Creek. A fragment of a lanceolate point with heavy side grinding from the latter site may also be from a fluted point. A third point came from the Bunyan Site (ISM Lw270), which is on a sandy clay knoll on the T-1 of the Embarrass River about nine miles from the junction of the Embarrass and the Wabash.

"The specimen from Murphy No. 2 has heavy basal and side grinding and was fluted by the Clovis straight base technique. The basal fragment is too small to permit definite identification of form, but there is enough to suggest that the point was very slightly constricted toward the base. Local gravels were probably the source for the chert. The Barbee South point has straight, parallel sides with heavy side grinding. Since the base is missing, the fluting technique cannot be determined. An unusual feature of the blade is a light serration. The chert source was probably again the local Wabash River gravels. The Bunyan Site point has straight, parallel sides with light side grinding and no basal grinding. Fluting was accomplished by the Clovis straight base technique with only one side having been fluted. Fluting had been attempted on the other face, but an imperfection in the rather coarse chalcedony had prevented the successful fluting of the second face.

"In addition, Denzil Stephens has three fluted points in his Wabash Valley survey collections. One of these is from the Colliflower Site (ISM Cw360), which is located on a low, sand knoll on the T-1 immediately west of the Wabash River. Another Clovis point is from a clay upland area (ISM Cw192) near Heathsville, Illinois. The elevation is in excess of 30 meters above the T-0 of the Wabash. A third Clovis point is from a high clay ridge (ISM Cw394) about 3/4 miles north of the Embarrass River and 13 miles west of the Wabash in Honey Creek Township of Crawford County. Elevation of the ridge is in excess of 25 meters above the T-0 of the Embarrass.

"Mr. Stephens also reports the recovery of a Clovis point from ISM Site Cw366. The latter point came from a clay, upland outlier of the Bristol Hill mass, with an elevation in excess of 25 meters above the T-0 of La Motte Creek, which is about 3/4 miles north of the site. Fox Creek is about 1/2 mile east of the site, and the Wabash River is about four miles to the east. Another Clovis point is reported by Mr. Stephens as coming from the Sand Ridge Site in Sullivan County, Indiana. The Sand Ridge Site is on the T-1 of the Wabash on a sand knoll and has an appearance quite similar to that of Murphy No. 2 (ISM Cl229).

"The fluted point base from the Colliflower Site is white quartzite, while the fluted point from Cw192 is made from cream-colored Mississippian chert. Both have heavy basal and side grinding and were manufactured by the Clovis straight base technique. The specimen from Cw192 had two flakes removed from one face and a single flake from the other face. The fluted point from Cw374 is tan chert of unknown origin and was also manufactured by the Clovis straight base technique."

Wabash Valley fluted points are very similar to fluted points found elsewhere in southern Illinois. Points of the Clovis type predominate throughout the area, and Cumberland (Ohio) and other fluted types are extremely rare.

Distribution patterns are the same as those for the Cache and Big Muddy drainages, with Clovis points occurring in the Wabash on the present T-1 or on ridges with an elevation in excess of 25 meters but not on the T-2 or equivalent elevations. The T-1 loci are generally sand or sandy clay knolls and the upland loci are clay ridges.
For additional data on the relationship of the Wabash fluted points to general distribution patterns of fluted points in southern Illinois, we shall refer the reader to the earlier paper on this topic (Winters 1962C).

THE DALTON-MESERVE TRADITION

By Dalton-Meserve Tradition we are referring to the complexes typified by the Dalton and Meserve projectile point types and related southern types and varieties. The Dalton-Meserve Tradition is centered in the central Mississippi Valley and adjacent drainages and is presumably derived from earlier fluted point cultures. In the State of Illinois, the Cache and Big Muddy drainages have sufficient quantities of the diagnostic points that they might be termed common. Apparently, these points are much rarer in both the Kaskaskia and Illinois river drainages. So far, no trace has been found of the Dalton-Meserve Tradition in the Wabash Valley although we have heard that there are a few examples in private collections. If so, they represent rarities in terms of the quantities of material which were examined in survey and private collections. Nor are lanceolate points of any type common. There is one point base from the Nash Site (W83) reminiscent of Quad points, but we are not at all sure of the identification of the specimen.

It would seem almost that the Clovis Tradition of Paleo-Indian was followed directly by the Archaic. It is equally possible that there is a hiatus between Paleo-Indian and Archaic occupations, and we cannot disregard the possibility that there may have been an overlap between Paleo-Indian and Archaic cultures in the Wabash Valley. But there is certainly no evidence from the Wabash Valley which would indicate a transition from Paleo-Indian into Archaic.

ARCHAIC OCCUPATIONS

Although many artifacts were found which could be related to Archaic occupations on typological grounds, little can be said about the Archaic in the Wabash as yet. Part of the difficulty stems from the low density of concentration of artifacts on Archaic sites, part from the mixed occupations on many sites, and part from heavy collecting of many of these sites for fine examples of worked chert or ground stone. For example, numerous full-grooved axes can be seen in private collections in the Wabash Valley, and even the non-collector is fully aware of the existence of "tomahawks." Thus, these items are steadily removed by both collectors and cultivators. Our total of three axes from the survey hardly reflects the common occurrence of this tool in the Wabash Valley.

Another difficulty lies in the realm of theoretical interpretation of the Archaic. For many years, the Archaic has been used to indicate cultures typified by seasonal hunting and gathering patterns, absence of pottery, absence of plant tending, and by a distinctive group of lithic artifacts. The probability of stages or phases within the long continuum of the Archaic has been recognized, of course (e.g., Willey and Phillips 1958, Caldwell 1958, Fowler 1959, Winters 1959). But work by the author in Illinois during the past seven years has indicated that the problems connected with the development of and change within the Archaic are much more complex than has previously been realized.

For example, evidence from three Late Archaic shell middens excavated in the Wabash Valley in 1961 (Winters and Stephens n.d.) would indicate that the settlement pattern and system was that of succeeding Woodland cultures with sites classifiable as settlements, transient camps, base camps, and hunting camps and that at least some Late Archaic groups were anything but simple, migratory hunters and gatherers. (See the Riverton Culture infra.)

But we can make a few preliminary observations on Archaic occupations in the Wabash. Projectile points such as Faulkner Side Notched (Fig. 3, K-P) of the Cairo Type Cluster (Winters n.d., a), and Cache (Fig. 3, A-B) and Bristol Diagonal Notched (Fig. 3, E-G) of the Thebes Type Cluster (Winters n.d., a) are common in the Wabash Valley, with the very high incidence of basal grinding (86% for Faulkner, 80% for Thebes) placing most of these points within the early and middle time periods of their type clusters. The heavy representation of these types would indicate affiliations with traditions of the Archaic centering in the lower Ohio Valley.

At the same time, it should be noted that points having the same shape as Faulkner Side Notched and those of the Thebes Type Cluster have a much wider distribution than the Ohio Valley area. Lewis and Kneberg's (1959) Big Sandy Side Notched points are identical in shape to Faulkner Side Notched as are Holland's (1960) Type M points. Survey data are inadequate, both geographically and quantitatively, to define precisely the area of maximum concentration of Faulkner Side Notched; but they would seem to be most common in southern Illinois, Indiana, and Ohio, Kentucky, Tennessee, western Virginia, and northern Alabama. Points of
the Thebes Type Cluster have a similar distribution, except that they are not as yet reported for Virginia. Variant forms are known from Missouri and Georgia (Caldwell 1958: Fig. 1, Dairy Field) and occur in considerable quantity in the Illinois River Valley in the lower portions and in the Archaic levels at Starved Rock. One type of the Thebes Cluster is well illustrated for Starved Rock by Mayer-Oakes (1951: Fig. 100 B). But since classification in most of these areas has been based entirely upon shape, we do not deem it advisable to suggest more than a high probability of close typological similarity among the points of the various areas cited.

Another newly defined type, Barbee Corner Notched (Fig. 3, H-J), may have similar connections. Although its cultural affiliations are still poorly defined, the high incidence of basal grinding (85%?) indicates Early to Middle Archaic temporal position.

But the projectile points commonly found in sites of the northern Mississippi Valley, such as Modoc (Fowler 1959, Fowler and Winters 1956), are either totally missing or very rare in the Wabash Valley. No Modoc (Side) Notched, Hidden Valley, or definitely identifiable Raddarz Side Notched points were found during the survey or observed in private collections.

Distribution patterns of the aforementioned Archaic types overlap, but Faulkner points rarely occur on the same sites as points of the Thebes Cluster (Fig. 2). In addition, Faulkner points apparently are distributed throughout the valley while points of the Thebes Cluster become quite scarce north of Lawrence County. Thus, we shall suggest as hypotheses that Faulkner and Thebes points pertain to separate occupations (Faulkner and Thebes complexes), that occupations by these groups were in part contemporaneous, that sites were generally used by only one of the two groups, that the sites with the Thebes points are outliers of a tradition which has a major concentration farther to the south in Kentucky and Tennessee, and that the Thebes Complex appears in the Wabash Valley somewhat earlier than the Faulkner Complex. (The latter two hypotheses are based, in part, upon unpublished data from the Dillow and Duran rock shelters in southern Illinois where points of the Thebes Cluster underlie points such as Faulkner Side Notched and are found in the same levels as points of the Dalton-Meserve Tradition.)

Another point of interest, in connection with settlement patterns for groups typified by Faulkner and Thebes points, is that there are large areas in the Wabash where these points do not occur at all. Some of these localities are ideally situated in respect to physiographic position, with large streams nearby, good drainage, and large, level knolls. In other drainages of the State, such locations would have been covered with Archaic material; but in the Wabash, these areas not only do not have Archaic remains but also there is no evidence for any sort of occupation outside of a fringe zone along their edges. The largest of these areas, known today as the Sand Barrens, Allison Prairie, and La Motte Prairie, are typified by dune formations and large expanses of sand or extremely sandy clay. The prehistoric avoidance of these zones may point to their having been barren expanses of sand until the spread of the prairies during the Hypsithermal with the prairies precluding occupation by later groups.

Occupation by later Archaic groups is evidenced by the presence of Saratoga Parallel Stem, Saratoga Expanding Stem and Saratoga Broad Bladed (Fig. 4, A-F), Karnak Stemmed (Fig. 4, G-H), "Twisted Blade" (Fig. 4, J-K), and "Marcos" Corner Notched (Fig. 4, I) points (Winters n.d., a, Winters and Stephens n.d.). Probably the triangular and lanceolate bladed, Bifurcated Base points (Fig. 4, P-Q) are also Middle to Late Archaic since they are rarely found in association with pottery. Similar Bifurcated Base points are known from Coe's excavations on the Pee Dee River in North Carolina (Witthoft 1959), where they are early in the sequence of Archaic points. Missing, or rare, in the Wabash are the Late Archaic points and the majority of atlatl weight types found by Fowler (1957) at the Ferry site some twenty miles south of the Wabash.

But, quantitatively, the number of Late Archaic points was surprisingly low in comparison to earlier Archaic points. Totals are presented below with points of the Riverton Culture and Adena points excluded. The former culture represents a very specialized intrusion into the Wabash and some of the Adena points probably pertain to Archaic occupations, others to fully developed Woodland occupations (Winters and Stephens n.d.). Since only five Adena points or blades were found, their exclusion will not affect the results very much.
Early and Middle Archaic Points

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</tr>
<tr>
<td>Thebes Type Cluster</td>
<td>16</td>
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<tr>
<td>Faulkner Side Notched</td>
<td>38</td>
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</table>

(19 straight based, 6 concave based; 11 convex based; 2 unclassified)

Late Archaic Points

<table>
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<th>Site Type</th>
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<td>Saratoga Type Cluster</td>
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<tr>
<td>Twisted Blade Points</td>
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</tr>
<tr>
<td>Karnak Stemmed</td>
<td>2</td>
</tr>
<tr>
<td>&quot;Marcos&quot; Stemmed</td>
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</table>

Thus there are 70 points from the time period roughly between 8000 and 3000 B.C. and only 19 points from between 3000 and 1000 B.C. Correcting for differences in time span, the figure would still be 7.0 points per 500-year unit from the early period as opposed to 4.8 points per 500-year unit from the later period.

Nor are Late Archaic points often found along the smaller tributaries of the Wabash, being concentrated along the T-1 of the Wabash and very large tributaries such as the Embarrass. This pattern is quite different from that of Early and Middle Archaic, since points from these temporal periods occur along all tributaries. The latter Archaic sites are distributed over a wide range of physiographic zones, including sandy knolls on the T-1 of the Wabash, clay knolls near tributary streams, knolls on the T-2 of the Wabash, and upland locations in excess of 30 meters above the T-0 of the Wabash. In area, the sites range from one-eighth acre to as much as two acres.

Such a differential in concentration contrasts sharply with areas such as the Cache River Valley—where by far the greater number of points pertain to the late period of the Archaic and even the smallest tributaries have numerous Late Archaic sites along them. We can only speculate at present as to why the Wabash Valley should present a trend which is the reverse of other areas in southern Illinois. Perhaps the spread of prairies into the Wabash during the Hypsithermal accounts for a reduction in occupation, with the wooded hills and valleys of the southernmost part of the State becoming "refuge areas" for various Archaic populations. Pollen analysis would help in solution of such a problem when coupled with already available quantitative and distributional data on Archaic sites in southern Illinois.

Besides projectile points, the numerous full-grooved axes (Fig. 6, J; very rarely three-quarter grooved), a scattering of atlatl weights (Fig. 6, A-C; hemispherical, paneled, crescent, prismoidal, pick-shaped), and rare examples of conical pestles (Fig. 6, I) give evidence of Archaic occupations. Undoubtedly many of the leaf-shaped and lanceolate blades (Fig. 6, E), end scrapers (Fig. 6, F-H), flake scrapers, simple and "V-Head" drills (Fig. 6, D), grooved abraders, simple manos, pitted manos, nutting stones, boulder metates, and shredders found during the survey also pertain to the Archaic; but since these artifacts persist unchanged into later cultures, we have avoided making specific assignment to the Archaic. Only excavation can provide data which will permit the assignment of these generalized artifacts to the "Wabash Archaic." Unfortunately, to date, no site has been found, among the many known Wabash Archaic sites, which is sufficiently unmixed or deep enough to assure that sound data on the Archaic would be derived from excavation.

In respect to raw materials, there is no evidence for the importation of such items by Archaic peoples. Numerous gravel banks along the Wabash provide chert nodules and the large pebbles used for axes, manos, and metates; the gray-green banded slate (indurated shale?) used for atlatl weights also occurs in quantity in the same gravel banks; and the sandstone used for grooved abraders, nutting stones, and some manos and metates has many exposures along the Wabash.
Figure 2

CENTRAL AND LOWER WABASH RIVER VALLEY

Adapted from J. A. Bier, 1956

+ Faulkner Side Notched
× Thebes Type Cluster
△ Faulkner and Thebes

BOUNDARY BETWEEN SPRINGFIELD PLAINS & THE MT. VERNON HILL COUNTRY

Scale in Miles
FIGURE 3

PROJECTILE POINT TYPES (approx. three-quarters scale)

Cache Diagonal Notched Points (Thebes Type Cluster)
A. Shidler No. 4, Lw274
B. Near Zaynor Mound, Lw183

Bristol Diagonal Notched Points (?)
C. Collins No. 1, Lw245
D. Near Ravelette Site, Lw211

Bristol Diagonal Notched Points
E. Garden Site, Lw219
F. Africa Ridge No. 2, Cw341
G. Brooks No. 4, Lw230

Barbee Corner Notched Points
H. Gognat, Lw231
I. Ensor No. 1, Lw207
J. Ensor No. 2, Lw208

Faulkner Side Notched Points
K. Purgatory Swamp Site, Lw95
L. Bellewood No. 1, Lw241
M. Akin No. 1, Lw232
N. Storm No. 1, Lw339
O. Green Site, Lw191
P. Blair Site, Lw201
FIGURE 4

PROJECTILE POINT TYPES (approx. three-quarters scale)

Saratoga Type Cluster
A. Spillman No. 3, Lw224
B. Lowe Site, Cw107
C. Colliflower Site, Cw360
D. Bunyan Site, Lw270
E. Fox Ridge Site, W78

Saratoga Broad Bladed
F. Rochester No. 4, W87

Karnak Stemmed
G. Brooks No. 4, Lw230
H. Parmenter Site, W98

"Marcos" Corner Notched
I. Robeson Hills Site, Lw1

Twisted Blade Points
J. Spillman No. 3, Lw224
K. Spillman No. 4, Lw225

Merom Expanding Stem
L. Swan Island Site, Cw319
M. Swan Island Site, Cw319

Trimble Side Notched
N. Swan Island Site, Cw319

Robeson Constricted Stem
O. Ross Goodwin Site, Lw294

Bifurcated Base Points
P. Killdeer No. 1, Lw212
Q. Africa Ridge No. 9, Cw348
Figure 4

A
SARATOGA

B
TYPE

C
CLUSTER

D

E

F
SARATOGA

BROAD

BLADED

G
KARNAK

H
STEMMED

I
"MARCOS" CORNER

NOTCHED

J

K
TWISTED

BLADE

L
MEROM

M
EXPANDING

STEM

N
TRIMBLE

O
SIDE

CONSTRUCTED

STEM

P

Q
BIFURCATED

BASE
FIGURE 5

PROJECTILE POINT TYPES (approx. three-quarters scale)

Morley Flared Base, (Tamms Type Cluster)
A. Rains Site, Cw362

Dickson Broad Bladed, (Belknap Type Cluster)
B. Bumble Bee Site, Cl233
C. Purgatory Swamp Site, Lw95
D. Levee No. 1, Lw216

Bradshaw Stemmed
E. Barbee South, Cw362

Affinis Snyders Corner Notched
F. North York 1 or 2, Cl188 or 199

Adena Stemmed
G. W. A. Smith No. 2, Lw277
H. Bumble Bee Site, Cl233
I. Ensor No. 2, Lw207

Mounds Stemless, Group I
J. Brooks No. 4, Lw230
K. Killdeer No. 2, Lw213
L. Akin No. 2, Lw233
M. Doll Site, Location I, Lw194
N. Road's End No. 2, Cw321

Mounds Stemless, Group II
O. Pinkstaff No. 5, Lw264
P. Gray Estate Site, Lw243
Q. Pinkstaff No. 3, Lw262

Mounds Stemless, Group III
R. Murphy No. 1, Cl83
S. Beard Site, Lw206
T. Doll Site, Location III, Lw196

Mounds Stemless, Group IV
U. Pierson Site, Lw265
V. Killdeer No. 2, Lw213
W. Peankishaw Bend Site, W100
Figure 5

MOTLEY FLARED BASE

DICKSON BROAD BLADED

BRADSHAW STEMMED

AFFINIS SNYDERS

ADENA STEMMED

GROUP I

GROUP II

MOUNDS STEMLESS

GROUP III

GROUP IV
ARCHAIC ARTIFACTS (approx. three-quarters scale)

Atlatl Weights
A. Hemispherical, banded green slate, Bristol Hill No. 1, Cw333
B. Crescent (?), banded green slate, Akin No. 2, Lw233
C. Panel, banded green slate, Long Pond Site, Cw325

Simple Tapered Drill
D. Wabash chert, Lone Tree No. 1, Cl225

Leaf-Shaped Blade
E. Wabash chert, Killdeer No. 2, Lw213

End Scrapers
F. Wabash chert, Weger No. 1, Lw144
G. Wabash chert, Africa Ridge No. 5, Cw344
H. Wabash chert, Africa Ridge No. 7, Cw346

Pestle
I. Igneous rock, Craig No. 2, Cl222

Full Grooved Axe
J. Igneous rock, Shidler No. 4, Lw274
MIDCONTINENT TRADITION
OF THE ARCHAIC:
THE RIVERTON CULTURE

The Archaic Riverton Culture was first defined through the excavation of three shell middens by the Illinois State Museum in 1961 (Winters and Stephens n.d.). One of the most important of these, the Robeson Hills Site, has now been destroyed by highway borrow pit operations, except for a shallow area at the north end of the site. Since the results are to be published by the Illinois State Museum, we shall present only a brief summary here to round out our coverage of prehistoric cultures of the Wabash Valley.

