ARCHAIC MANIFESTATIONS IN OHIO AND THE
OHIO VALLEY

A Thesis

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for the Degree Master of Arts

by

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Approved by

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INTRODUCTION

It is the intent of this thesis to attempt a preliminary correlation of the poorly known Archaic cultures of Ohio with defined and dated phases from surrounding regions. The greatest difficulty encountered is the lack of excavated sites in the state. Many Archaic sites have been tested, but contained no excavatable midden deposits. If any deeply stratified sites exist in Ohio, they are buried under the accumulated silt of the rivers along which they existed. The abundance of rich Woodland sites in Ohio has also tended to distract investigators from the more mundane Archaic sites.

Excluding the very late Glacial Kame burial complex, only two adequately defined Archaic Complexes exist in Ohio (Prufer and Baby 1963:4). These are the Panhandle Complex, defined by William Kizer-Oakes on the basis of his work in the Panhandle of West Virginia (1955) and the Raisch-Smith focus or phase of Preble County, based on excavations and surface collections from the site of the same name (Moffett, 1949; Long 1962; Kolezar 1969). Another excavated site, the Davis Mound (Baby 1959 – Field Notes) has been very little publicized. It seems most closely related to Archaic sites in Kentucky and Tennessee. The Mixter site in Erie County, Ohio has been amply described by Shane (1967). It was a multicomponent
Archaic site having affiliations at various times with West Virginia, Pennsylvania and New York. Beyond the above sites, most data were obtained from surveys, surface collections and local collectors.

Direct contact and/or trade with Michigan, New York, Pennsylvania, West Virginia, Kentucky and Tennessee at different times during the Archaic is indicated by the presence in Ohio of characteristic artifact types, especially projectile point forms, and raw materials (native copper, Onondaga chert, Kansawa flint etc.) from these areas. The assumption is implicit that the projectile point and tool types discussed here are approximately contemporary with those from dated sites elsewhere. I am well aware that such assumptions are dangerous and every effort will be made to avoid the pitfalls of this approach. Whole tool complexes will be used for comparison wherever possible. Projectile points of dubious derivation or that belong to types that persisted for long periods of time will not be considered when attempting to evaluate a site. It is also understood that the presence of a particular projectile point type in Ohio does not imply the presence of the entire cultural assemblage of which this part is a type in other areas.

The lack of excavated habitation sites has made reconstruction of the lifeways of Archaic peoples in Ohio (ie, the new archaeology) nearly impossible. Good assemblages of stone tools are not present, much less the detailed data needed for in depth reconstruction. As a result, this thesis is organized largely around the old method of cross-correlating
projectile point types. It is hoped that this will at least aid in the definition of local phases of the Archaic and establish some framework within which more detailed information may be placed when it is available.

PROBLEMS

Many authorities believe that the earliest Archaic manifestation in the Ohio Valley was of Laurentian or Pre-Laurentian type (Dragoo 1958:210; Prufer and Sofsky 1965:38) and probably did not date between 3000 B.C. Earlier point types, primarily Kirk, were encountered, but largely ignored because of the excessive distances between Ohio and the Carolina Piedmont, where they were originally defined (Coe 1964: 70). My research has indicated, and this thesis will attempt to prove, that there was a widespread early Archaic occupation of Ohio during the time period 7000-5000 B.C.

The recent excavations of Bettye Broyles at the St. Albans site in Kanawha County, West Virginia, are essential to the understanding and definition of this early Archaic in Ohio (Broyles 1966: 3-43). The St. Albans site (46Ka27—all site designations are in the Smithsonian Triennial System) is located along the Kanawha River fifteen miles west of Charleston, West Virginia and about fifty miles from the Ohio border. Samples taken with a core drilling rig revealed deeply stratified deposits containing charcoal and burned earth to a depth of at least 36.5 feet. Present excavations have been carried down to eighteen feet (twenty-four feet in one small area) below the present surface. An excellent
and consistent series of radiocarbon dates has been obtained, the earliest being 7900 B.C. ± 500 years at a depth of seventeen feet. From the lower strata of the site, dated between 6000 and 8000 B.C., have come projectile points of the Kirk series, as well as LeCroy, St. Albans, Kanawha and MacCorkle types (Detailed descriptions of most projectile point types mentioned in the text can be found in the projectile point typology, Part III. They are arranged in alphabetical order.). Kirk points are the oldest yet encountered, occurring in zones 16, 18, and 20. Above them, in zone 14 are MacCorkle points. These appear to be transitional between the Kirk points and the St. Albans Side Notched points that occur in zones 11 and 12 (carbon 14 dates of 6870 B.C. ± 500 years and 6880 B.C. ± 700 years — no sample # available). LeCroy points occur in zones 6 and 8, which have been radiocarbon dated at 6300 B.C. ± 100 years (no sample number available). In zones 2 and 4, dated at 6210 B.C. ± 100 years are Kanawha points. Each of the above occupation zones contains only one type of point and is separated from the other zones by sterile layers of sand and silt.

All of the above point types occur frequently in Ohio. Out of a collection of 954 identifiable Archaic points studied by the author (Table 3), 723 were types similar to those from St. Albans. Trufer and Sofsky (1965:312) have attempted to place LeCroy and St. Albans type points in the Laurentian tradition because they frequently occur in collections from sites having a large Laurentian component. I believe them to be part of a series of early Archaic occupations
that have, up to this point, gone unrecognized.

Information concerning the period from 5000 to 3000 B.C., when the first ground stone tools were probably introduced into the state, is almost totally lacking. No sites definitely assignable to this period have been encountered. By comparison, there is a wealth of material from the late Archaic (3000-1000 B.C.). Artifacts similar to those from the Laurentian tradition of New York State occur in northern and eastern Ohio, where three local phases of this tradition have already been defined. In the southern and southeastern parts of the state are sites that may form an as yet undefined phase of the Midcontinent or Eastern tradition. Panhandle Archaic sites are found along the Beaver River drainage in east-central Ohio. Points of the Ashtabula (Susquehanna Broad) type are widespread in the eastern parts of the state and indicate some connection with the very late Archaic Transitional Period of Pennsylvania. There is no evidence, however, of any other types of Transitional artifacts in Ohio. Sites in northwestern Ohio have yielded surface collections of artifacts that are directly comparable with assemblages from sites in Michigan. Despite the high probability of culture contact and the exchange of ideas during the late Archaic, no examples of such were noted. This may be due to a lack of excavated and stratified sites.

SCOPE

Before beginning a discussion of the Archaic, it should
be noted that the transitional "cultures" known as Plano and Glacial Kame will not be considered in this thesis.

The Plano "complexes", characterized by non-fluted lanceolate points and such related forms as Suwanee, Quad, Dalton, etc., have been variously characterized as Paleo-Indian, Archaic or something transitional between the two. Willey and Phillips (1958:113), after noting the mixed "Lithic" (Paleo-Indian) - Archaic nature of their artifact assemblages, decided to classify them all as Archaic until more data was available. Willey later included the Plano cultures in his Big Game Hunting tradition along with the fluted point material (1966:44-50). Mason (1962) placed the Plano cultures in the Paleo-Indian tradition because there was "artifact material and evidence of a subsistence base and settlement pattern much more similar to that of Folsom and Clovis than that of the eastern Archaic manifestations .

Pruefer and Baby (1963) follow Mason's lead and discuss Plano materials along with fluted point materials.

Krieger (1962) objected to Mason's placement of the Plano cultures within the Paleo-Indian tradition, noting that Plano was "definitely a step toward the Archaic" and that Plano points are frequently found in association with stemmed and notched projectile points, chipped bifacial knives, axes, drills, grinding implements and artifacts of bone and shell indicative of a generalized hunting and gathering economy. He feels that the Plano should be given the status of a separate stage, the Proto-Archaic" to distinguish it from the full blown Archaic as discussed here. Cleland (1966)
on the other hand, has placed the Plano cultures within the Archaic stage, basing his decision on the scanty ecological evidence indicating an adaptation to a woodland environment and a diffuse economy (as against adaptation to a Plains environment and a focal economy for the Paleo-Indians).