Settlement Pattern. The three major sites of the Riverton Culture are spaced at ten-mile intervals along the Wabash in Crawford and Lawrence counties. Two of the sites (Riverton, Cw170, and Swan Island, Cw319) are on the T-0 terrace of the Wabash while the third (Robeson Hills, Lw1) is on a bluff which has an elevation in excess of 100 feet above the Wabash. Other small sites are scattered along the T-1 of the Wabash in the vicinity of the Robeson Hills and Riverton sites.

Settlement System. Excavation and reconnaissance indicate that the settlement system of the Riverton Culture is very complex. But before discussing the complexities of the system, we should point out that six radiocarbon dates clearly indicate the contemporaneity of two of the sites, Robeson Hills and Riverton. In view of the very close agreement in typology among the artifacts of the three sites we can assume that Swan Island is also contemporaneous. Thus, absolute or proportionate differences among the assemblages from the sites may be interpreted as representing some sort of functional differentiation in utilization of the sites.

We are proposing tentatively that the sites of the Riverton Culture may be classified as settlements, transient camps, base camps, and hunting and/or gathering camps. Each of these types has distinctive characteristics which are easily recognized in deep, stratified sites with good preservation of faunal remains or in smaller, non-stratified, single component sites which are sufficiently undisturbed to permit the recovery of a representative sample of cultural materials by either excavation or, in some instances, surface collecting.

The settlement, of which the four-foot-deep midden of Robeson Hills would be an example, is characterized by numerous postholes, clay house floors or working areas, numerous storage pits, high incidence of fabricating and processing tools and domestic implements, low incidence of weapons, high percentages of deer bone and low percentages of fish and small game, and the presence of migratory fowl.

The transient camp, of which the upper and lower levels of the five-foot-deep midden of Swan Island are an example, has no houses but does have clay or sandstone floors. Storage pits are scarce, weapons are very high in proportion to other functional tool categories, and small game, fish, and turtle have very high percentage in contrast to low percentages of deer. Migratory fowl are also present in the Swan Island midden.

The base camp, of which the eight-foot-deep midden of Riverton is an example, has no houses, and clay floors and storage pits are scarce. Weapons constitute from 40 to 50 per cent of the assemblage. Deer is present in percentages much higher than at Swan Island but lower than at Robeson Hills, and the total number of species present is much lower than Swan Island but higher than Robeson Hills. No migratory fowl were found, although the sample of bone from Riverton was larger than the samples from the other two sites combined.

Hunting camps, such as Lowe No. 2 (Cw365), Doll No. 2 (Lw195), Beard (Lw206), Gognat (Lw231), Pinkstaff No. 4 (Lw263), Barbee South (Cw364), Ross Goodwin (Lw294), Prather No. 2 (Cw331), and Fox Creek No. 2 (Cw328) are identifiable only by a thin scattering of projectile points diagnostic of the culture (Fig. 4, Merom Expanding Stemmed, Robeson Constricted Stem, Trimble Side Notched). All of the Crawford County sites are close to Riverton while the Lawrence County sites, with the exception of Ross Goodwin which is immediately adjacent to Swan Island, are near Robeson Hills.

Our present survey data, then, indicate that hunting camps are a normal adjunct of both settlements and base camps but not of transient camps. The single deviation from the pattern, the Ross Goodwin Site, may not be the exception it seems. The latter site is separated from Swan Island by only about 100 yards and may simply represent a minor utilization of an adjacent area by the residents of Swan Island, especially since the most numerous artifact is the mano. In contrast, the hunting camps are from one to five miles distant from Robeson Hills or Riverton. Perhaps such a pattern would be expected in view of the disparities in faunal remains between Swan Island on the one hand and Robeson Hills and Riverton on the other. The high propor-
occupations of small mammals, fish, and turtle at Swan Island could indicate primary dependence on the faunal resources of the adjacent valley bottomlands and bayous.

There is still considerable doubt whether gathering camps are a part of the Riverton settlement system. Such sites are, of course, typified by concentrations of pebble manos and boulder metates and little else of diagnostic value is associated. At present, all that we can say is that such sites are known in the vicinity of Riverton sites but that they may pertain to other occupations in the same areas. Only excavation of such neglected cultural manifestations can demonstrate what their role is in Wabash Valley prehistory.

As for seasonal occupation of sites within the system, we can note the following points. The settlement, Robeson Hills, has houses, numerous storage pits, and the bones of migratory fowl. Such a combination would suggest that the site was being occupied for a considerable time during inclement weather (houses), that natural food crops were being stored (pits), and that the site was occupied at some time during the spring or fall (migratory fowl). Such a combination might suggest a fall and winter occupation. Swan Island also has migratory fowl but no houses and few storage pits, suggesting that Swan Island may have been more briefly occupied during the spring and fall by groups en route to or returning from a base camp such as Riverton which has no houses, few storage pits, and no migratory fowl. (Unfortunately, we have been unable to utilize deer skulls as verifying data for such patterns of seasonality since only the mandibles occur with any frequency in the middens, and even these are rare.)

A by-product of the analysis of artifacts by functional categories for use in settlement system studies has been the derivation of an index (Systemic Index) which under certain conditions can be useful in expressing mathematically the functional nature of the site. The index is simply a ratio determined by dividing the sum of fabricating and processing tools and domestic implements by weapons. These items were chosen because they should express something of the relationship between hunting activities and more sedentary patterns characterized by the processing of a wide range of raw materials and the manufacture of basic implements of production. By experimenting with data from a number of sites, it was discovered that the index can rarely be used for surface collections or for multi-component sites where heavy mixture of occupations has occurred, for sites which lack good preservation of bone, shell, and other perishable materials, or sites which have been analyzed by using only non-functional categories. As a test, the index has been derived for Modoc, with very good correlation with Fowler's (1959) interpretation of the nature of successive occupations in the shelter. Partially satisfactory results were also obtained for Graham Cave.

Briefly summarized, the ratios for hunting camps range between 0.3 and 0.6, for base camps between 0.9 and 1.1, for transient camps between 1.5 and 2.0, and for settlements between 5 and 20. But let us be clear in stressing that this index is an illustrative device, not an analytic tool. Perhaps with a few centuries of refinement, such indices can be applied uncritically and routinely to raw and processed data; but with the primitive field and laboratory techniques and theoretical models of our own era, such application could only do a considerable disservice to the development of archaeological method and theory.

We also recognize that our model for the Riverton settlement system is simplistic and that it will change as better techniques of functional analysis are developed and more data become available from larger excavation units in the shell middens. At the same time, it is obvious from proportional analyses of our functional artifact and feature categories and from faunal data that decided differences exist among these closely related and contemporaneous sites. Certainly, we cannot continue to ignore the implications of such data in our search for techniques for understanding some of the simpler organizational principles of prehistoric societies in the Midwest.

Site Descriptions. The Robeson Hills site occupies three acres on the eastern periphery of the steep-sided hill mass of the same name, with the site having an elevation in excess of 100 feet above the T-0 of the Wabash. A slight depression on the western side of the site was intensively utilized for house construction although such features were scattered over most of the midden area. Storage pits, clay floors, and hearths were numerous throughout the areas excavated. The latter features ranged from shallow, clay basins five feet in diameter to small unprepared areas on midden surfaces. Both Swan Island and Riverton were located on knolls on the T-0 and were close to the Wabash River or sloughs thereof. Swan Island has an area of about three acres while Riverton covers about an acre. However, the total area of the latter site is probably much larger
since there has been extensive silting of the valley floor in the area of that site. Both Swan Island and Riverton have many hearths, both of the unprepared and prepared types; storage pits are scarce; and clay floors range from fairly common at Swan Island to scarce at Riverton.

Hunting camps were on sand or clay knolls on the edge of the T-1 and ranged from an eighth of an acre to an acre in area. In all instances, hunting camps have only a thin scattering of occupational debris, and nothing is known of the internal structure of these unexcavated sites.

Assuming that vegetative cover has not changed radically in the past 3500 years, Robeson Hills would have been an open expanse throughout most of its history, with woods covering the adjacent bluff tops and sides. Our surmise that the hilltop was open is based in part on the supposition that the heavy cultural activity observable at the site would have eliminated heavy forest cover and the observation that the rich midden soil left as a residue from specimen washing has remained barren for a year and a half, even though immediately adjacent areas have plant cover. Perhaps the very high lime content added by disintegrating mussel shells produces an environment unfavorable for the growth of many plants.

Both Swan Island and Riverton would have been surrounded by the heavy woods of the flood plain and by swampy areas. The many hunting camps along the edge of the T-1 (Lowe No. 2, Barbee South, Beard, etc.) would have been in wooded areas near large expanses of prairie. Such fringe loci between river, woods, and prairies would have offered a great range of potential sources for both hunting and gathering activities.

**Subsistence Pattern.** Analyses of faunal remains by Dr. Paul Parmalee, Curator of Zoology at the Illinois State Museum, show that deer and raccoon were the most important mammals hunted by the peoples of the Riverton Culture. Many smaller mammals were also taken, as well as birds (principal turkey), turtle, and fish. As indicated in the previous section on settlement system, there was considerable variation from site to site in the importance of the various vertebrate remains.

Mussels were also a very important component of diet; and, with few exceptions, the species of mussels in the middens were the same as those reported from the rich mussel beds of the Wabash River in historic times. A few species, such as *Lampsilis ova*, have a more southern distribution in the lower Wabash and Ohio valleys today. The reasons for the disappearance of these species from the central Wabash are unknown, but investigation of the problem might be of help for inferring climatic change and/or riverine conditions during and after the occupation of the central Wabash by the peoples of the Riverton Culture.

Mussel shells were distributed throughout the midden, generally occurring as concentrated lenses near hearth areas or in refuse pits. Shells were less common in the upper one to two feet of the midden, but the decrease is probably a result of preservation factors rather than a change in subsistence pattern.

Carbonized nut shells (hickory and pecan) were also found in the excavated sites. Such plant remains are often used for postulating season of occupation; but in view of ethnographic data on the storage patterns of historic Indian groups, we are not sure that nut fragments can be used for such a purpose. For example, the Caddoan Indians stored their nuts in pits in the ground in the fall but were still using the nuts well into August of the following year (Swanton 1942). Since we have no idea what the storage and use patterns of Late Archaic Indians may have been, we prefer to rely on less ambiguous data for determining season of occupation.

Soil samples collected from pits have not yet been washed and sifted for recovery of small seeds. Conditions for preservation of such food remains are ideal in the shell middens, and we expect information on the utilization of plants to be considerably amplified when such recovery techniques are used.

While we would classify the subsistence pattern of the Riverton Culture as one based on hunting and gathering, we feel that it was a type of hunting and gathering that permitted a rather settled way of life. Riverton sites so far have been found only within a thirty-mile range, are few in number, but were intensively occupied for a five-hundred-year period. Apparently, the Riverton peoples had attained such efficiency in the exploitation of the subsistence potential of the Wabash Valley that they were able to maintain a semi-sedentary existence for a protracted period of time through a seasonal round quite comparable to that of Woodland groups in historic times.

**Trade.** With few exceptions, raw materials were obtained from local gravels, sandstones, shales, or faunal remains. The few examples of implements made from imported cherts are typologically aberrant for the Riverton Culture and have stratigraphic contexts suggesting that they may belong with minor early and late occupations of the sites by other Archaic groups.
### TABLE 2

**COMPARATIVE TRAIT LIST OF THE ROBESON HILLS, RIVERTON AND SWAN ISLAND SITES: ARTIFACTS OF THE RIVERTON CULTURE. (FROM WINTERS AND STEPHENS N.D.)**

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<th>Robeson Hills</th>
<th>Riverton</th>
<th>Swan Island</th>
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<td>End, reworked</td>
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<td>C</td>
<td>R</td>
<td>S</td>
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<td>Workshop areas</td>
<td>R</td>
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<td>S</td>
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<td><strong>BURIAL COMPLEX</strong></td>
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<tr>
<td>Burials, extended</td>
<td>C?</td>
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<tr>
<td>Burials, flexed</td>
<td>R?</td>
<td>C</td>
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<tr>
<td>Burials, cremated</td>
<td>—</td>
<td>C</td>
<td>R</td>
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<tr>
<td>Burials, in refuse pits</td>
<td>C?</td>
<td>—</td>
<td>—</td>
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<tr>
<td>Burials, in special pits</td>
<td>R?</td>
<td>C</td>
<td>—</td>
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<tr>
<td>Red ochre on burials</td>
<td>R</td>
<td>C</td>
<td>X</td>
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<tr>
<td>Grave goods with burials</td>
<td>C?</td>
<td>X</td>
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<td><strong>MISCELLANEOUS</strong></td>
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<td>“Polishing” stones</td>
<td>R</td>
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<tr>
<td>“Shredders”</td>
<td>R</td>
<td>—</td>
<td>—</td>
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<td>“Pins”, bone</td>
<td>—</td>
<td>S</td>
<td>S</td>
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<tr>
<td>Mandibles, cut and polished</td>
<td>—</td>
<td>R</td>
<td>R</td>
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<td>Turtle carapaces, cut or ground</td>
<td>—</td>
<td>R</td>
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<tr>
<td>Antler mid-sections and cut tines</td>
<td>R</td>
<td>C</td>
<td>C</td>
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<tr>
<td>Cut gar jaws</td>
<td>C</td>
<td>R</td>
<td>C</td>
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<tr>
<td>“Tubes”, bone</td>
<td>R</td>
<td>—</td>
<td>R</td>
</tr>
<tr>
<td>Discs, bone</td>
<td>—</td>
<td>R</td>
<td>—</td>
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<tr>
<td>Paint cups, mussel shell</td>
<td>—</td>
<td>R</td>
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R = Rare  S = Scarce  C = Common  X = Reported

? = Association or identification uncertain
* = "Diagnostic" artifacts
Material Culture. The most striking artifacts of the Riverton Culture are the small projectile points, gravers or perforators of the Poverty Point type, leaf-shaped or lanceolate blades, and scrapers. All of these chert artifacts are so small in comparison to equivalent artifacts in contemporaneous Archaic complexes that we have used the term "micro-tools" to designate them as a group. The application of the term to the Riverton artifacts may not be felicitous in view of its specialized usage in other parts of the world, but it serves as a very convenient rubric for contrasting the small chert implements of Riverton with those of both preceding and succeeding cultures in the Midwest. Only in Late Woodland and Mississippian cultures are projectile points of comparable size found; and the Riverton points (Fig. 4, L-O) are, in fact, often mistaken for Late Woodland points although there is really little similarity between Riverton and later points beyond smallness.

While we emphasize the smallness of lithic implements in the Riverton Culture, we should also point out that in the central Wabash many Archaic types of projectile points and other tools are much smaller than their counterparts in other drainages of the Midwest. In part, this generalized tendency to smallness can be explained on the basis of the size of the chert nodules in the local gravels. These nodules are rarely large, are very irregular in shape, and contain many impurities. The manufacture of implements of "normal" size would not generally be practicable, and the Riverton artifacts probably represent an ultimate economy in the utilization of local raw materials. In contrast, when the use of large nodules of chert from southern Illinois and Indiana became common in Early and Middle Woodland times, tools corresponded in size to their equivalent types in other areas of the Midwest.

Other characteristic artifacts are summarized in Table 2. Among these are grooved sandstone sinkers, "cloudblower" pipes, antler and bone gouges, and antler spoons. None of these are known from other Archaic complexes in the Midwest north of the Ohio River.