The decision to exclude the Plano cultures from consideration in this thesis was made for the following reasons: (1) The transitional nature of these cultures in the eastern United States is recognized — they are neither fully Paleo-Indian nor fully Archaic. Frueber and Baby (1963;4) state that they can find "no link" between the Paleo-Indian (including Plano) and Archaic stages in Ohio. (3) The limited scope of this paper does not allow for its inclusion.

The Glacial Kame "culture", while not so fully described or discussed as the Plano, has been summarized by Cunningham (1948), Morgan (1952) and Potter (1968). Like the Plano "cultures", it may be termed transitional because it embodies traits of both the Archaic and the later Woodland burial mound groups. Also like the Plano, its consideration falls outside the scope of this paper.
PART I. THEORY
CHAPTER I. WHAT WAS THE ARCHAIC?

The term "Archaic" was first used in reference to North America by William Ritchie in 1932. He saw the Archaic as an adaptation to a forest environment, but lacking such later Woodland traits as pottery, agriculture and the smoking pipe, despite initial objections to the term (Griffin 1946; Sears 1948), its usage is presently accepted by archaeologists throughout the eastern United States.

Because it begins and ends at different times in different areas of the eastern United States and has an extensive spatial and temporal span, the Archaic has often been called a stage (Krieger 1964; Byers 1959:232; Willey and Phillips 1958:104-11). Stages, however become unwieldy theoretical structures when a detailed regional analysis is desired. Dragoo solved this problem by declaring "the Archaic is not a "tradition", but a stage in which a number of "traditions" may be recognized (1958:146)". Dragoo's concept of tradition was modelled on that of Willey (1953:374), who said "a tradition implies deep-set and channeled activity or patterned ways in which the vitality of a culture expresses itself in strong preference to other possible ways". In 1958, Willey and Phillips defined "tradition" thus: "an archaeological tradition is a (primarily) temporal continuity represented
by persistent configurations in single technologies or other systems of related forms" (1958:37). Traditions, in turn, are composed of smaller units called phases. A phase is "an archaeological unit possessinging traits sufficiently characteristic to distinguish it from all other units similarly conceived, whether of the same or similar cultures or civilizations, spatially limited to the order of magnitude of a locality or region and chronologically limited to a relatively brief interval of time" (Ibid. :22). At least two or three sites having similar components are needed to define a phase.

Several major Archaic cultures in the eastern United States have been defined and described in terms of traditions and phases and this is the system that will be adhered to in this paper. In instances where defined Archaic cultures are not referred to as traditions or phases (i.e. the Transitional Period, the Panhandle Complex etc.), the original designations have been maintained.

In its fully developed form in the eastern United States, the Archaic is characterized by: (1) the use of numerous forms of stemmed and notched projectile points, nearly all of which have a wide distribution in the eastern United States; (2) the use of intentionally shaped and ground stone tools, especially woodworking tools such as the grooved axe, adze and gouge, and tools such as the pestle, used in the preparation of wild plant foods; (3) the absence of horticulture and pottery; (4) a diffuse economy (Cleland 1966) of hunting, fishing, gathering, and, in some cases, shellfish collecting,
adapted to a woodland or deciduous forest environment; (5) residence patterns of the Restricted Wandering and Central Based Wandering types. These types of residence patterns are based on the Beardsley classification of cultures (Beardsley et al 1956). Use of the Beardsley classification allows for the formulation of hypotheses concerning community characteristics, economy and social organization from archaeological data.

The basis of the Beardsley classification is community mobility, but community mobility is dependent in turn upon the efficiency of environmental exploitation. Caldwell (1958:6) has characterized the Archaic as an interaction sphere marked by increasingly efficient exploitation of the environment that culminated in a "Primary Forest Efficiency". He points out that early Archaic sites in the Southeast show no evidence of dependence upon acorns and shellfish, staple foods of the late Archaic. Known early sites are also small and lack heavy, shaped tools and polished stone tools which are found in abundance on later sites. In other words, here is some evidence for a possible transition from Restricted Wandering to Central Based Wandering (Beardsley et al 1956). Caldwell does not believe, however, that the addition of acorns and shellfish to the diet was sufficient to bring about this change. Instead, he postulates a greater overall hunting efficiency, possibly linked to the switch from the long, lanceolate thrusting spears of the Paleo-Indians, which are better suited to prairie or savannah surround
hunting, to the barbed and stemmed points and atlatls of the Archaic, which are better suited to ambush type hunting in the developing postglacial forests of the Northeast.

Winters (1969: 2-5) further documents this change throughout eastern North America and concludes that it is "the result of both man's increasingly effective utilization of his environment and the appearance of an increasingly bountiful supply of such basic resources as acorns, nuts and shellfish". He believes this increase in natural resources to be the result of the establishment of essentially modern environments and sea levels. The developing deciduous forest environment was not necessarily more productive in terms of the amount of food available than the preceding coniferous or boreal forest, but it provided more species of plants and animals for exploitation (Cleland 1966:51-3) and thus permitted the development of the generalized economy that characterized the fully developed Archaic. In addition, the rise in sea level and the cessation of isostatic rebound following deglaciation resulted in shallower, slower flowing streams and a better habitat for shellfish (Winters 1969:2-5).

The concept of primary forest efficiency has been disputed by Cleland (1966). He points out that the environment in which the primary forest efficiency was supposedly reached was a climax forest of the Carolinian biotic province and that such forests are "notoriously poor in the major food items upon which the Archaic peoples seem to have depended, i.e., deer, elk, waterfowl, mollusks and plant seeds. This fact as well
as Caldwell's empirical evidence for his argument of the importance of forest foods such as nuts and acorns casts doubt upon the whole concept of primary forest efficiency" (Ibid.: 56-7). Cleland, however, has failed to prove, at least to my satisfaction that a climax forest was indeed present in this area at this time. There is a distinct possibility that the Archaic peoples in the area prevented the development of a "climax" forest through burning and other subsistence activities (Yarnell 1964: Heizer 1955), even though climatic conditions were right for its development.

Cleland (1966:42-5) makes an important distinction between what he calls diffuse and focal economies. A focal economy derives nearly all of its food from one or two closely related plants and/or animals. Hunting and gathering peoples with focal economies are usually found in environments such as the plains or boreal forest that provide only one or a few major species of game or plants. A diffuse economy, based on a through exploitation and knowledge of a large number of food sources can only develop in a suitably rich and varied environment. Caldwell (1958) , according to Cleland, has misunderstood the diffuse nature of the late Archaic economic adaptations. The Archaic peoples of this time "did not become more specialized but less specialized, not better adapted, but more adaptable — they did become more efficient, but only at exploiting more kinds of resources rather than developing more efficient methods to exploit a few food sources" (Cleland 1966:57).
A final key concept in understanding the economy of the Archaic is that of the "Archaic Interaction Sphere" (Caldwell 1958). The maintenance of an interaction sphere would necessitate fairly constant and prolonged contact between widely scattered groups. Such contacts would have been facilitated by the nomadic way of life led by the small hunting bands of the early Archaic. With improved food-getting technology and more extensive knowledge of and reliance upon varied local resources in the late Archaic, people apparently became more sedentary and the population may have increased. Widespread trade networks developed at this time and continued into the Woodland period. Winters (1968), in his study of "value systems" and "trade cycles" among the late Archaic shellmound peoples of Kentucky, traced the numerous species of marine shells found in grave association back to their probable areas of origin in the Florida and Gulf Coast area (assuming, of course, that they are still found today in approximately the same areas as in Archaic times.). He concluded that "none of the species could have come from localities closer than 600 miles by the most direct route and some would have had to have been derived from as far away as 750 miles" (Ibid: 216). Copper, presumably from the Great Lakes area, was also traded into Kentucky, although in smaller quantities than shell. Stewart and Dragoo (1954) have also noted the widespread trade relationships evident at the Gay Shriver site in Greene County, Pa. Materials recovered from this site included Flint Ridge flint, Onondaga
chert, Kanawha River black flint, a purple flint from the Monongahela River drainage and Laurentian slate. As Winters (1968:219) concluded, "there is good evidence that the vast trade network that links the various regional traditions of the Hopewellian Interaction Sphere has its roots in the simpler exchange systems of the late Archaic cultures".
CHAPTER II.