Cultural Affiliation. There are no known antecedents for the Riverton Culture in the Wabash Valley, nor is there any evidence that would point to derivation from known Archaic complexes or cultures in the Midwest north of the Ohio River. Instead, the most likely sources for the intrusive Riverton Culture are found in the Tennessee River Valley where the distinctive antler gouges, "cloudblower" pipes, and grooved sandstone sinkers are found in Late Archaic shell middens. There is less resemblance to sites of the Indian Knoll type with many of the important Indian Knoll lithic and bone artifacts (fishhooks; atlatl weights, handles, and hooks; shell gorgets, etc.) missing from the Riverton assemblage and items diagnostic of the Riverton Culture, such as antler gouges, unrepresented in the Indian Knoll sites.

Once again, we are faced with the problem of defining regional variants within larger traditions. Following Lewis and Kneberg (1959), we shall use the term Midcontinent Tradition of the Archaic to include such regional manifestations as the Tennessee Valley sequence, the Indian Knoll Culture, and the Riverton Culture. Probably, there will be need for finer differentiation of cultures within the tradition as we attain greater control of spatial, temporal, and technological data from the Midcontinent area.

Temporal Position. Six radiocarbon dates from the Phoenix Memorial Laboratory at the University of Michigan indicate that the Riverton Culture existed between 1500 and 1000 B.C. in the Wabash Valley. These dates, four of which are from Riverton and two from Robeson Hills, will be published in the excavation report on the Wabash Valley shell middens (Winters and Stephens n.d.). Such dates would place the Riverton Culture at the very end of the Archaic and probably later than some Woodland manifestations in the Midwest.

EARLY WOODLAND OCCUPATIONS

Little was recovered that could be related to Early Woodland occupations of the Wabash Valley. A few sherds of a thick grit-tempered pottery with cordmarked interiors and fabric-marked exteriors, or vice versa, probably pertain to some sort of Early Woodland occupation, however. Sherds of this type have been found on the surface at Killdeer No. 1 (Lw212), the Robeson Hills Site (Lw1; Winters and Stephens n.d.), and Mefford No. 1 (Lw234). Denzil Stephens also reports similar pottery from Aurora Bend in Clark County.

No other artifacts can definitely be associated with this pottery, nor can we infer what its relationship may be to Fayette Thick or Marion Thick. Perhaps some of the Motley Flared Base (Fig. 5, A), Dickson Broad Bladed (Fig. 5, B-D), Bradshaw Stemmed (Fig. 5, E), and Adena Stemmed points (Fig. 5, G-I) belong with the Early Woodland pottery.

Physiographic positions of the sites on which the cord-fabric marked pottery was found range from the T-1 (Killdeer, Mefford No. 1, and Aurora
Figure 7

Central and Lower Wabash River Valley

Adapted from J. A. Bier, 1956

Figure 7

Havana Tradition
Allison Complex
Crab Orchard Tradition
Havana and "Hubele"
Sherds
Cemeteries
Villages and Hamlets

Boundary between Springfield Plains
& the Mt. Vernon Hill Country
FIGURE 8

HAVANA TRADITION SHERDS FROM THE DENZIL STEPHENS COLLECTION
(approx. three-quarters scale)

Naples Stamped, dentate variety
A-E. Purgatory Swamp Site, Lw95

Havana Zoned
F. North York No. 1, CI188
Figure 8
FIGURE 9

HAVANA TRADITION SHERDS FROM THE
DENZIL STEPHENS COLLECTION
(approx. three-quarters scale)

Naples Stamped, dentate variety
   A-B, E-F, I-K. Purgatory Swamp Site, Lw95
   G, L. Gamble Site, Lw11
   H. Lowe Site, Cw107

Naples Ovoid Stamped
   O. North York No. 1, Cl188

Naples Ovoid Stamped, miniature variety
   C. Purgatory Swamp Site, Lw95

Hummel Stamped, dentate variety
   D. Minnow Slough Site, Cw164

Havana Zoned, dentate variety
   M. Purgatory Swamp Site, Lw95
   N. North York No. 1, Cl188

Neteler Stamped
   P. Purgatory Swamp Site, Lw95
Figure 9
HAVANA AND CRAB ORCHARD TRADITION SHERDS (approx. three-quarters scale)

Havana Ware, punctated sherds
A. D. Purgatory Swamp Site, Lw95

Naples Stamped, dentate variety
B-C. G. Purgatory Swamp Site, Lw95

Havana Zoned, dentate variety
E. Purgatory Swamp Site, Lw95

Sister Creeks Punctated
F. Purgatory Swamp Site, Lw95
H. Doll Mound, Lw193

"Hubele" Plain
I. Purgatory Swamp Site, Lw95

"Hubele" Zoned, dentate variety
J. Dunkel Site, W71

"Hubele" Zoned, unclassified variety
K. Dunkel Site, W71

"Hubele" Zoned, unclassified variety
O. Dunkel Site, W71

"Hubele" Zoned, unclassified variety
L. North York No. 1, Cli88

"Hubele" Zoned, unclassified variety
M. Spillman No. 3, Lw224
N. Garden Site, Lw219

A-G and I are from the collection of Denzil Stephens. Other sherds are from Illinois State Museum collections.
Figure 10
Bend), to the T-0 (Riverton), to a bluff top over 100 feet above the T-0 (Robeson Hills).

Another site which may have an "Early Woodland" occupation is Bennett's Wabash Site (Wh92). Both thick cordmarked and paddle edge impressed pottery are common on this site, which is notable for the large quantities of shell and bone exposed along its eastern edge by excavation for highway fill and the cutting in of the Wabash River. None of the pottery is noded, and it resembles Sugar Hill Cordmarked and early forms of Crab Orchard Fabric Impressed (Maxwell 1951). Thus, the site may equate with the early part of the Crab Orchard Tradition. But if such an equation is correct, the site probably should be assigned to an early period of Middle Woodland rather than to Early Woodland.

Perhaps the general paucity of Early Woodland remains in the Wabash Valley indicates a continuation from the Late Archaic of conditions unfavorable for large concentrations of population substantially dependent upon hunting and gathering for their subsistence. Probably we are overemphasizing the importance of the effects of the spread of the prairie in the Wabash Valley during the Hypsithermal, but such a change in environment is the only large natural change which can be inferred, from present evidence, to explain the population decline of the Wabash during the Late Archaic and Early Woodland periods.

MIDDLE WOODLAND CULTURES

We are using the term Middle Woodland here to cover manifestations such as the Havana Tradition, the Hopewellian Phase of the Crab Orchard Tradition, and the Allison Culture.

Havana Tradition

Following the general agreement reached among the majority of Illinois archaeologists at the First Havana Conference at Carlyle, Illinois, July 14-15, 1962, we are using the term Havana Tradition to include all cultural units which have Havana Ware (Griffin 1952) as their basic pottery along with projectile points such as Snyders Notched (Scull 1951; Winters n.d., a), Affinis Snyders Notched (Fig. 5, F; Winters n.d., a), and Dickson Broad Bladed knives (Fig. 5, B-D; Winters 1961; Winters n.d., a) as basic tools. While the limits of the Havana Tradition can easily be traced in Illinois, northern Indiana, southern Wisconsin, eastern Iowa, Missouri, and northeastern Oklahoma, it is recognized that within that area there are many regional variants through space and time which should be accorded a lesser taxonomic status. The work of both Stuart Strever and James Brown (personal communications) is demonstrating that such areal variants can be recognized within the Illinois Valley and adjacent drainages by the frequencies and combinations of design elements and motifs and general design layout of decorated Havana Ware pots. Such an analysis has not yet been performed for the Havana sherds from the Wabash Valley, but there is no doubt that certain Wabash ceramics represent a regional variant of the Havana Tradition, and we suspect that its strongest ties are with the central Illinois Valley variant illustrated by Griffin (1952).

Settlement Pattern and System. Since there are only two sites with any quantity of Havana materials known to date in the Wabash Valley (Fig. 7), it is rather difficult to make inferences about either settlement pattern or system. One village, the Gamble Site (Gillihan and Beeson 1960), is on a ridge some 60 feet above the T-0 of the Embarrass River, while the other, the Purgatory Swamp Site (Lw95), is on the T-1 of an abandoned channel of the Wabash. The latter channel is still a heavily wooded swamp in the area around the village. One other area, the North York sites (Cl188, Cl199, Cl204), which lie on conjoined ridges on the T-1 of Mill Creek, produces a scattering of Havana sherds, but it is not clear whether these sherds are occupational debris or are coming from the numerous plowed-down mounds which are present on the ridges.

Additional occurrences of Havana sherds can be summarized very briefly: the Mississippian Doll Mound (Lw193) had two Sister Creeks Punctated sherds (Fig. 10, H) and a Havana Cordmarked sherd in the eroding mound fill. One Naples Dentate Stamped sherd came from Killdeer No. 2 (Lw213); another dentate stamped sherd from Brooks No. 4 (Lw230); and a single dentate stamped sherd from the La Motte Culture Lowe Site (Cw107). Two additional dentate stamped Havana sherds from the latter site are in the Denzil Stephens collection, which also contains a dentate Havana sherd from the Minnow Slough Site (Cw164). All of these latter sites are on the T-1 of the Embarrass or Wabash, with the exception of the Doll Mound which is on the T-0 of the Wabash. Such a location is rather peculiar in terms of most cultures of the Wabash Valley, but since the sherds were from the fill of a Mississippian mound, their presence at the site does not necessarily indicate even a minor Havana occupation.
In addition to the ceramic material listed above, eight Affinis Snyders points were recovered from six sites (CI188, CI204, CI233; Cw107, Cw363; Lw283). But it must be noted that while all Havana Tradition sites have Snyders or Affinis Snyders points (Fig. 5F), not all points of the Snyders cluster are Havana. There is good evidence, from the Crab Orchard area, for example, that Snyders points appear in quantity during a period of interaction between the Havana and Crab Orchard Tradition (Joseph R. Caldwell, personal communication; Winters, unpublished research). Apparently, a similar situation pertains in the Wabash Valley where Snyders points appear at the Crab Orchard Tradition Hubele Site (Wh30) along with other projectile point types more commonly associated with the latter tradition. We should probably be justified in including the specimens from the North York sites (CI188, CI204), where Havana sherds occur consistently, as representing the Havana Tradition. But other sites such as Bumble Bee (CI233) and Lowe (Cw107) are primarily La Motte Culture sites, and the significance of an occasional Snyders point or Havana sherd on such sites is not clear. The remaining two sites (New Providence No. 1, Cw363; Brushy Creek, Lw283) are small camp sites with little diagnostic material. (The preceding remarks on cultural affiliation also pertain to the Dickson Broad Bladed knives.)

But in spite of the sparseness of the sherd material and the problems of cultural affiliations of projectile point types, one point about settlement pattern is clear. Ninety-two per cent of the 173 Havana sherds in the Illinois State Museum and Denzil Stephens' collections come from within a seven-mile radius of Lawrenceville, Illinois. (The percentage would be even higher if surface collections had been made at the Gamble Site). Thus, we can say that the area around the junction of the Embarrass and Wabash is the center for a minor occupation of the Wabash Valley by peoples of the Havana Tradition. Furthermore, most of the Havana loci are on the T-1, and all loci are on sandy clay ridges.

As for settlement system, we can only submit the following hypotheses at present. First of all, the excavations at the Gamble Site produced a total of 34 Neteler Stamped sherds (Gillihan and Beeson 1960), while only one Neteler Stamped sherd is known from surface collections at Purgatory Swamp. Naples Stamped and various dentate stamped sherds totaled 55 sherds in the Gamble excavations and 54 in the Purgatory Swamp sur-

face collections. While the chances of sampling error in comparisons between excavated and surface collections are formidable, one should still raise the question whether the comparative scarcity of Neteler at Purgatory Swamp may not indicate a somewhat later date for Purgatory than Gamble. (For seriation studies on Havana ceramics see Bluhm 1951; Fowler 1952, 1955; Wray and MacNeish 1961.) If the occupation of these settlements are, then, sequential, we should have a system involving a single settlement (village?) surrounded by a few camps or homesteads.

What the relationship of the numerous mounds at North York and Purgatory Swamp may be to the Havana Tradition is a complete unknown since in each area there are sizable La Motte Culture and Mississippian occupations.

Site Descriptions. The mixed occupations of both the known villages prevent any adequate description of either the appearance or the area of the sites during their Havana occupations. Unfortunately, excavations at the Gamble Site had to be confined to the highway right-of-way which traversed only the edge of the occupation area.

Subsistence Pattern. No data were recovered relevant to subsistence pattern during the survey. Animal bone and shell were recovered at Gamble (Gillihan and Beeson 1960), but there is no way of relating such remains to the four or more components at the site.

Trade. Little evidence was found for trade. Two Affinis Snyders from Bumble Bee and North York are the blue-gray cherts of southern Illinois or Indiana, and another two from Lowe and Brushy Creek are a lustrous, cream-colored chert of exotic origin. Only the North York specimen can be assumed to be Havana. But most of the raw materials from the Havana sites seem to be derived from the cherts and pebbles in the local river gravels.

Material Culture. Little can be inferred about material culture for Havana sites in the Wabash, aside from ceramic remains and projectile points. Lamellar flake blades, bifacially chipped blades, gravers, choppers, pebble manos, grooved sandstone abraders, end scrapers, drills, celt, and other lithic implements occur on the Havana sites; but with our present inadequate techniques of lithic analysis, none of these can be assigned specifically to the Havana occupation.

As has been indicated previously, Snyders Corner Notched and Affinis Snyders are diagnostic of the
Havana Tradition, apparently from its earliest period. Snyders points and *Affinis* Snyders points differ in size, cross section, and technique of preparation. Snyders points probably were made on a large flake which had been worked down to a plano surface prior to the striking off of the flake from a core. After removal of the flake, the unworked side of the flake was then chipped down to the desired shape and thickness. The result was a thin projectile point with a plano-convex cross section. *Affinis* Snyders points are prepared by a "core" technique, with both faces being chipped to produce convex surfaces. The result is a rather thick projectile point with a lenticular cross section. Snyders points also tend to be considerably larger than *Affinis* Snyders points. (A full presentation of the attributes of these two groups will be included in a forthcoming bulletin of the Illinois Archaeological Survey.)

The preceding remarks on preparation techniques also apply in the Wabash Valley to Dickson Broad Bladed knives and Adena points, each of which has varieties comparable to those of the Snyders Type Cluster.

Ceramics are easily classifiable in terms of the types and varieties published by Griffin (1952), with a few sherds probably representing new varieties. Comparison of the survey collections with the excavated materials from Gamble is difficult since in the report on the latter site, Naples Stamped is not broken down by types or varieties and Cordmarked I, decorated, apparently includes more than Havana Zoned types. But, if the illustrations are representative it would seem that Neteler Stamped, Naples Ovoid Stamped, and Havana Zoned Stamped are dominant decorated types at Gamble.

But analysis of the collections of the Illinois State Museum and of Denzil Stephens from Purgatory Swamp indicates that this site differs from Gamble in the proportions of types and varieties of decorated Havana sherdS. Naples Stamped is predominant (43 dentate-stamped, 1 plain stamped, 6 cord-wrapped-stick stamped; Fig. 8, A-E; 9, A-B, E-L; 10, B-C, G); while Naples Ovoid Stamped (1 sherd, Fig. 9, C) and Neteler Stamped (1 sherd, Fig. 9, J), Havana Zoned (2 sherds, Fig. 9, M, 10, E) and Sister Creeks Punctated (1 reed-punctated, 3 hemiconical-punctated, 1 punched; Fig. 10, A, D, F) are very minor. As indicated previously, such a shift in types of decorated Havana sherds may indicate that Purgatory Swamp is later than Gamble.

The very small sample from North York may not be fully representative, but the composition is near that of Gamble than of Purgatory Swamp. In the Denzil Stephens collection there are 2 Naples Ovoid Stamped (Fig. 9, 0), 2 Havana Dentate Stamped, and 1 Havana Zoned (Fig. 8, F; 9, N). However, other decorated sherds from this site are much closer to the grog-tempered, decorated sherds of the Hubele Site.

Other decorated Havana sherdS from Lowe, Gamble, and Minnow Slough sites are illustrated in Figure 9, D, G, H, L.

The characteristics of Havana Cordmarked are adequately described by Gillihan and Beeson (1960) for the Wabash Valley under the descriptive category of Cordmarked I. The problem noted by the latter authors of the large quantities of sand in the Wabash sherds remains, and in the absence of any further technical studies, one can only note that the clays in the areas where Havana sherds occur are all extremely sandy. Obviously, detailed comparative studies are needed of both local clays and a large series of the Wabash Havana sherds.

*Cultural Affiliations.* Unless one permits the ware concept to assume paramount importance in determining cultural affiliation within the Midwest, there should be no difficulty in relating the Wabash ceramics directly to the Havana ceramics of the central Illinois Valley. For us, the sandiness of the Havana sherds is an item of minor importance, with the possibility that such an attribute is not even relevant on the cultural level. In other respects, the two areas share identical vessel forms, decorative motifs, and many arrangements of motifs into patterns.

*Temporal Position.* We cannot agree with Gillihan and Beeson that the Havana occupation of the Gamble Site begins around A.D. 300. For fixing the temporal limits of the Havana occupation, two points should be noted. No sherds of Fettie Incised, a type diagnostic of the early phase of the Havana Tradition, were found at either Gamble or Purgatory Swamp. Two sherds from Purgatory Swamp (Fig. 10, C, G) might, however, be derivatives of Fettie Incised. Nor have any sherds of classic Hopewell or Weaver Ware appeared in any of the Wabash Havana sites. Thus the Wabash sites should be dated later than the earliest phase and prior to the "Hopewellian Phase" of Havana. Using Illinois radiocarbon dates as a rough guide (See, for example, Griffin 1958) we shall suggest that some portion of the time span between 500 B.C. and A.D. 1 would cover the occupation of the Gamble and Purgatory Swamp sites.
The Allison Culture

Sites of the Allison Culture are associated with Stoner Cordmarked pottery which occurs in large quantities on the Stoner Site (Cw109), the Fox-McCarty Site (Cw125), the Allison Village (Lw249), and the Garden Site (Lw219). There are also a few sherds of Stoner Cordmarked at the Purgatory Swamp Site (Lw95), a multicomponent site with Archaic, La Motte, Havana, and Mississippian occupations.

Subsequent survey work by Denzil Stephens (n.d.) has added twenty-three sites with minor representations of the Allison Culture in the Wabash and Embarrass drainages.

More recently still, considerable quantities of Allison Culture ceramics and projectile points have been recovered by James Kellar of Indiana University at the Mann Site (Adams 1949) in Posey County, Indiana. This multicomponent site is located on the Ohio River near its junction with the Wabash and may have been a regional "ceremonial" center for the smaller village clusters of the Allison Culture. At least the assemblage recovered by Kellar is more elaborate than that known from our surface reconnaissance or from the 1963 excavations of Mssrs. Denzil, Orlin, and Lynn Stephens at the Stoner Site in the central Wabash Valley.

Settlement Pattern and System. All of the sites of the 1963 survey were located on the T-1, with the Stoner and Fox-McCarty sites on the south side of Sugar Creek where it cuts through the T-1 of the Wabash, the Allison Village and Purgatory Swamp sites on the edge of the T-1 of abandoned channels of the Wabash, and the Garden Site on the T-1 of the Embarrass. The Mann Site is described by Adams (ibid.) as being "... located upon a terrace of the Ohio River which is normally flood free ... a slough separates the occupied area from the present river channel." Data are not as yet available on the twenty-three new loci reported on the Stephens (n.d.).

All of the sites are on level, extremely sandy clay areas, with the exception of the Stoner Site, which is located on slightly sandy clay, and the Mann Site is described by Adams (1949) as being on a "sandy clay loam." Apparently the preference for T-1 loci and sandy clay areas is quite consistent.

It is impossible at present to reconstruct the settlement system, but the known villages do tend to form clusters, with one unit consisting of a concentration of sites in eastern Crawford County in the vicinity of Stoner and Fox-McCarty, another in eastern Lawrence County around Allison and Garden some thirty miles south of the first group, and Mann constituting a third unit some 100 or more miles by river to the south of the Lawrence County unit.

Other sites located by Stephens (n.d.) appear as a thin scatter in the Embarrass and central Wabash valleys and may represent sites ancillary to the main concentrations. Obviously, a survey of the Indiana side of the Wabash is needed for determining whether Allison Culture sites extend southward to Mann along a corridor bypassing the area of the putatively contemporaneous Crab Orchard Culture, the sites of which occupy the western side of the lower Wabash valley.

Description of Sites. Only the Stoner and Garden sites could be checked adequately during the survey. Stoner covers an area of some three to five acres, Garden only about an acre. Only fringe zones of Allison and Fox-McCarty were open for checking, and part of the latter site was covered by a heavy La Motte Culture occupation. Mann, of course, covers a very large area, but it is not known how much of this actually pertains to the Allison occupation.

Mounds are found in conjunction with all the 1963 sites, excepting Garden. None of these mounds can be identified as to cultural affiliation, but the fill in a mound (Cw104) excavated by Stephens (n.d.) at the La Motte Culture Lowe Site, which is only a short distance downstream from Stoner, has midden material characteristic of the Allison Culture placed around the central burial, possibly indicating construction of the mound by Allison peoples, although a few sherds of Embarrass Simple Stamped are also reported from the same fill.

A single large mound occurs at Stoner at the northeast corner of the semicircular village. Ten mounds are immediately north of the Allison Village, and another ten have been reported as being with this group. But north of the Allison mounds is another La Motte Culture village. The fifteen mounds of Fox-McCarty and the sixteen mounds of Purgatory Swamp are, of course, unassignable to any of the components on either of these sites.

Excavations at the Stoner Site (Stephens n.d.) uncovered evidence for superimposed circular houses and shallow, rather amorphously-shaped pits.
TABLE 3

TRAITS LIST OF ARTIFACTS OF THE ALLISON CULTURE FROM 1963 SURFACE COLLECTIONS AND FROM EXCAVATIONS (STEPHENS N.D.) AT THE STONER SITE.

GENERAL UTILITY TOOLS
- Leaf-shaped knives
- Lanceolate knives
- Backed knives
- Lamellar flake knives
- Dickson Broad Bladed knives
- Flake side-scrapers
- Flake end-scrapers
- Keelend end-scrapers

FABRICATING AND PROCESSING TOOLS
- Grooved sandstone abraders
- Sandstone files
- Bone awls
- Drills
- Reamers
- Gravers
- Spokeshaves

DOMESTIC EQUIPMENT
- Pebble manos
- Pottery jars, bowls, and plates

WOODWORKING EQUIPMENT
- Tapered poll celts
- Rectanguloid celts
- Rectanguloid adzes

ORNAMENTS
- Rectanguloid gorgets (2-hole)

CEREMONIAL EQUIPMENT
- Clay elbow pipes
- Sandstone elbow pipes

WEAPONS
- Lowe Flared Base points
- Affinis Snyder's points

SUBSISTENCE PATTERN. No vegetable remains were
reported by Stephens from the Stoner excavations,
and the scarce bone fragments were unidentifiable,
but the excavations at Mound Cw104 produced a
quantity of faunal material, predominantly deer,
but including river mussels, small mammals, a few
bird bones, turtle, and fish common to the Wabash
today.

Trade. Numerous artifacts of blue-gray Missis-
sippian chert attest to the importation of this raw
material from southern Indiana or Illinois. Ste-
phens (n.d.) also reports scraps of mica from the
Stoner excavations. Four Brangenberg rims, one
of which is red-filmed, and a complicated stamped
sherd may also be trade items at Stoner, as might
be a rocker-stamped sherd of the Hubele type
at Garden.

Material Culture (Table 3). Among the diag-
nostic items of the Allison Culture, in addition to
the pottery, are Lowe Flared Base points (Appen-
dix IV) made predominantly of imported blue-
gray chert. These points are also diagnostic of the
La Motte Culture, although recent studies by Lynn
Stephens (personal communication) leads him to
conclude that the points of the La Motte Culture
can be distinguished from those of the Allison
Culture on the basis of the angle made by the base
and the sides of the stem. For the time being, we
shall consider the distinction as pertaining to the
varietal level of a projectile point type that has
undergone slight changes through time.

Stoner Cordmarked pottery (Fig. 14, K-N) is
typified by broadly spaced (2-3 mm. apart), deep-
ly impressed cordmarking which runs vertically
from the squared rim. Cords are tightly twisted
and decoration is usually confined to deep, vertical
notching of the lip (rarely interior or exterior
notching), but a single stamped sherd (Fig. 14, 0)
is known from Allison Village. The paste contains
copious quantities of sand and the surface often
feels like a fine-grained sandpaper. The only vessel
form known is a jar of an unknown shape with
moderate neck constriction and eversion of the
rim. Wall thickness ranges from 5 to 8 mm.

Stoner Plain is identical to Stoner Cordmarked
in paste, but nothing is known about vessel shape,
decoration, or rim type. It is conceivable that
Stoner Plain is nothing but the lower portion of
Stoner Cordmarked vessels.

Cultural Affiliation. Antecedents for the Allison
Culture are unknown in the Wabash Valley,
and no other Midwestern culture can be singled out as
a specific source.

A connection with the La Motte Culture is also
suggested on the basis of the sharing of the dis-
tinctive Lowe Flared Base points and in features
of the ceramic complex. Stoner Cordmarked is a
likely antecedent for Embarrass Cordmarked (Ap-
pendix I), which has vertical lip notching as
well as interior lip notching. Both Allison and
La Motte also have long, narrow lamellar flake
blades which contrast with the short, broad lamel-
lar flake blades of other Middle Woodland cultures
in the Wabash Valley. As a hypothesis, we shall
suggest that Allison is in part antecedent to the
La Motte Culture (below).

Temporal Position. Our guess is that the Allison
Culture is earlier than A.D. 400 and later than
A.D. 1, assuming that the Brangenberg rims are
trade materials at Stoner and that the La Motte
Culture is derived in part from the Allison Culture.
The Crab Orchard Tradition

Extending across the Shawnee Hills and the lower portion of the Mt. Vernon Hill Country is a series of sites which show great similarity in their paddle-edge impressed and cordmarked ceramics and lithic material. There is a growing tendency to refer to these sites as components of a regional tradition which has been named after pottery types defined by Maxwell (1951) for sites along Crab Orchard Creek, a tributary of the Big Muddy River.

Definition of the Crab Orchard Tradition is rather difficult in terms of a precise statement of its material content since its origins apparently involve the hybridization of local culture with an intrusive southern culture, and its development through time involves subsequent interactions with more remote northern and southern groups.

In terms of origins, Crab Orchard probably began with a mixing of a local culture typified by the Sugar Hill series of ceramics (Maxwell 1951) and an intrusive culture typified by paddle-edge or cord-wrapped-stick impressed pottery (Maxwell’s Crab Orchard Fabric Impressed). Evidence for this hypothesis is still unpublished, although Maxwell (1951: 170) notes that “Sugar Hill Cordmarked pottery appears to decrease in popularity in direct proportion to the increase in popularity of Crab Orchard Fabric Marked.” Subsequent excavation and surface survey by the author in the Cache River Valley showed that Sugar Hill Cordmarked occurs only in the northern section of the valley which is immediately adjacent to the Big Muddy drainage. Also in Kerr Canyon Shelter No. 10 (SIU 24B4-98) Sugar Hill sherds occur without admixture of Crab Orchard sherds. The Crab Orchard series, on the other hand, extends throughout the Cache drainage and is continuous in distribution with the paddle-edge or cord-wrapped-stick impressed pottery of Caldwell’s (1958) Middle Eastern Tradition. (Baumer sherds are limited to six sherds from the upper 30 centimeters of the Duran Rock Shelter, SIU 24D2-137, with no sherds from surface collections, although the Cache River drainage is directly contiguous to the Baumer area in Pope and Massac counties. Obviously, Baumer is a very localized manifestation of the Middle Eastern Tradition which has from the historical accident of its early excavation assumed an importance in the literature somewhat out of proportion to its role in the prehistory of southern Illinois.)

Whether or not one accepts the Illinois State Museum radiocarbon date of A.D. 565 ± 200, we feel that Baumer represents a separate and perhaps later intrusion of another segment of the Middle Eastern Tradition into a geographically very delimited area of the Ohio Valley. Such a conclusion is based upon the very high proportion of limestone-tempered “fabric-impressed” pottery as contrasted to cordmarked pottery, the high frequency of Copenoid blades (Cf. Cole 1951: Fig. 62, Nos. 15-18), and the presence of reel-shaped gorgets with holes drilled from one side in the Adena fashion. While the latter items are present in Crab Orchard, they are drilled from both sides and occur predominantly in the middle zone at the Sugar Hill Site (Maxwell 1951: 123). Crab Orchard does not have limestone-tempered pottery, and Copenoid blades are rare.

But since Crab Orchard and Baumer do share common vessel forms and one of the types of the Tamms Type Cluster (Type 4E of Maxwell 1951: 246; Cole 1951: Fig. 62, No. 5), we view their relationship as one of derivation from a larger cultural unit of the Middle Eastern Tradition rather than one of direct interaction or derivation of one from the other.

Furthermore, salvage work at the Geodetic Dome Site, (SIU 24B4-44) on the Southern Illinois University campus has led to the discovery of a sizable occupation area with Sugar Hill Cordmarked and Crab Orchard Plain pottery, but without the Crab Orchard series (Melvin L. Fowler, personal communication). Fowler’s work for the Illinois State Museum at the Weber Village would also tend to substantiate the present hypothesis of the priority of the Sugar Hill Culture in the Big Muddy drainage (Fowler, personal communication).

The earliest phase, then, of the Crab Orchard Tradition would be typified by grit-tempered ceramics such as unnoded Crab Orchard Fabric Marked and a late form of Sugar Hill Cordmarked which resembles Crab Orchard Cordmarked without noding. It is difficult to say what projectile point types were associated with this phase since the lower zone at Sugar Hill contains a large number of points which would normally be associated with the Late Archaic. Furthermore, Maxwell’s form types would include in some cases a number of discrete and culturally distinctive types. For example, Type 3B (Maxwell 1951: 246) includes Snyders Notched, Affinit Snyders Notched and some examples of the earlier and contemporaneous
Tamms Type Cluster, while Type 4E includes examples of the Archaic Saratoga Stemmed and Cypress Expanding Stemmed and some points of the Early and Middle Woodland Tamms Type Cluster (Winters n.d., a). Apparently, only a re-analysis of the projectile points in terms of later stratigraphic data can resolve this problem, and such an analysis may be difficult in view of the present scattered distribution of the original collections. Data from new excavations in single component sites would probably provide better information for typological purposes than the mixed Archaic, Early, Middle, and Late Woodland components of the Sugar Hill Site. (The preceding remarks would also apply to many of the “classic” type sites of Illinois which are also multicomponent. When many of these sites were dug, the Archaic was barely postulated or defined, and Archaic materials are often presented as Woodland in the reports.)

So far no good evidence has been found for the early phase of the Crab Orchard Tradition in the Wabash Valley although there may be such a component at the shell midden known as Bennett’s Wabash Site (Wh92).

However, the succeeding “middle” phase of the Crab Orchard Tradition is well represented in the lower twenty miles of the Wabash (Fig. 7) with one site as far north as 36 miles from the mouth in Gibson County, Indiana, (M. G. Klutz [Weber] Site, SIU 25Gl-10). There were also 27 Crab Orchard Fabric Impressed sherds at the Gamble Site (Gillihan and Beeson 1960), but these are probably best regarded as trade sherds.

This phase is exceedingly complex and probably will have to be divided into two or more phases or sub-phases. Changes that take place in utility pottery include the introduction of the noded Crab Orchard Cordmarked, the use of grog tempering, and a thinning of the vessel walls (e.g., Maxwell 1951: 154-155, 160-161). In connection with the question of tempering, we should like to note that thin-sections of two “paddle-edged” sherds and one cordmarked sherd of the Crab Orchard series from Hubele have been analyzed by James Porter of the Museum of Southern Illinois University. All three were grog-tempered with the grog itself probably tempered with sand.

In addition, Snyders or Affinis Snyders points are added as an important companion type to types of the Tamms Cluster. As indicated previously, Snyders points are a basic artifact of the Havana Tradition.

But the most striking characteristic of the latter portion of this phase is the evidence of the participation of the Crab Orchard Tradition in a much larger interaction sphere (Hopewellian) with a resultant cultural elaboration. Two large centers appear: one, the Twenhafel Site on the Big Muddy-Mississippi flood plain, and the other, the Hubele Site on the Wabash flood plain. The function of these centers is unknown, but they are usually assumed to be ceremonial centers. Only much larger excavations can provide data suitable for solving the problems of site function, but the elaborate ceramics of these two centers do stand in marked contrast to the predominantly utilitarian pottery of the surrounding simple hamlets or villages.

We cannot begin to cover the complex problem of the decorated ceramics of the “middle” phase in such a short summary, but we shall indicate something of the nature of the problems. First of all, at Twenhafel, decorated Havana Ware sherds appear as intrusive items in Crab Orchard, later being replaced by Hopewell Ware, Brangenberg, and a zone-decorated pottery which is more reminiscent of pottery of more southern affiliations (Joseph R. Caldwell, personal communication on the Twenhafel excavations). The decorated pottery (excluding obviously later material) from Hubele is very similar to the Twenhafel pottery with the exception that classic Hopewell, in Griffin’s (1952) usage of the term, either does not appear or is very rare. Thus we feel that Neumann’s and Fowler’s (1952) use of the term Hopewell to describe the zoned andFK stamped ceramics of Hubele is in need of re-examination, a suggestion with which Fowler enthusiastically agrees (personal communication, August, 1962). The foregoing conclusion has recently been reinforced by reports from James Porter on thin-sections of five zoned and stamped sherds from the Hubele Site. A plain-zoned (Cf. Neumann and Fowler 1952: Pl. 88) and a rocker-stamped sherd were found to be tempered with sand-tempered grog. A dentate-stamped sherd tentatively identified as Neteler Stamped probably had sand and grit tempering. A punctated sherd and a dentate-stamped sherd had either crushed sand or grit tempering. Thus, there would seem to be two series of decorated sherds from Hubele, one having affinities with Havana Ware and another grog-tempered group with affinities to zoned pottery from Twenhafel and other sites of more southern distribution.
We also suspect that some of the Hubele sherds identified as Hopewell Plain and Wabash Bar-stamped are actually Late Woodland types associated with the Duffy Complex located near the mouth of the Wabash.

We shall not elaborate on the variety of items which appear as grave goods during this phase, but simply note that structural features and grave goods of the Wilson Mound Group (Neumann and Fowler 1952) are probably typical of the lower Wabash Valley mortuary practices.

Before concluding our summary remarks on the Crab Orchard Tradition in the Wabash Valley, we shall comment on changes in distribution patterns of the Crab Orchard Tradition. Pottery and projectile points of early Crab Orchard are widely distributed in southwestern Illinois in the Shawnee Hills area and the lower portion of the Mt. Vernon Hill Country. With the subsequent phase, however, there is a marked withdrawal from the Shawnee Hills area and a concentration of large sites on the broad T-1 of the Big Muddy. For example, from some 420 sites in the Cache Valley which were intensively surveyed, over a five-year period, items assignable to the later phase include one platform pipe, 37 Snyders points (including points reworked into scrapers, spokeshaves, and gravers), one zoned sherd, two dentate-stamped sherds, one rocker-stamped sherd, and 16 Crab Orchard Cord-marked or Fabric Impressed sherds. The total is hardly impressive from a valley that had been one of the most heavily occupied areas of the Midwest during the latter part of the Archaic.

As previously noted, there was also apparently a movement into the Wabash Valley after the early period, with heaviest occupation being north of the Shawnee Hills on the broad T-1 of the river. In addition, in both the Twenhafel and Hubele areas, use was made of the flood plain for "ceremonial centers" and living areas, a practice which departs radically from earlier Woodland settlement patterns. Why such a shift should have occurred from a dispersed pattern covering a variety of physiographic zones to a concentrated pattern emphasizing occupation of both a broad T-1 and the T-0 itself can only be solved by excavations with techniques oriented toward the solution of such a problem. One might propose as a negative hypothesis that the Crab Orchard people were doing something besides shooting deer and gathering nuts.