ARCHAIC TRADITIONS IN THE EASTERN UNITED STATES

To understand the Archaic of Ohio, it is necessary to briefly review certain Archaic sites and traditions found elsewhere in the eastern United States. The very important St. Albans site in West Virginia has already been discussed. Three other southeastern sites having early Archaic components are the Doerschuk, Hardaway and Gaston sites in North Carolina. These were first described by Coe (1964) in his Formative Cultures of the Carolina Piedmont. All three were stratified and the components, which ranged from late Paleo-Indian to early Woodland, were separated by sterile layers of earth. Using the information gained from the excavation of these 3 sites, Coe constructed a sequence of seven Archaic "complexes". These succeeded each other in the Carolina Piedmont region as follows:

<table>
<thead>
<tr>
<th>COMPLEX</th>
<th>DATE</th>
<th>ARTIFACT TYPES</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) Palmer</td>
<td>7000 B.C.</td>
<td>Palmer Corner Notched points</td>
</tr>
<tr>
<td>(2) Kirk</td>
<td>6000-7000 B.C.</td>
<td>Kirk points</td>
</tr>
<tr>
<td>(3) Stanley</td>
<td>5000-6000 B.C.</td>
<td>Stanley Stemmed points</td>
</tr>
<tr>
<td>(4) Morrow Mountain</td>
<td>4500 B.C.</td>
<td>Morrow Mountain points</td>
</tr>
<tr>
<td>(5) Guilford</td>
<td>4000 B.C.</td>
<td>Guilford points, chipped and notched stone axes</td>
</tr>
<tr>
<td>COMPLEX</td>
<td>DATE</td>
<td>ARTIFACT TYPES</td>
</tr>
<tr>
<td>--------------</td>
<td>--------------</td>
<td>-----------------------------------------------------</td>
</tr>
<tr>
<td>(6) Halifax</td>
<td>3500 B.C.</td>
<td>Halifax Side Notched points</td>
</tr>
<tr>
<td>(7) Savannah River</td>
<td>3000-1000 B.C.</td>
<td>Savannah River Stemmed (Benton or Kays) points, polished stone atlatl weights, grooved axes, stone vessels</td>
</tr>
</tbody>
</table>

Of the above projectile point types, only Kirk are found in any quantity in Ohio. Type definitions for the others can be found in Coe (1964).