The rich "Hopewellian" content of the Crab Orchard sites in the Wabash also gives promise of providing abundant data bearing on the nature and processes involved in producing what is called by some Illinois archeologists the Hopewellian Interaction Sphere.

Within the Wabash Valley north of the Crab Orchard area, there is some evidence for either limited movements of Crab Orchard peoples or trade. In the eroding fill of the Doll Mound (Lw193) there was a single rocker-stamped sherd; at Garden (Lw219), a rocker-stamped and a zoned-stamped sherd; at Spellman No. 3 (Lw224), three rocker-stamped sherds (Fig. 10M) and one punctated sherd (Fig. 10N); at Minnow Slough (Cw164), one punctated sherd, two rocker-stamped sherds, one incised sherd, and two fine-paste sherds; at Lowe (Cw107), a zoned sherd reminiscent of zoned sherds from Hubele (Fig. 14P); at North York (Cv188), one dentate rocker-stamped rim (Fig. 10L), one zoned dentate-stamped sherd with Hubele paste; and at Dunkel (W71), three zoned sherds (Fig. 10, J-K, O) and one dentate rocker-stamped sherd. Four of these sites (Minnow Slough, Lowe, North York, and Dunkel) have heavy La Motte Culture occupations, suggesting that if these are trade sherd, there may have been some overlap between La Motte and the Hopewellian Phase of the Crab Orchard Tradition.

As for the dating of the Crab Orchard Tradition in the Wabash Valley, there is but one firm anchor point at present—the three dates from Mound 6 of the Wilson Group (Neumann and Fowler 1952; Griffin 1958: 12, Fig. 2). The range of these dates, given as 130 B.C. to A.D. 0, is a clue to the period of full participation of Wabash Crab Orchard in the Hopewellian Interaction Sphere, in view of the effigy platform pipes and copper celt in the tomb of Mound 6. (We reject Libby's subsequent date from the same sample of A.D. 1227 as being completely impossible.)

As a tentative temporal sequence, then, we shall propose the following:

(1) The "Early Phase" of Crab Orchard is sparsely represented in the Wabash so far, indicating that the tradition may not have appeared there much before 500 B.C.

(2) The "Early Middle Phase" of Crab Orchard may be marked by the presence of trade sherds of Havana Ware, including Neteler Stamped. As previously indicated, we do not feel that the Havana Tradition persisted in the Wabash much after A.D. 1. Accordingly, we shall suggest a range between 500 B.C. and A.D. 1 for the "Early Middle Phase."
(3) The Hopewelian ("Middle Middle") Phase of Crab Orchard would date after A.D. 1 with a terminal date somewhere in the vicinity of A.D. 500. Such a terminus is predicated on the basis of the radiocarbon date of A.D. 432 ± 200 from the Rutherford Mound (Fowler 1957) which is located not far from the mouth of the Wabash and has ceramics suggestive of a lateness within the Hopewelian Interaction Sphere.

The foregoing sequence would provide a general basis for cross-correlation with equivalent archaeological manifestations in better dated areas of the Midwest, but considerable revision can be expected once stratigraphic sequences and more dates become available from Crab Orchard Tradition sites in the Wabash drainage.

THE LA MOTTE CULTURE*

One of the more interesting cultures of the Wabash Valley is the newly defined La Motte Culture. The simple stamped pottery commonly found on La Motte sites has been known for some time (Beeson 1952; Helman 1952), but little was known about either its cultural context, distribution patterns, or temporal position. Fortunately, during the present survey, we were able to locate numerous examples of the circular La Motte villages, many of them unmixed or only slightly mixed with earlier or later materials. We were also able to draw on the extensive information accumulated by Denzil Stephens in recent years about sites of the La Motte Culture. His critical analysis of surface collections had already provided much of the basic data for definition of the new culture, including the existence of circular villages.

Sites of the La Motte Culture are concentrated along the edge of the Springfield Plains in Clark and Crawford counties, on the northern edge of the Mt. Vernon Hill Country around Lawrenceville and for an unknown distance up the Embarrass drainage (Fig. 11). Although the aforementioned areas constitute the "heart" of the La Motte Culture, the distinctive ceramics of the culture are known from as far south as the mouth of the Wabash and as far north as the Kankakee and St. Joseph drainages in St. Joseph County in northern Indiana (data from Ernest Young Collection, Illinois State Museum), but the Embarrass ceramics are very rare in these latter areas.

The villages are often located along the edge of the T-1 of the Wabash and Embarrass at points where small tributaries cut through the edge of the terrace. Villages were placed in open wooded areas on the edges of the vast expanses of prairie grass known historically as La Motte, Allison, and Oblong prairies, and the Sand Barrens, and close to the sloughs and thick woods of the Wabash flood plain. Apparently the La Motte culture had a decided prairie orientation, since 97 percent of the known villages occur on or near the Springfield Plains (Fig. 11). Extremely sandy or slightly sandy clays underlie the village areas.

Village size varies, ranging from five to ten acres in total extent. However, the Chenoweth Site is much larger (about 60 acres) and has numerous large and small mounds on the site itself. Perhaps the latter site is a ceremonial or "political" center for the thirty La Motte villages (Fig. 11) which we have located so far in the Wabash Valley. The village plan is uniform, consisting of a circular, central plaza surrounded by a dark midden area presumed to represent a circle of houses (Fig. 12). A feature noted for several villages is the placement of the house circle so that one portion covers a natural knoll. Such an arrangement seems to have been intentional since the entire village could easily have been accommodated on adjacent level areas. Only excavation can provide the solution of the latter enigma.

Near some of the villages are groups of small, conical mounds with some of the larger groups having as many as forty to fifty mounds. Little is known about the mound contents, although many of them have been "potted" in years gone by. Certainly, we shall need to investigate some of these to learn about the religious beliefs and customs of the La Motte people.

Other small sites with a few La Motte sherds or points are probably the remains of seasonally occupied camps or represent interaction with nearby cultures.

Material culture is amazingly uniform and unchanging throughout the sites of the La Motte Culture. Perhaps most obvious is the pottery, which is quite different from the ceramics prevalent in other areas of Illinois. (The following section is based on analysis of a sample of 884 simple stamped sherds, 552 cordmarked sherds, and 34 check stamped sherds, and the analysis of six thin-sections of Embarrass Simple Stamped and Cordmarked by James Porter of the Museum of

*This section is a revised version of Report No. 9, Council for Illinois Archaeology (Winters 1962b).
CENTRAL AND LOWER WABASH RIVER VALLEY
ADAPTED FROM J.A. BIER, 1956

LA MOTTE CULTURE
+ Villages
- Minor Occurrences of Sherds & Points

SCALE IN MILES

BOUNDARY BETWEEN SPRINGFIELD PLAINS & THE MT. VERNON HILL COUNTRY
Southern Illinois University.) The pottery is predominantly simple stamped (Fig. 13, A-E), with such sherds constituting from 60 to 65 per cent of the pottery on a La Motte site. Decoration is limited to interior notching of the rim or lip, with notching often so pronounced that the rim has a distinct pie crust effect, and to a few cylindrical or red punctures on the exterior of the vessel. Vessel shapes include elongated jars with rounded bottoms, slightly constricted necks, and slightly everted rims, and constricted orifice bowls. Tempering consists of both sand and grit which often occurs as large unmodified pebbles. A companion type is check stamped pottery (Fig. 13, H-J), which never exceeds one to two per cent of the total sherds on a La Motte site. These types, which have been named Embarrass Simple Stamped and Embarrass Check Stamped (Appendix I) are probably related to similar ceramics which occur commonly in Tennessee, northern Georgia, and other areas of the South.

Less common than the simple stamped pottery is Embarrass Cordmarked (Fig. 13, F-G), which averages from 30 to 35 per cent of the sherds on La Motte sites. The cordmarked vessels are similar in most technical details to the simple and check stamped pottery, but there is a wider range of vessel shapes. Another important difference between the two groups is found in the manner of paddling of the surface. The grooves of the simple stamped pottery run parallel (rarely diagonally or vertically) to the vessel rim while the cordmarking runs vertically (rarely diagonally or horizontally) from the rim. Cordmarking is quite variable, ranging from closely spaced, tightly twisted, fine cordmarking to rather widely spaced, loosely twisted, coarse cordmarking. Occasionally the cordmarking is partially obliterated by smoothing, a technique which is very common on the simple stamped pottery.

Although technically fascinating, the La Motte pottery can safely be said to be one of the aesthetically less imaginative and more monotonous pottery series of the Midwest.

Another diagnostic artifact is an expanding stem projectile point type we call Lowe Flared Base (Fig. 14, F-J; Appendix II). These points are quite distinctive and so far are extremely rare outside of the area of the La Motte Culture, although some Swift Creek points have the same shape (Fairbanks 1952: Fig. 157B; Kellar et al. 1962: Fig. 3K). Salient characteristics include: a markedly flaring, straight-sided stem; straight (rarely concave or convex) base; beveling of all edges of the sides of the stem; frequent grinding of the sides of the stem; beveling of the base; frequent beveling of the edges of the blade; high incidence of hexagonal and lenticular cross sections; and a lanceolate or triangular blade. Over 85 per cent of the points are made from blue or gray cherts (Dongola Series) which would have had to have been imported from sources in the hills of southern Illinois or Indiana some 100 miles away. Once the attributes of these points have been learned, we doubt that there would be any possibility of confusing Lowe points with other expanding stem types.

Other common artifacts are lamellar flake blades (Fig. 14E), also made of the imported blue chert, elbow pipes with rectanguloid cross sections made of sandstone, rectanguloid celts (Fig. 14A) made of slate or from igneous river pebbles, rectanguloid gorgets (Fig. 14B) made of slate, limestone, or various exotic stone, and perforated with holes drilled from both sides, numerous pebble manos, grooved sandstone abraders (Fig. 14D), and bar-type atlatl weights (Fig. 14C) made of limestone. The concepts of linearity and rectangularity dominate the shape preference throughout the technology of the La Motte people.

We have mentioned previously that Lowe points and lamellar flake blades were made of imported blue cherts. A curious anomaly exists in connection with the chert spalls on the site, however. The spalls are predominantly from the small chert pebbles which are found in the local gravels and not from nodules of blue chert. One might leap to the conclusion that the points and flake blades were made elsewhere, but we suspect that the answer lies in the realm of technology. The flake blades are obviously struck off prepared cores and the points seem to have been made on large flakes which were similarly prepared. Such a technique of tool manufacture leaves relatively little waste and then only as very small spalls. The coarse, local cherts, on the other hand, were apparently used only for the manufacture of rather crude blades, choppers, and shredders. The local chert pebbles, which are impure and occur only as small, irregular pebbles, were made directly into tools, with considerable wastage of large spalls and discarding of flawed pieces of chert.

As for origins of some features of the La Motte Culture, we feel that one must turn to the South. The complex of simple and check stamped pottery, rectanguloid elbow pipes, and the plaza concept,
SKETCH MAP OF THE BUMBLE BEE SITE Cl'y 233

Figure 12
FIGURE 13

LA MOTTE CULTURE ARTIFACTS (A, approx. one-fifth scale; B, F-H, approx. three-eighths scale; C-E, I-K, approx. three-quarters scale.

Embarrass Simple Stamped Jar
   A. Site Cw282

Embarrass Simple Stamped
   B. Jar rim. Chenoweth Site, Cl185
   E. Bowl rim. Bumble Bee Site, Cl233

Embarrass Simple Stamped, decorated varieties
   C. Reed punctate. Chenoweth Site, Cl185
   D. Incised. Lowe Site, Cw107

Embarrass Check Stamped
   H. Site unknown.
      I. Purgatory Swamp Site, Lw95
      J. Musgrave Site, Cw205

Embarrass Cordmarked
   F. Chenoweth Site, Cl185
   G. Bumble Bee Site, Cl233

Unclassified Zoned Sherd
   K. Lowe Site, Cw107

J-K, Denzil Stephens collection; A-I, Illinois State Museum collections; A was a gift of Denzil Stephens.
LA MOTTE CULTURE AND ALLISON CULTURE ARTIFACTS (A-D, approx. three-eighths scale; E-P, approx. three-quarters scale)

Rectanguloid Celt
    A. Bumble Bee Site, Cl233

Rectanguloid Gorget
    B. Bumble Bee Site, Cl233

Bar Arlatl Weight
    C. Bumble Bee Site, Cl233

Sandstone Abrader
    D. Lowe Site, Cw107

Lamellar Flake Blade
    E. Lowe Site, Cw107

Lowe Flared Base Projectile Points
    F. Chenoweth Site, Cl185
    G. Bumble Bee Site, Cl233
    H. Chenoweth Site, Cl185
    I. Lowe Site, Cw107
    J. Lowe Site, Cw107 (reworked into a drill)

Stoner Cordmarked Sherds
    K. Stoner Site, Cw109
    L. Fox-McCarty Site, Cw125
    M. Stoner Site, Cw109
    N. Stoner Site, Cw109

Stoner Plain Sherd, Cord Decorated Variety
    O. Allison Mounds, Lw250-Lw259

Unclassified Zoned Sherd
    P. Lowe Site, Cw107

A-O, Illinois State Museum collections; P, Denzil Stephens collection.
Figure 14
all point to the Tennessee Valley and adjacent areas as possible loci for the derivation of the La Motte Culture. One should also note that the Archaic Riverton Culture which occurs in the same area as the La Motte Culture (Winters and Stephens n.d.) has strong ties with the Tennessee Valley rather than with indigenous Archaic cultures of the Wabash Valley. Perhaps the pattern of southern infiltration into the central Wabash Valley involves a very old and long enduring cultural nexus which took advantage of the distinctively southern biota typifying the "Indiana Pocket" in the central and lower Wabash.

But the La Motte Culture represents more than an intrusion of a southern group or influence into the Wabash Valley. The presumably earlier Allison Culture, which occurs in the same area as the La Motte Culture, could well have been the source for Embarrass Cordmarked and Lowe Flared Base points. Embarrass Cordmarked shares many traits of rim decoration with Stoner Cordmarked, and Lowe points are basic to both the Allison Culture and the La Motte Culture. Present evidence would indicate, then, that La Motte represents a fusion of elements from an indigenous complex with intrusive elements from the South. The processes by which such an integration of technologies may have taken place are a complete unknown.

Dating is still uncertain, but we do know that a La Motte village is on top of the Gamble Site (Lw11). Thus the La Motte Culture should postdate the Havana Tradition occupation at this site. Curiously enough, the presence of Embarrass Simple Stamped pottery was not noted at the Gamble Site by Gillihan and Beeson (1960) although it is common in surface material from the site in the research collections of the Museum of Southern Illinois University. The companion type to Embarrass Simple Stamped, Embarrass Cordmarked, is illustrated, however, and quantitatively comprises 59 per cent of the identifiable sherds from the site (Gillihan and Beeson: Fig. 35; Fig. 40B). Fowler (1957) reports a tetrapodal simple stamped vessel from the Rutherford Mound, a late Middle Woodland site, which has a radiocarbon date of A.D. 432 ± 200; but we are not sure that the latter vessel belongs within the Embarrass Series since tetrapodal supports are unknown in the Embarrass Series. Emily Blaisingham has also informed us that simple stamped pottery is associated with Yankeetown sherds at the bottom of the Equality Salt Springs Site in Gallatin County, Illinois. Thus we can say that the La Motte Culture is post-

Havana Tradition and pre-Mississippian in age. One should also note that in the hearth area of the La Motte Culture there is only a thin representation of the Allison Culture which presumably follows the Havana Tradition and that the Havana Tradition apparently does not persist long enough in the valley for classic Hopewell pottery to appear. Since we cannot quite conceive that the valley remained a partial cultural vacuum for several centuries, we shall suggest tentatively that the La Motte Culture appeared before A.D. 400 and persisted until A.D. 1000, with the possibility of some overlap with Mississippian.

Perhaps the La Motte Culture was also a source for some of the simple and check stamped pottery which appeared in the Illinois Valley in late times. Its relationship to stamped Osasco, Iroquois, and Plains pottery, if any, is obscure, but most of these are probably later than the Embarrass Series.

Only excavation can verify and amplify our observations. Certainly, the La Motte Culture offers some of the most promising opportunities for the solution of anthropological problems that we have ever seen in an archaeological survey.

LATE WOODLAND OCCUPATIONS
Under Late Woodland we shall include the Albee Complex, the Duffy Complex, and the Yankeetown Culture. There are undoubtedly other minor Late Woodland representations in the Wabash, but too little evidence was found to permit any sort of preliminary description.

The Albee Complex
The Albee Complex is known from the survey from four sites in Clark County (Fig. 15). Three of these are the conjoined sand knolls designated Murphy 1, 2, and 3 (C183, CI229, CI230). The fourth site is the Chenoweth Site, where Albee material occurs as a thin scattering on a site with a heavy La Motte and a light Mississippian occupation. None of these Albee sites can be considered as much more than camps of some sort. All of the Clark County sites are on the T-1 of the Wabash.

Actually the Clark County sites would seem to be outliers of a heavier occupation to the north and east in Sullivan, Greene, and Vermillion counties, Indiana. Included in the latter area would be the Albee Mound (MacLean 1931) in Sullivan County and the Catlin Site and other "villages" in Vermillion County, recently reported by Mr. Thomas Razmus of Georgetown, Illinois, and Mr. John Henry of Danville, Illinois. The Vermillion
Figure 15

CENTRAL AND LOWER WABASH RIVER VALLEY
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SPRINGFIELD PLAINS

MT. VERNON HILL COUNTRY

x Duffy Complex
+ Albee Complex
△ Yankeetown Pottery

BOUNDARY BETWEEN SPRINGFIELD PLAINS & THE MT. VERNON HILL COUNTRY

Scale in Miles
FIGURE 16

ALBEE COMPLEX ARTIFACTS (A, approx. three-eighths scale; B-N, approx. three-quarters scale)

Albee Cordmarked Sherds
A. Cambered rim, cordmarked lip. Catlin Site, Vermillion County, Indiana
B. Peaked rim, interior notched rim. Catlin Site, Vermillion County, Indiana
C. Cambered rim, exterior punctate, plain lip. Catlin Site, Vermillion County, Indiana
D. Exterior punctate, interior notched rim. Catlin Site, Vermillion County, Indiana
F. Channeled rim, cordmarked lip. Catlin Site, Vermillion County, Indiana
G. Cambered rim, cordmarked lip. Murphy No. 1, CI83

Albee Fabric Impressed Sherd
H. Catlin Site, Vermillion County, Indiana

Notched Fillet Rim
E. Murphy No. 3, CI83

Mounds Stemless Points
I. Catlin Site, Vermillion County, Indiana
J. Catlin Site, Vermillion County, Indiana

Diagonally Notched, Pentagonal Blade Points
K. Catlin Site, Vermillion County, Indiana
L. Catlin Site, Vermillion County, Indiana

Notched Head Drill
M. Murphy No. 2, CI229

Bone Gaming Piece
N. Catlin Site, Vermillion County, Indiana

Figure 16
FIGURE 17

"TRADE" SHERDS OF THE ALBEE COMPLEX
From the Thomas Razmus Collection (approx. three-quarters scale)

Ramey Incised Sherds
   A. Catlin Site, Vermillion County, Indiana
   B. Catlin Site, Vermillion County, Indiana

Powell Plain Sherds
   D. Catlin Site, Vermillion County, Indiana
   F. Catlin Site, Vermillion County, Indiana

Polished Black
   E. Catlin Site, Vermillion County, Indiana

Bean Pot
   C. Catlin Site, Vermillion County, Indiana
Figure 17
FIGURE 18

DUFFY COMPLEX AND YANKEETOWN CULTURE (approx. three-quarters scale)

Duffy Decorated, Bar Stamped Variety
   A. Jar. Little Chain Site, Wh90
   C. Jar. Little Chain Site, Wh90
   E. Jar. Little Chain Site, Wh90
   H. Bowl. Little Chain Site, Wh90

Duffy Decorated, Incised Variety
   B. Jar. Little Chain Site, Wh90

Duffy Plain
   D. Bowl. Little Chain Site, Wh90

Duffy Cordmarked
   F. Jar. Little Chain Site, Wh90
   G. Jar. Little Chain Site, Wh90

Unclassified Collared Rim
   I. Peankishaw Bend Site, W100

Yankeetown Incised
   J. Little Chain Site, Wh90
   K. Purgatory Swamp Site, Lw95
   L. Peankishaw Bend Site, W100

Yankeetown Filleted
   M. Peankishaw Bend Site, W100

A-J, L-M, Illinois State Museum collection;
K, Denzil Stephens collection.
County sites are located both upon upland ridges and lower sandy terraces bordering the Wabash Valley. The Catlin Site has several examples of Ramey Incised, Powell Plain, and bean pot sherds which were found in refuse pits with Albee ceramics (Fig. 17). So far as we know, Ramey Incised and Powell Plain have not been previously reported from the Wabash Valley. The Shaffer Cemetery (Black 1933) in Greene County, Indiana, also belongs to the Albee Complex and is on the southern margin of the area covered by the Albee Complex as presently known.

The most distinctive artifact of the Albee Complex is a grit-tempered cordmarked jar with a folded wedge-shaped or cambered rim. A number of such vessels are illustrated for the Albee Mound (MacLean 1931). Typically they are slightly elongated or globular, with a constricted neck and everted rim. Both the wedge-shaped rim and the body are covered with closely spaced cord impressions which run vertically from the lip (Fig. 16, A-D, F-G). Occasionally, the interior of the lip is decorated with short, vertical or diagonal impressions made by a plain or a cord-wrapped stick (Fig. 16, B,D). A few cylindrical punctations (Fig. 16, C-D) were also noted on sherds from the Catlin Site in Vermillion County, Indiana, and a vessel from the Shaffer Cemetery has a row of vertical incisions on the neck. Some of the rims from the Catlin Site were peaked.

Also present in the Indiana sites were sherds of a distinctive fabric impressed type (Fig. 16, H). The warp is apparently a rather large, stiff, widely spaced rod, while the weft is much finer, and also widely spaced. The impressions in the clay are quite deep.

Other artifacts assignable to the Albee Complex are listed in Table 4.

Many of the Mounds Stemless points (Fig. 16, I-J) are isosceles triangles with concave sides. Such concave-sided points are rarely found in the Wabash Valley outside of the sites of the Albee Complex, and these points may be a diagnostic trait. Pentagonally bladed, diagonally notched points are also diagnostic of Albee (Fig. 16, K-L).

Trade. Some material has been found in association with sites of the Albee Complex that would suggest rather distant trade relationships. The copper beads and copper gorget of the Albee Mounds would, of course, suggest the importation of copper, and the presence of Ramey Incised and other contemporary types would indicate some sort of relationship with rather distant sites. The presence of Busycon columella, Marginella beads and Littorina palliata beads also indicate distant sources of raw materials or imported "luxury" items.

Cultural Affiliations. The wedge-shaped, cambered, and peaked-rim jars suggest relationships with ceramics from northern Illinois and southern Wisconsin. The latter series of ceramics is extremely complex, and we should hesitate to infer what the relationship of types such as Albee Cordmarked in the Wabash Valley might be to similar material known from the Illinois Valley at Starved Rock and other sites and from Wisconsin at sites such as Aztalan. Dr. Robert Hall of the Illinois State Museum has commented upon the similarity of pottery from Starved Rock to Albee Cordmarked but points out that rims of his type Starved Rock Collared always have inner lip notching. Albee rarely; Albee rims sometimes have channelled rims, Starved Rock never; Albee sometimes has exterior punctates, Starved Rock never; Starved Rock Collared is tempered with black angular grit, Albee Cordmarked with sand and mixed grit of variable size.

A vessel very similar to the Albee Cordmarked jar is also reported from Mound 1, Group 1, of the Utica Mounds (Griffin 1941: Pl. 53, Fig. 1. Henriksen 1957: Pl. 35B). The view illustrated by Henriksen shows that there are no notches on the exterior rim and clearly shows the punctated design on the exterior. This vessel is attributed to an intrusive burial in the mound.

It should be pointed out again that the Albee Complex has not been found south of southern Clark County and that it is concentrated along the Wabash north of there. As a hypothesis we should suggest that the corridor leading from the Illinois River through its tributary the Vermilion River and thence over a low and narrow divo to the Vermilion River of the Wabash may have been the route by which the Albee Complex could have entered the Wabash Valley. Certainly, there is no material known at present which could have been antecedent to the Albee Complex in the Wabash Valley.

Relationships with Mississippian are more difficult to define. We have already indicated the presence of Ramey Incised and other contemporaneous Mississippian pottery at the Catlin Sit Small quantities of plain and cordmarked Mississippian pottery are also present at Murphy 1 and 2, but not at Murphy 3. Thus, the question may be raised whether these Mississippian sherds represent trade, a separate and transient Mississippian...
TABLE 4

COMBINED TRAIT LIST OF THE MURPHY AND CHENOWETH SITES IN ILLINOIS AND THE ALBEE MOUND, SHAFFER CEMETERY, AND CATLIN SITE IN INDIANA: ARTIFACTS OF THE ALBEE COMPLEX.

GENERAL UTILITY TOOLS
- Ovate blades
- Leaf-shaped blades
- Rectanguloid blades
- Backed blades (leaf-shaped and free flake)
- Lamellar blade flakes
- Mounds Stemless blades (triangular and lanceolate)
- Rectanguloid end-scrapers
- Flake side-scrapers
- Keel'd scrapers
- Pebble hammerstones
- Chert choppers

WEAPONS
- Mounds Stemless points (triangular, lanceolate, side-notched, or diagonally notched)

ABRICKATING AND PROCESSING TOOLS
- Keel'd gravers
- Simple drills
- Notched, "V"-Head drills (Fig. 16M)
- Deer bone awls
- Bird bone awls
- Bone shuttles
- Deer bone beammers
- Antler flakers
- Grooved sandstone abraders

DOMESTIC EQUIPMENT
- Simple pebble manos
- Albee Cordmarked and Fabric Impressed jars
- Notched filler jars
- Nutting stones

WOODWORKING IMPLEMENTS
- Rectanguloid chert gouges (?)

ORNAMENTS
- Cut deer jaws
- Cylindrical copper beads
- Cylindrical shell beads (Busycon columella)
- Marginella shell beads
- Littorina palliata shell beads
- Trapezoidal copper gorget
- Rectanguloid slate gorgets
- Trapezoidal stone gorgets (single perforation near top)

AGRICULTURAL OR DIGGING IMPLEMENTS
- None reported

CEREMONIAL ITEMS
- Turtle carapaces (?)

RECREATIONAL EQUIPMENT
- Rectangular bone gaming pieces
- Cut and perforated deer phalanges (cup-and-pin game)

MISCELLANEOUS ITEMS
- "Strike-a-lites"

The Duffy Complex

Only the distinctive ceramics of the Duffy Complex have so far been identified, and these are limited to three sites in the lower ten miles of the Wabash Valley (Duffy, G28; Pepper, Wh93; and Little Chain, Wh90), with a possible extension as far north as the Hubele Site, some seventeen miles from the river's mouth (Fig. 15). The latter surmise is based upon the examination of photographs in Neumann and Fowler (1952) of their Hopewell Plain and Wabash Bar-stamped. We suspect that many of these sherds are actually Duffy Plain or Stamped and represent a later occupation at Hubele. The high incidence of these sherds in the surface materials as opposed to Layer 2 also points out the need for a re-analysis of the Hubele sherds.
From visual inspection of sherds and from data provided by James Porter from the examination of a thin-section of a single sherd, Duffy pottery would seem to be basically gog-tempered. Thickness is variable, depending in part on vessel shape, with simple bowls (Fig. 18, D,H) being rather thick (ca. 8 to 11 mm.) and jars (Fig. 18, A-C, E-G) somewhat thinner (ca. 5 to 10 mm.). Surfaces are generally plain but are occasionally cord-marked. Decoration consists of single or double rows of slightly curved or straight, incised lines or stamped bars. On one example the rows of lines are separated by reed punctates. On jars the decorative bands are on the exterior with bands beginning on the neck or shoulder (Fig. 18, A-C, E). The rounded or flattened lips are sometimes notched on the exterior. On simple bowls decoration is limited to a row of incised lines on the interior rim or the body of the vessel below the rim (Fig. 18H). Surface color is predominantly buff, but there are also many examples of gray- and orange-buff.

As for the remainder of the complex, triangular Mounds Stemless points predominate on the sites where Duffy pottery occurs. Some of the discoidal, tapered and rectanguloid celts, pottery spindle whorls, and triangular Mounds Stemless blades probably belong with the Duffy Complex. However, the presence of a small quantity of Mississippian pottery on one of the sites, some earlier Crab Orchard pottery on all of the sites, and a few sherds of Embarrass Check or Simple Stamped on all of the sites makes specific assignment of these artifacts inadvisable at present.

Cultural affiliation and temporal position of the Duffy Complex are difficult to assess, but the preponderance of plain surfaced, gog-tempered pottery with the presumptive association of triangular points would suggest that the Duffy Complex should equate temporally with Yankeetown in southwestern Indiana and that both Duffy and Yankeetown may derive from a similar base. However, the decided differences between the two in decorative techniques would preclude suggestions of any very strong relationship between the two. Since Yankeetown sherds occur beneath Mississippian levels at the Equality Springs Site in Gallatin County, Illinois (personal communication from Emily Blasingham), we shall suggest that both Yankeetown and Duffy date somewhere around A.D. 1000.

The Yankeetown Culture
No actual villages, camps, or other evidence of major occupations by groups of the Yankeetown Culture (Curry 1954) has actually been found on the Illinois side of the Wabash during any of the surveys or of excavations in that area. The few sherds which are clearly Yankeetown from sites on the Illinois side might better be considered trade sherds. Summarized, the occurrences of Yankeetown pottery from the Illinois side of the Wabash are as follows (Fig. 15): Gillihan and Beeson (1960) report 10 Yankeetown Plain sherds from the Gamble Site (Lw11), with one in Level 2, seven in Level 3, one from Level 4, and one from a feature; 23 Yankeetown cordmarked sherds, two in Level 3, and 21 in features; and 12 in Level 2. The same report mentions a Yankeetown sherd from Kincaid, citing Cole’s (1951) Plate 18A. Since Plate 18A is an illustration of a burial cist the reference must be to the foreign sherd illustrated as Plate 27A,μ; however, this sherd is identified in the plate caption as a foreign sherd with Fulton Aspect (Arkansas-Red River area) affiliations. Yankeetown sherds are also noted as being in the collections of the Museum of Southern Illinois University from the Duffy Site. A recent examination of the latter material and Illinois State Museum collections by the author would dictate that the majority of the material from Duffy pertains to the Duffy Complex and not to Yankeetown. Both Duffy and Yankeetown do have the same paste and tempering, and a few Yankeetown sherds occur at the site, perhaps accounting for the previous identification.

In addition, there is an incised Yankeetown sherd from the Purgatory Swamp Site (Lw95) in the collection of Denzil Stephens (Fig. 18K).

From the 1962 survey, two sherds from the Peankishaw (sic) Bend Site (W100) in southern Wabash County may be examples of filleted or incised Yankeetown (Fig. 18, L-M).

Lilly (1937) also illustrates a decorated Yankeetown vessel from the Pyramid Mound, which is a mile south of Vincennes, Indiana.

Generally speaking, there is a minor concentration of Yankeetown in the Vincennes-Lawrenceville area of the Wabash Valley. No Yankeetown has been found north of that area and very little south of it. Since the Lawrenceville area seems to have been involved in most cultural developments in the lower and central Wabash, with the exception of the Albee and Duffy complexes, the presence of Yankeetown is not too surprising.
Other Late Woodland Remains

No sites were found which could be classified as Lewis (Cole 1951), Raymond, or Dillinger (Maxwell 1951). A very few collared rims were found during the survey (Fig. 18,1), and Gillihan and Beeson (1960) illustrate collared rims among their 24 Category IV sherds (Fig. 40C). The latter source also illustrates sherds which are compared to Raymond and Lewis (Fig. 40B; p. 64). The authors have wisely refrained from assigning type names, however. While their sherds undoubtedly represent some sort of connection with traditions which include the Dillinger and Lewis cultures, there is no evidence that the sherds have any direct ties with either Lewis or Dillinger, which have quite limited spatial distributions in southern Illinois. Lewis is rarely found outside of Pope or Massac counties, and Dillinger is limited, with few exceptions, to the lower Big Muddy drainage in the southwestern corner of the State (Winters 1962a).

MISSISSIPPIAN MANIFESTATIONS

In the area covered by the 1962 survey of the Illinois side of the Wabash, there are two, and possibly three, distinct Mississippian complexes (Fig. 19). There is undoubtedly a fourth complex at the mouth of the Wabash (Fig. 19) represented by the Murphy Site in Posey County, Indiana (Moorehead 1906; Griffin 1946; Adams 1949), but none of the sites on the Illinois side have produced materials which would suggest any relationship with the Murphy Site. Since the Murphy site has long been an anomaly in the area, with little evidence to link it either with Kincaid or Angel (Griffin 1946), we shall not attempt any interpretation of the materials from the site. Since it to say that at present Murphy largely represents a burial complex typified by disc pipes, ear ornaments of cut conch columna or copper-covered wood, copper spiral ear ornaments, triangular points, tubular copper beads, disc- and barrel-shaped shell beads, a stirrup-necked jar, effigy water bottles, slender necked water bottles, arcade from bowls, noded bowls, handled bowls, effigy owls, and an engraved plate.

Mississippian sites are not plentiful on the Illinois side of the Wabash, but there are three concentrations of sites, one being in the vicinity of Lawrenceville, another east of West Union in Clark County, and a third atop McCleary’s Bluff in Wabash County. There is some dissimilarity between the ceramics from the sites in Clark and Lawrence counties, and we shall accordingly designate the Lawrence County manifestation of Mississippian as the Vincennes Culture and the West Union materials as the Etchison Complex. The difference in classificatory levels between the two is based upon the amount of data available for the two areas. In the Lawrenceville area, sufficient surface materials were available from unmixed sites to permit a rather general description of an entire cultural unit while the Etchison Complex at present represents little more than a ceramic inventory.

The Vincennes Culture

Settlement Pattern. Sites are tightly clustered, with distances of one to five miles between settlements. With the exception of Merom Bluff in Sullivan County, Indiana, all sites are contained within a five-mile radius of Lawrenceville (Fig. 19), close to the junction of the Embarrass and the Wabash. Physiographic positioning is varied, with the main town and two of the hamlets on the T-1, two other hamlets on the T-0, and minor occupations (farmsteads or camps) on the T-1 and the lower outliers of hill masses.

Settlement System. The settlement system is a familiar one for Mississippian. Around a large town with many large platform mounds, there are small hamlets with a single, small platform mound or no mounds. Interspersed among and extending outward from the area of the former sites are numerous small sites which yield little more than a few sherds or triangular projectile points. In addition, one site forty miles to the north (Merom Bluff, Indiana) may be a bluff-top fortress and cemetery linked to the central area. The latter statement represents little more than a hypothesis at present, being based upon a brief description and a few sherds illustrated by Putnam (in Foster 1878) and by Lilly (1937: 48-51, 245). However, the sherds illustrated are typical of those of the Vincennes Culture, and it has been observed during earlier surveys by the author in southern Illinois that Mississippian cemeteries are sometimes as much as forty miles distant from the nearest Mississippian town. Thus we shall tentatively describe the system for the Vincennes Culture as consisting of a central political and religious center with nearby hamlets, dispersed farmsteads and/or hunting and gathering camps, and a possible fortress-cemetery (Fig. 19).