In the middle and late Archaic there were apparently two traditions in the Southeast, The Midcontinent tradition and the Eastern tradition. They were established in 1959 by Lewis and Kneberg based on statistical z coefficient analysis of data from 22 sites in Kentucky, Tennessee, Alabama and Georgia. In Tennessee, the Midcontinent tradition consists of three phases, Eva (5200-3500 B.C.), Three Mile (3500-1200 B.C.) and Big Sandy (1200 B.C. - 1.D. 1). In Kentucky, two phases are reportedly present, Indian Knoll (4000-2000 B.C.), represented by the sites of Indian Knoll, Head, Annis and Chiggerville 1, and an unnamed phase represented by the Parrish, 'ward and Chiggerville 2 sites (post 2000 B.C.). All of these sites were investigated between 1930 and 1950 by Webb. Lewis and Kneberg believe the Indian Knoll phase to be contemporary with the Eva and Three Mile phases of Kentucky, the Chiggerville site to be coeval with the Keys phase of the Eastern tradition and Ward and Parrish sites to be contemporary with the Big Sandy phase. Winters (1969:134-5), has disagreed with Lewis and Knebergs formulation. He feels that the Indian Knoll and unnamed phases represent, not two different phases,
but seasonal activity variants at different sites of the same phase. Indian Knoll, Barrett, Kirkland and Annis have been designated base camps, Chiggerville and Ward settlements, Butterfield a hunting camp and Read a transient camp. Because of this disagreement, these sites will be referred to in this thesis simply as the Green River Archaic or the Indian Knoll culture.

Carbon 14 dates exist for the Indian Knoll and Carlson Annis shellmounds, but they were made on poor material (shell and antler) by the old solid carbon method (Winters 1969: 17506); as a result, they are highly unreliable. Winters (Ibid.) has set a date for the Indian Knoll culture of 2500-2000 B.C., based on the above dates and estimates of the rate of shell accumulation. This conflicts with the earlier dates (and longer time span) for Indian Knoll set by Lewis and Kneberg (above). In addition to his study of the Green River Archaic, Winters has defined a new phase of the Midcontinent tradition, the Riverton phase of Illinois (1969). It is estimated that this phase began about 2000 B.C. and lasted until after 1000 B.C. It was, therefore, coeval with the Big Sandy phase of Tennessee (Ibid:107).

Diagnostic traits of the Green River Archaic, as determined by Webb (1946:236-48) include large shell middens used as habitation sites, clay living floors with burial areas, caches of utility artifacts, tightly flexed human and dog inhumations in circular pits, the use of red ochre in graves and the absence of pottery and the ground stone celt.
Projectile points were of the straight stemmed, corner notched, side notched and expanding stem varieties. There were prismatic and subrectangular bar atlatl weights, full grooved axes, mauls, conical, bell-shaped and cylindrical pestles, ornaments of copper and ground stone, fish hooks, hairpins and projectile points of bone, "crochet hook" atlatl hooks of antler, antler atlatl handles and ornaments and containers of shell.

The Eva, Three Mile and Big Sandy phases of Tennessee share many of the same traits. Inhumations in all three phases were flexed in circular pits, although extended inhumations begin to appear in the Big Sandy phase. Projectile points of the Eva phase were of the Eva Basal Notched and straight stemmed forms. The straight stemmed forms continued into the Three Mile phase while the Eva points were replaced by the Big Sandy type. Atlatl weights of the Three Mile phase were of the winged, prismatic and cylindrical types. Also present were atlatl hooks made from the proximal end of an antler, turtle shell rattles, copper beads, bell-shaped, conical and cylindrical pestles and a chipped stone adze. The adze continued into the Big Sandy phase, with the addition of the grooved axe and chipped stone celts. Projectile points were of the stemmed, straight stemmed, Ledbetter, Adena and Frazer Thinned Base types. In addition, there were tubular stone pipes, oblong and expanded center gorgets of stone, bone whistles, awls and other objects of copper, cut animal jaws and pendants and beads, gorgets and vessels of marine shell (Lewis and Lewis 1961).
The Riverton phase (Winters 1969) includes a micror- tool industry in chert (a function of the small size of local chert pebbles). Projectile points average 2.6 to 2.7 cm in length (Merona Expanding Stem and Trinkle Side Notched). According to Winters, "The strongest similarities of these small points from the sites of the Riverton culture are to Ritchie's Laoka points, Binford's Dustin points, Fagan's 'small stemmed and notched points from the Dixon and Rohr shelters and to small unpublished points from Indian Knoll" (Ibid 1969:37). Other traits of the Riverton phase include subspherical to rectangular fully grooved netsinkers of sandstone, bone shuttles for weaving, the Robeson gouge (an antler flensing tool), axes of chipped limonite with polished grooves or notches, cloudblower pipes, bone flutes, Indian Knoll type turtle shell rattles, clay house floors and extended, flexed and cremated burials in pits. The complex does not seem to have included atlatl weights.