Description of Sites. The central town (Otter Pond Site, Lw125) covers from 60 to 100 acres on the T-1 of the Embarrass and has 12 large platform
mounds arranged in a rectangular pattern around a central plaza. Soils range from a very sandy "loam" to sandy clay, with no particular preference indicated for either type in terms of intensity of occupation. Surface collections today yield little more than pottery, of which there is an abundance, since the site is well known over a wide area and is regularly collected. The bulk of the pottery consists of plain and cordmarked, shell-tempered sherds, with a few fine-paste, and red-filmed, shell-tempered sherds. In addition two effigy heads (Fig. 21, C,F) and an incised sherd were found during the survey. Local collectors report that handles, lugs, effigy heads, or appendages of any sort are extremely rare at the site. The few such adornos that we have seen appear to have paste characteristics differing from the common ceramic material, and it may be that such items were imported from other areas. Certainly, no such material has appeared to date in the collections from the hamlets or other small sites.

Lithic artifacts were very scarce in the surface collections from Otter Pond, and many of them may pertain to an extensive Late Woodland occupation which is present on at least the western portion of the site. Thus, we cannot say whether the lamellar flake blades, flake gravers, flake side and end scrapers, backed blades, choppers, and simple pebble manos pertain to the Mississippian or Late Woodland occupations.

Hamlets include the Gray Estate Site (Lw243), the Doll Site (Lw196), and Zaynor Site (Lw146). Possibly two more sites should be included in this category, Quick (Lw156) and Purgatory Swamp (Lw95), which also have Mississippian components (Denzil Stephens, personal communication). Since we were not able to obtain adequate samples from these sites or good estimates of the area covered by the Mississippian components, their placement within the settlement system and exact affiliations must remain in abeyance.

Both the Zaynor and Gray Estate sites cover about five acres, and the Doll Site probably covers a similar acreage. Estimates of the area of the latter site were somewhat difficult since silting from repeated flooding is heavy. The Zaynor Site is on the T-1 of a small tributary of the Wabash, and the Quick and Purgatory Swamp sites are on the T-1 of an abandoned channel of the Wabash. The latter channel is reported to have been a slough in historic times. Both the Gray Estate and Doll sites are on the T-0 of the Wabash. Either flooding was not an important problem in the Wabash when they were occupied or they were not occupied during the spring and fall of the year. Only detailed geological study and site excavations can provide us with the clues to the latter problem.

The soil of the Gray Estate and Doll sites was a very sandy clay and that of the Zaynor Site, a slightly sandy clay.

The Gray Estate Site gives us the best picture of a hamlet since it is unmixed culturally and has been protected by a levee from flooding. A small central plaza with a low mound at the south end is surrounded by a dark midden area about fifty feet in width. Presumably, there could not have been more than a single or double row of houses around the plaza. The Doll Site also has a single small mound but the occasional exposures of midden did not permit the exact delineation of the hamlet plan. No mound was present at the Zaynor Site, but a village circle around a plaza area was evident. Farmsteads or camps such as the Mefford Site (Lw295) and Weger No. 1 (Lw144) have only few plain and cordmarked sherds and triangular projectile points. Excavation would undoubtedly increase the inventory somewhat, but the indications are that a very limited range of activities was taking place at such loci.

Subsistence Pattern. Naturally, one can say little about subsistence pattern from a surface survey. But heavy concentrations of mussel shell and animal bone at the Gray Estate Site would indicate that mussels and game were an important part of the diet at some period of the year. Perhaps the placement of hamlets on the T-0 of the river may also have significance in terms of subsistence pattern. Such flood plain locations may have been selected for ready access to a stable food source such as mussels and to the rich bottomlands for growing crops.

Trade. It has been indicated previously that few of the sherds at the Otter Pond Site may have been of extraneous origin. The only other item which were of foreign origin in our survey collections were hoe fragments of Mill Creek chert. M Creek, which is a tributary of the Cache River, southwestern Illinois, has numerous exposures of distinctive tabular chert. Many aboriginal quarts and "hoe factories" indicate that the Mill Creek Valley was a major prehistoric center for the manufacture of hoes with the manufactured products distributed over a wide area, including the Cahokia region, the central Illinois River Valley, and the Wabash Valley. One cannot say, as yet, who was doing the manufacturing or how the hoes were
FIGURE 20

VINCENNES CULTURE SHERDS
(approx. three-quarters scale)

Cordmarked, Shell-tempered Sherds
A. Otter Pond Site, Lw125
B. Gray Estate Site, Lw243
E. Gray Estate Site, Lw243

Plain, Shell-tempered Sherd
F. Gray Estate Site, Lw243

Incised, Shell-tempered Sherd
C. Otter Pond Site, Lw125

Fabric Impressed, Shell-tempered Sherd
D. Doll Mound, Lw193

Engraved, Shell-tempered Sherd
G. Gray Estate Site, Lw243
Figure 20
FIGURE 21

VINCENNES CULTURE SHERDS
(approx. three-quarters scale)

Plain, Shell-tempered Sherds
A. Simple bowl. Gray Estate Site, Lw243
B. Plate. Gray Estate Site, Lw243
D. Plate. Gray Estate Site, Lw243
E. Jar. Gray Estate Site, Lw243

Shell-tempered Effigy Lugs
C. Otter Pond Site, Lw125
F. Otter Pond Site, Lw125
Figure 21
VINCENNES CULTURE SHERDS  
(approx. three-quarters scale)

Shredder  
A. Chert. Gray Estate Site, Lw243

Flake Side Scraper  
B. Mill Creek Chert (reworked hoe fragment). Gray Estate Site, Lw243

"Strike-a-lite"  
C. Chert. Gray Estate Site, Lw243

Choppers  
D. Chert. Gray Estate Site, Lw243  
E. Shale. Gray Estate Site, Lw243

Rectanguloid Gorget  
F. Shale. Gray Estate Site, Lw243

Leaf-Shaped Blade  
G. Chert. Gray Estate Site, Lw243

Grooved Abrader  
H. Sandstone. Gray Estate Site, Lw243

Hoe  
I. Shell (Elliptio crassidens). Gray Estate Site, Lw243

Spindle Whorl  
J. Shell-tempered, cordmarked pottery. Zaynor Site, Lw146

Hammerstone  
K. Chert. Gray Estate Site, Lw243

Contracting Stemmed Blade  
L. Shale. Gray Estate Site, Lw243
FIGURE 23

VINCENNES CULTURE ARTIFACTS
(approx. three-quarters scale)

Rectanguloid Celt
   A. Igneous rock. Gray Estate Site, Lw 243

Pebble Mano
   B. Unidentified rock. Gray Estate Site, Lw243

Mano-Metate
   C. Sandstone (One side showing metate usage and the other, mano wear). Gray Estate Site, Lw243
being distributed, and we can only point out that the "hoe factories" have large quantities of finished and unfinished specimens and debitage but little evidence of normal occupational debris. A thorough study of the distribution of Mill Creek hoes might well throw additional light on Mississippian economic patterns.  

**Material Culture.** Table 5 lists those artifacts which can at present be assigned to the Vincennes Culture and is based in large part on surface collections from the Gray Estate Site, an unmixed component of the Vincennes Culture. When data from excavation become available, we can expect some of the functional categories used in this table to be expanded considerably in content, particularly that of fabricating and processing tools which would normally contain many items of bone and antler. A representative selection of artifacts from the Vincennes Culture is shown in Figures 22 and 23.

Most of the stone artifacts are very similar to those of other Mississippian manifestations in the Midwest, and it will require a more refined lithic typology than we have at present to discover significant differentiating criteria, if any, among many of the stone implements of the various regional Mississippian variants in this broad area.

But the ceramic complex is sufficiently distinctive that we feel justified in using an identifying cultural term to separate this regional Mississippian variant from the many others that apparently exist in the Midwest but which are generally identified only under the vague rubrics of Tennessee-Cumberland, Cahokia, or similar terms.

The bulk of the sherds from a Vincennes Culture site consists of a plain ware (jars, plates, and simple bowls) and cordmarked jars. Both are tempered with liberal amounts of coarsely crushed shell. The plain ware (Fig. 20F; 21, A-B, D-E) is similar to plain pottery from Kincaid and Angel, while the cordmarked pottery (Fig. 20, A-B, E) is identical with Cahokia Cordmarked of the Trappist phase in the American Bottoms. The identity of the cordmarked pottery from the two areas is based upon examination of the specimens by Joseph Vogel of the Illinois State Museum, who in 1961 to 1964 analyzed pottery from extensive excavations at Cahokia. Mr. Vogel also commented on the dissimilarity of the plain pottery from the Wabash to plain ceramics in the American Bottoms.

The ratio between the plain and cordmarked sherds varies, but the plain pottery is always preponderant. Thus, at Otter Pond, the central town, the ratio is 7 to 1; at Zaynor, an outlying hamlet.
Culture.

been identified with the Woodland occupations and not easily accessible for surface collecting. The low ratios at both Zaynor and Gray Estate may also reflect a typical grouping of household ceramics, while the Otter Pond material may be more typical of the ceremonial and administrative sectors of the large central town.

Another way to exemplify the distinctiveness of the Vincennes Culture is to contrast it with a site such as Kincaid. Vessels are limited to the few simple shapes noted above, with such Kincaid forms as water bottles, lobed jars, and flaring rim bowls totally missing in a sample of 1,166 Mississippian sherds. Nor have any handles, lugs, or negative painted sherds been recovered from any of the sites. Decorated sherds consist of two effigy heads (Fig. 21, C,F) from the Otter Pond Site, an incised sherd (Fig. 20C) from Otter Pond, an engraved sherd (Fig. 20G) from Gray Estate, and five red-filmed sherds from Otter Pond and the Doll mound. Obviously, what little decorated material has been found on sites of the Vincennes Culture is concentrated at the central town. The simplicity of the Vincennes ceramics stands in marked contrast to the varied and elaborate ceramic expressions of Kincaid.

In addition, cordmarked sherds are present at Kincaid only as trade items, which have been identified as Cahokia Cordmarked (Cole 1951: 151), while they are a dominant type at sites of the Vincennes Culture.

Origins of the Vincennes Culture are obscure at present, but there is a seeming hybridization of ceramic traditions typical of the Cahokia area (Cahokia Cordmarked) and the Kincaid area (Kincaid Plain). But if such a hybridization does exist, a great deal of the content of the original cultures has been lost in the process. At any rate, the Vincennes Culture is probably a very late Mississippian manifestation.

The Etchison Complex

The Etchison Complex (Fig. 19) is known primarily from pottery and has been named after the Etchison Site (CI128), where a heavy concentration of the shell-tempered pottery occurs. The sherds are predominantly plain, but there are a few shell-tempered, cordmarked sherds with a ratio between the two of 15 to 1. Vessel forms include plates, simple bowls, and flaring rim jars. The plain black pottery is notable for its crudeness and indifferent smoothing; and it has decorative features which are normally associated with Woodland ceramics, rather than Mississippian pottery, in the Wabash Valley. These features include broad, shallow notched lips and "pie crust" rims, which were found on about 40 per cent of the rims examined. No other decorative features are known for this pottery, and no appendages or lugs have been reported from the site. Thus, decorative treatment suggests Woodland affiliation, but vessel forms are identical with those found in the Vincennes Culture. Perhaps the Etchison Complex is a special variant of the latter culture with a localized development around the area of the Etchison Site.

Small quantities of plain and cordmarked Mississippian sherds found at the Murphy No. 1 (CI83), Murphy No. 2 (CI229), Mill Creek No. 2 (CI132), North York No. 2 (CI199), and the Chenoweth sites (CI185) would indicate minor occurrences of the Etchison Complex outside of the Etchison Site itself.

Refuse pits excavated by Denzil Stephens at the west edge of the Etchison Site contained, in addition to the diagnostic pottery, Mounds Stemless points of Group I and Group II, a convex based, leaf-shaped blade, a "spokeshave," and a graver. These items should undoubtedly be included within the Etchison Complex.

McCleary’s Bluff Sites

All of the McCleary’s Bluff sites (W69, W96, W97) were in heavy cover, preventing adequate surveying of these well known and heavily collected sites. In spite of the large amount of material removed from these sites through the years, we have been unable to find any large samples in private or institutional collections.

A survey record at the Museum of Southern Illinois University mentions that Dr. Jacob Schneck of Mt. Carmel had removed a large quantity of mate-
rial from the site in the nineteenth century. Among these artifacts were long-necked bottles, effigy pipes of pottery, pottery rattles, and a fluor spar figurine. Such items are unknown in our other sites on the Illinois side of the Wabash, and probably the McCleary's Bluff sites will eventually either be classified as a distinct complex or related to other Mississippian manifestations of the lower Wabash or Ohio River valleys. There is little likelihood that the McCleary's Bluff sites have any direct relationship with the Vincennes Culture since, in the small collections that we were able to obtain, there were no examples of the cordmarked pottery typical of the latter culture.

HISTORIC SITES

No sites were found during the present survey which could be interpreted as historic, although numerous references exist to historic occupations by Miami, Piankeshaw, Kickapoo, Mascouten, Shawnee, and Delaware (Temple 1958). Probably, the occupations by most of these groups date to a period long after they had stopped making pottery and stone implements or after such native industries had become of secondary importance to imported goods available through trading posts. Some of the most important sites were near Terre Haute and Vincennes, Indiana, and these may have been destroyed long ago.

However, there are reports of trade materials in Indian sites in the Wabash Valley. For example, Helmen (1952) reports trade goods from a site on the grounds of the federal penitentiary south of Terre Haute.

A silver medallion, dated 1716, along with unspecified historic objects are reported by Vreeland (University of Illinois Survey, 1930) as having been removed from the Africa Ridge mounds (Cw61, Cw62) east of Palestine, Illinois.

In Wabash County, historic material or associations are reported by James E. Gillihan for two Wabash County sites (Survey files, Museum, Southern Illinois University). One of these, the Hanging Rock Site (ISM W127, SIU 23C2-4), was described by Schneck as having twenty circular house patterns on the flood plain of the Wabash River. The site was associated by him with a Miami occupation. Material reported by Gillihan as coming from the site included triangular projectile points, stemmed projectile points, and shell-tempered pottery.

Another site, the Dunkel mound group (ISM W72-W76, SIU 23C1-2), was also described by Dr. Schneck as having a copper kettle and china beads, along with burials, flint implements, pottery fragments, and bear and wolf canine pendants with two drilled holes. These mounds were visited during the present survey and were found to be riddled with pits. However, it might be possible, by careful excavation, to salvage some information from them.
APPENDIX I

Embarrass Ceramic Series
Edward V. McMichael and Howard D. Winters

THE FOLLOWING TYPE DESCRIPTIONS are based on data from the Beeson Survey of the Embarrass and Wabash drainages (Beeson n.d.: 72-74), a later summary of available data by the senior author (McMichael n.d.), and analyses by the junior author of extensive collections in the Illinois State Museum from the 1962 Wabash Valley survey, collections in the Museum of Southern Illinois University, and the Denzil Stephens survey collections from the central Wabash Valley. Grateful acknowledgement is made to all institutions and individuals who have made data and collections available.

Information on tempering was provided by Mr. James Porter, the Museum, Southern Illinois University, from two thin-sections of each type.

EMBARRASS SIMPLE STAMPED

Paste:
Method of manufacture. Coiling, paddle and anvil.
Temper. Sand and large grit. Varies in proportions from sherd to sherd. Temper is well mixed in some sherds, poorly in others, with inclusions of pebbles sometimes almost as thick as the vessel walls. Sand may in many cases be a constituent of the local clays.
Texture. Varies from well mixed and smooth to very laminar.
Color. Varies from black to gray to tan to tan-orange, with grays and tans predominant.
Core. Dark or light gray, occasionally buff.

Surface Finish:
Exterior is marked with grooved paddle or wrapped paddle. Grooves are wide and shallow and lands are narrow. Grooves run parallel and vary from 3 to 5 mm. apart. Grooves generally run parallel to rim (93%), rarely vertically (5%) or diagonally (2%). Stamped surface has generally been smoothed, making measurement of grooves difficult.

Decoration:
Frequent interior notching of lip (65% of all vessels; 76% for jars; 25% for bowls). About 50 per cent of the notched lips have such deeply impressed and closely spaced notches that the rim has a distinct "piecrust" effect. A single reed-punctated sherd is known from Chenoweth Site (ISM C1185), a cylindrically punctuated sherd with a deep groove from the North York Site (ISM Cw188), and a sherd with two parallel, finely incised lines from the Lowe Site (ISM Cw107). One sherd from the Lowe Site has simple stamping over cordmarking.

Form:
Predominantly elongated jars with semi-conoidal bases (78%), and simple or coconut-shaped bowls (22%).

Lip. Generally flat and squared (92%); occasionally rounded (8%). Frequent interior notching with stick or hollow implement.

Rim. Moderate neck constriction and moderate eversion. Constricted orifices also occur.

Body. Elongated jars (Fig. 13A). Exact shape of bowls not known. Jars occasionally have perforated rim (suspension or lacing holes?).

Base. Semi-conoidal.

Thickness. 3-7 mm., averaging 5 mm.
Geographical Range:
Presently known from the Embarrass and Wabash valleys, with possible extension into White River Valley, Indiana. About 35 sites in Coles, Jasper, Clark, Crawford, Lawrence, and Wabash counties, Illinois, have produced this type (Besson n.d.; Winters 1962). In Indiana, Embarrass Simple Stamped is known from five sites in Vigo County (Helmen 1952, "strip marked pottery"), and three in Sullivan County (Denzil Stephens: personal communication). By far the heaviest concentration is found on the eastern margin of the Springfield Plains of the Interior Lowlands Province (Fig. 11). Examples are known from as far north as the Kankakee and St. Joseph drainages and as far south as the Duffy Site in Gallatin County, Illinois, but Embarrass Simple Stamped is exceedingly rare in these areas.

Chronological Position:
Little is known about chronological placement, but there is reason to believe that simple stamped pottery is later than both the Havana Tradition and the Allison Culture in the Wabash Valley. (A simple stamped vessel came from the Rutherford Mound (Fowler 1957), which has been dated to A.D. 432±200 years, but this vessel differs from the present specimens in having tetrápodal supports and may have been an import from elsewhere.) Nor is there any indication of extensive overlap with Mississippian occupations of the Wabash Valley. We shall, accordingly, make an estimate that Embarrass Simple Stamped persisted from A.D. 400 to 1000.

Cultural Affiliation:
A diagnostic type of the La Motte Culture in the Wabash-Embarrass drainage (Winters 1962B). Always quantitatively dominant over companion types (Embarrass Check Stamped and Embarrass Cordmarked).

Probable Relationships:
Simple stamped pottery such as Madisonville Grooved Paddle (Griffin 1943) or Danner Grooved Paddle (Brown 1961) is historic or protohistoric in the Midwest. Possibly Embarrass Simple Stamped might be a source for the derivation of these later types. In the case of the latter type, however, about the only similarity to Embarrass Simple Stamped is the use of a grooved paddle in stamping the surface (Cf. Brown 1961: Fig. 13A). Embarrass Simple Stamped seems to have its strongest ties with simple and check stamped pottery in the South and Southeast and is probably derived from some source in that area.

EMBARRASS CHECK STAMPED

Essentially the same as Embarrass Simple Stamped except for surface treatment. The check stamped surface is the result of the application of a cross-grooved paddle. Individual checks are 5-7 mm. across and usually show smoothing of the surface while the clay was still wet, making identification sometimes difficult. Checks tend to be bold, but shallow, with narrow lands. Both square and rectangular checks are known.

Consistently associated with Embarrass Simple Stamped, but quantitatively very minor in La Motte Culture sites, with ratios ranging from 25:1 to 50:1.

Very little is known about either form or decoration, since both rim sherds and large body sherds are scarce. Two rim sherds are from jars with slight neck constriction and slightly everted rims. One of the rims is plain and square, the other is squared with exterior notching of the lip. It should be noted that the latter rim is the only example with exterior notching in the Embarrass Series.

Embarrass Check Stamped is known from eleven sites in Jasper, Clark, Crawford, Lawrence, and Wabash counties, Illinois. Check stamped pottery from the Hubele Site (ISM Wh30) and the Pepper Site (ISM Wh93) in White County, Illinois, from the Hastings Site in Greene County, Indiana (Black 1933), and the Mann Site in Posey County, Indiana (Adams 1949), may be Embarrass Check Stamped or related types or varieties. However, the Mann Site sherds are grog-tempered and have a paste quite unlike that of Embarrass Check Stamped. Other simple or check stamped sherds from Mann perhaps represent imported vessels from the South or resident manufacture by southern technicians.
A still poorly defined type which is consistently associated with Embarras Simple and Check Stamped in considerable quantity. Embarrass Simple Stamped sherds outnumber the cordmarked sherds in ratios ranging from 1.5:1 to 4:1. Paste characteristics are identical for the stamped and cordmarked types.

Unlike Embarrass Simple Stamped, Embarrass Cordmarked is predominantly vertically paddled from the rim (80% vertical, 12% diagonal, 8% horizontal). Frequency of interior notching of the lip is much lower for Embarrass Cordmarked (32% interior notched, 12% vertically notched), and only 25 per cent of the sherds have a "piecrust" rim. Bowls rarely have notched rims (17%), while jars are more frequently notched on the rim (46%). Vessel shapes are apparently the same as those of Embarrass Simple Stamped although there is probably greater variability in details of the cordmarked vessels, with perhaps a greater emphasis on bowls rather than elongated jar forms (67% jars, 33% bowls).

Cordmarking is quite variable, ranging from fine, tightly twisted, closely spaced cord impressions to coarse, loosely twisted, widely spaced impressions. Embarrass Cordmarked is sometimes found without stamped pottery or with only a few sherds of the latter. Such a distribution pattern and typological similarities to Stoner Cordmarked suggest that the Embarrass Ceramic Series may represent a hybridization of a southern stamped tradition with an indigenous cordmarked tradition. Thus one might suggest that the La Motte Culture itself represents a culture derived from the Allison Culture and a dominant, intrusive southern complex.
APPENDIX II

Albee Cordmarked Pottery

THE FOLLOWING TYPE DESCRIPTION is based on sherds from sites Murphy No. 1, No. 2, No. 3 (CI83, CI229, and CI230) and the Chenoweth Site in the Illinois State Museum collections. A large collection of sherds from refuse pits at the Catlin Site in Vermillion County, Indiana, was also used through the courtesy of Mr. Thomas Razmus of Georgetown, Illinois. Mr. John Henry of the Council for Illinois Archaeology arranged for the loan of the latter sherds. Published data on the Albee Mound (MacLean 1931) and the Shaffer Cemetery (Black 1933) were also useful in defining the new type.

ALBEE CORDMARKED

Paste:
Method of manufacture. Paddle and anvil (?). Temper. Finely crushed rock and sand. Texture. Varies from well mixed to coarse. Color. Surfaces gray to black, rarely buff; cores buff to gray.

Surface Finish:
Exterior is marked with a cordwrapped paddle. Cordmarking is applied vertically from the rim and covers the entire exterior surface of the vessel. Cord impressions are closely spaced.

Decoration:
Decoration is rare and is limited to short, vertical or diagonal impressions of a plain or cordwrapped stick on the interior of the lip. A few examples are known of cylindrical punctations or vertical incisions on the exterior of the vessel.

Form:
Slightly elongated or globular jars with rounded bottoms.

Lip. Flat, rounded, and very narrow. Lip often shows cordmarking.

Rim. Folded, wedge-shaped or cambered rim. Moderate neck constriction and moderate eversion. Occasionally there is a narrow channel around the interior rim. Rims can be easily distinguished from those of other Late Woodland cultures and complexes in the Wabash Valley.

Body. Elongated or globular jars.

Base. Rounded.

Geographical Range:
Known only from Vermillion, Sullivan, and Greene counties in Indiana, and from Clark County in Illinois. So far, Albee Cordmarked has not been found outside the upper portion of the central Wabash Valley.

Chronological Position:
The association of Ramey Incised and Powell Plain with Albee Cordmarked in refuse pits suggests a dating centering on A.D. 1000.

Cultural Affiliation:
A diagnostic ceramic type of the Albee Complex, which is known from village refuse and cemeteries. Published data on the Albee Complex includes the MacLean (1931) report on the Albee Mound and the Black (1933) report on the Shaffer Cemetery.

Probable Relationships:
Albee Cordmarked shares its distinctive wedge-shaped or cambered rims with pottery from the Illinois River Valley and other areas of northern Illinois and Indiana, and southern Wisconsin. Dr. Robert Hall of the Illinois State Museum has pointed out that Albee Cordmarked is very similar to some pottery from the Starved Rock area in the Illinois River Valley (personal communication 1962). However, the latter pottery differs from Albee Cordmarked in that the Starved Rock specimens always have inner lip notching, Albee rarely; Starved Rock sherds never have exterior punctates, Albee occasionally; the Starved Rock sherds are tempered with black angular grit; Albee Cordmarked with sand and mixed grit of variable size.

A vessel very similar to Albee Cordmarked is illustrated by Griffin (1941: Pl. 53, Fig. 1) and Henriksen (1957: Pl. 35B) in their reports on the Utica mounds in the Illinois River Valley. Perhaps Albee Cordmarked is intrusive into the Wabash Valley from the Illinois area, via the Vermilion of the Illinois and the Vermillion of the Wabash.
APPENDIX III

Duffy Ceramic Series

THE FOLLOWING TYPE DESCRIPTIONS are based on an analysis of sherds from the Little Chain Site (Wh90) and the Duffy Site (G28) in the Illinois State Museum survey collections of 1950. In addition, sherds from the Duffy Site and the Pepper Site (Wh93) in the collections of the Museum of Southern Illinois University were analyzed through the courtesy of Dr. Melvin L. Fowler, Curator of North American Archaeology. Mr. James Porter of the same institution provided data on tempering from a thin-section of Duffy Decorated.

DUFFY DECORATED
(Fig. 18, A-C, E, H)

Paste:
Method of manufacture. Coiling (?), paddle and anvil.
Temper. Grog.
Texture. Generally well mixed and smooth.
Color. Predominantly buff but also many examples of light gray, dark gray, and orange-buff.
Core. Buff or gray.

Surface Finish:
Well smoothed over entire surface of vessel. A companion cordmarked type is known, but it is quantitatively small in proportion to the plain pottery. Definition must await a larger sample.

Decoration:
Limited to horizontal, widely spaced, single or double rows of vertically incised or stamped lines which are either straight or slightly curved. On one jar sherd in the Southern Illinois University collections, the bands of lines are separated by reed punctates. Decoration is limited to the exterior of jars with the rows of incised or stamped lines beginning on the neck or shoulder. Jar lips are sometimes notched on the exterior. Decoration is always on the interior of simple bowls with the bands of lines placed on the rim or below the rim.

Form:
Jar of unknown shape and simple bowls.
Lip. Rounded or flattened. Sometimes notched on the exterior.
Rim. Moderate neck constriction and moderate eversion.
Bases. Unknown.
Thickness. Jars range from 5 to 10 mm. in thickness, simple bowls from 8 to 11 mm.

Geographical Range:
Known only from the lower fifteen miles of the Wabash Valley. Probably a very localized type.

Chronological Position:
Grog tempering combined with predominance of plain surfaces suggest that Duffy should be contemporaneous with the nearby Yankeetown Culture. The Duffy Series probably would date, then, sometime before and after A.D. 1000.

Probable Relationships:
Derivation of the Duffy Series is unknown. Perhaps Duffy and Yankeetown derive from a common source. No comparable pottery is known from elsewhere in the Midwest.

DUFFY PLAIN

Duffy Plain has characteristics identical with those of Duffy Decorated, lacking only decorated areas. Undoubtedly many of the sherds classified as Duffy Plain are simply sherds from portions of jars below the neck or shoulder of decorated vessels.
APPENDIX IV

Lowe Flared Base Projectile Points of the Tamms Type Cluster

LOWE FLARED BASE is one of four established types and three provisional types which have been included in the Tamms Cluster (Winters, unpublished research). All of these expanding stem points share the majority of their attributes but differ from one another in technique of preparation of the expanding stem, linearity or convexity of the base itself, length to width proportions, and in other attributes. Ultimately the guide to establishment of the type has depended upon consistent association with defined cultural manifestations in the Midwest and its absence or rare association with other cultural units in the same area. Table 7 summarizes some of the data on geographical distribution, temporal range, and cultural affiliation of the established types.

By far the heaviest concentration of the points of this cluster are in southern Illinois in the Cache and Big Muddy drainages. In this area points identical with the Motley points (Fig. 5A) of the lower Mississippi Valley (Bell 1958: 62-3; Ford, Phillips and Haag 1955: 129-30; Ford and Webb 1956: 56) are the dominant type in sites of the Early Woodland Sugar Hill Culture. Motley points are rare elsewhere in the State, although a few are known from the Wabash Valley. Another type, Crater Flared Base, is commonly found in sites of the Crab Orchard Tradition. The latter type has a straight-sided stem, a convex base and a clearly defined demarcation between stem and shoulder. While the data cannot at present be conclusive, there are indications that Crater Flared Base may have displaced Motley points rather abruptly during the period of fusion between the indigenous Sugar Hill Culture and an intrusive culture of the Middle Eastern Tradition, a hybridization which produced the Crab Orchard Tradition. Crater points are also the dominant points in sites of the Kampsville type in the lower Illinois River Valley (Stuart Struever, personal communication) where they are associated with Pike Ware. Interestingly enough, Crater points have not as yet been found in pure middens of the Havana Tradition in the Illinois, Kaskaskia, and Wabash River valleys, thus indicating that these points may be an important cultural diagnostic for the Illinois area.

In the Wabash Valley, points designated Merom Expanding Stem (Fig. 4, I-M) are commonly associated with sites of the Late Archaic Riverton Culture (Winters and Stephens, n.d.), which dates between 1500 and 1000 B.C. These miniature versions of the larger points generally typifying the cluster are a diagnostic of the Riverton Culture and are limited elsewhere in the State to a few examples from the Cache River Valley.

Lowe Flared Base points, some of the attributes for which are summarized in Table 6, are characterized by a distinctive combination of attributes: markedly flaring, straight-sided stem; beveling of all edges of the stem and, frequently, the blade; grinding of the sides of the stem; and high incidence of hexagonal cross sections of both stem and blade. Consistent association of these features is not found on other types within the cluster. Lowe points are the dominant type on sites of the Allison Culture and its partial derivative, the La Motte Culture.

In general, the earliest types of the Tamms Cluster seem to have appeared in southern Illinois sometime prior to 1500 B.C. Eventually the early Motley points were displaced by Crater points, with distribution excluders of these points appearing in the lower Illinois River Valley around 50 B.C. and probably considerably later in the lower Missouri Valley. Two separate intrusions of points of the Tamms Cluster are postulated for the Wabash Valley, one between 1500 to 1000 B.C. and another after A.D. 1. The cluster has types with marked resemblances to types defined for the Tennessee and Mississippi valleys, and ultimately the latter areas will have to be considered for any definitive formulation of the Tamms Type Cluster.
# TABLE 6

**TAMMS TYPE CLUSTER—TYPE: LOWE FLARED BASE**

<table>
<thead>
<tr>
<th>ATTRIBUTES I</th>
<th>NO. MEASURED</th>
<th>RANGE</th>
<th>AVERAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length</td>
<td>9</td>
<td>3.0-7.7 cm.</td>
<td>4.2 cm.</td>
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<tr>
<td>Maximum Width</td>
<td>21</td>
<td>1.6-2.8 cm.</td>
<td>2.3 cm.</td>
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<tr>
<td>Maximum Thickness</td>
<td>10</td>
<td>0.5-0.8 cm.</td>
<td>0.7 cm.</td>
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<tr>
<td>Blade Length</td>
<td>9</td>
<td>1.7-6.3 cm.</td>
<td>2.9 cm.</td>
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<tr>
<td>Stem Length</td>
<td>30</td>
<td>1.1-1.8 cm.</td>
<td>1.4 cm.</td>
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<td>Stem Width, Top</td>
<td>32</td>
<td>1.3-2.0 cm.</td>
<td>1.6 cm.</td>
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<tr>
<td>Stem Width, Base</td>
<td>24</td>
<td>1.8-2.6 cm.</td>
<td>2.1 cm.</td>
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<tr>
<th>ATTRIBUTES II</th>
<th>PERCENTAGE HAVING ATTRIBUTES</th>
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<tbody>
<tr>
<td>Basal Grinding</td>
<td>31%</td>
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<tr>
<td>Side Grinding of Stem</td>
<td>67%</td>
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<td>Blade Beveling</td>
<td>68%</td>
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<tr>
<td>Basal Beveling</td>
<td>92%</td>
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<td>Side Beveling of Stem</td>
<td>100%</td>
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<tr>
<td>Serration</td>
<td>13%</td>
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<td>Basal Thinning</td>
<td>97%</td>
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<th>ATTRIBUTES III</th>
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<tbody>
<tr>
<td>Cross-section</td>
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<tr>
<td>Convex-triangular</td>
<td>35%</td>
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<tr>
<td>Plano-triangular</td>
<td>50%</td>
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<tr>
<td>Lozenges</td>
<td>6%</td>
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<tr>
<td>Hexagonal</td>
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<tr>
<td>Lenticular</td>
<td>6%</td>
</tr>
<tr>
<td>Trapezoidal</td>
<td>6%</td>
</tr>
<tr>
<td>Plano-Convex</td>
<td>6%</td>
</tr>
<tr>
<td>Rhomboidal</td>
<td>6%</td>
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<thead>
<tr>
<th>Blade Shape</th>
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<tbody>
<tr>
<td>Triangular</td>
<td>72%</td>
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<td>Lanceolate</td>
<td>28%</td>
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<th>ATTRIBUTES IV</th>
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<tr>
<td>Chert Source or Other Raw Material</td>
<td></td>
</tr>
<tr>
<td>Dongola</td>
<td>85%</td>
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<tr>
<td>Grand Chain</td>
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<td>Kaolin</td>
<td>11%</td>
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<th>SECTION D</th>
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### TABLE 7

**THE TAMMS TYPE CLUSTER IN ILLINOIS.**

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<thead>
<tr>
<th>Cultural Period</th>
<th>Cultural Association</th>
<th>Type</th>
<th>Temporal Range</th>
<th>River Valley Distribution</th>
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<tbody>
<tr>
<td></td>
<td>La Motte Culture</td>
<td>Lowe Flared Base</td>
<td>A.D. 400-900*</td>
<td>Central Wabash</td>
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<tr>
<td></td>
<td>Allison Culture</td>
<td>Lowe Flared Base</td>
<td>A.D. 1-400*</td>
<td>Central Wabash</td>
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<tr>
<td>Middle Woodland</td>
<td>Kampsville Complex</td>
<td>Crater Flared Base</td>
<td>50 B.C.—A.D. 250</td>
<td>Lower Illinois</td>
</tr>
<tr>
<td></td>
<td>Crab Orchard Tradition</td>
<td>Crater Flared Base</td>
<td>500 B.C.—A.D. 400*</td>
<td>Big Muddy, Cache, and Lower Wabash</td>
</tr>
<tr>
<td>Early Woodland</td>
<td>Sugar Hill Culture</td>
<td>Motley</td>
<td>1500-500 B.C.*</td>
<td>Big Muddy and Cache</td>
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<tr>
<td>Late Archaic</td>
<td>Riverton Culture</td>
<td>Merom Expanding Stemmed</td>
<td>1500-1000 B.C.</td>
<td>Central Wabash</td>
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*The dates given are provisional.*
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