The Archaic in the Northeast

The Laurentian tradition is, in Ritchie's words, "an extensive Archaic continuum, widely spread throughout northeastern North America, with its major area of development and diffusion within southeastern Ontario, southern Quebec, northern New England and northern New York. Its most diagnostic traits, occurring in considerable morphological variety, comprise the gouge; adze; plummet; ground slate points and knives, including the semi-lunar form or ulu, which occurs also in chipped

and side notched form"
stone; simple forms of the bannerstone; a variety of chipped stone projectile points, mainly broad bladed and side notched forms and the barbed bone point" (Ritchie 1940: 96).

The Laurentian is also an elaborating tradition, for elements were progressively added to a simple base culture. This simple base culture is believed to have been widespread at an early time level (Ritchie 1969:79). Ritchie believes it to have been a Boreal Forest culture which was introduced into New York from the North or North-West, around the Great Lakes area and stemmed ultimately from Eskimo sources (Ibid:80). Having spread throughout the Northeast, this early Laurentian underwent a period of regional specialization an differentiation resulting in a number of phases.

Dragoo has maintained that the "oldest and most widespread Archaic culture in the Ohio Valley proper was the Laurentian" (1958:210). Prufer and Soskyl (1965:38) are in agreement with this view. It is my contention that there was an earlier, southern derived Archaic occupation in the area. It is almost totally unrepresented in stratified sites, but consists of scattered finds of Kirk and various bifurcate based point types similar to those from the St. Albans site.

The Old Copper "Culture" and the Boreal Archaic of the upper Great Lakes area are considered along with the Laurentian because these cultures formed a continuum. The Laurentian groups of New York maintained a brisk trade with the Old Copper culture and identical artifact forms may be found in both
groups.

"Native copper counterparts exist for such diagnostic Laurentian stone traits as the gouge, adze, ground slate spear points and double edged points or knives and... even for the bannerstone, plummet and barbed bone point. A near parallel for the ulu or semi-lunar knife of chipped or ground stone is also found in the crescentic copper knife or chopping tool" (Ritchie 1969:82).

The Old Copper culture was at first thought to be somewhat earlier than the Laurentian of New York, but both groups are now believed to have reached their apogee about 2000 B.C. (Ibid.). As objects of copper were traded from Lake Superior to New York, there was a corresponding "backwash" of ground slate and flint objects from New York into the upper Great lakes area. Arthur G. Smith reported finding Archaic artifacts of Onondaga chert as far west as LaCarne, Ohio, fifteen miles west of Sandusky Bay (Smith 1967); Objects of the Boreal Archaic (Byers 1959) are very similar to the Laurentian and Ritchie has called them "approximate cultural equivalents" (Ritchie 1969:82). They may represent specialized regional developments from the same base culture.

In the "panhandle" of West Virginia exist a number of late Archaic sites belonging to what Mayer-Oakes has called the Panhandle Archaic (1955). Typical artifacts of the Panhandle Archaic (Ibid.:134-5) include Steubenville Stemmed and Steubenville Lanceolate points, triangular, narrow stemmed, side and corner notched points, choppers, 3/4 grooved axes,
full grooved axes, notched axes, 3/4 grooved adzes with
round or pointed polls, plain adzes, full grooved celts,
crescent bannerstones, perforated or grooved pebble bannerstones,
bar atlatl weights, hematite plummets, notched pebble netsinkers
and bipitted stones. Most of the above items are also found
in the Laurentian, and the Panhandle Archaic is believed to
be a blend of an earlier Laurentian culture with other elements
from the Northeast (Dragoo 1958: 206). Dragoo has said "The
grooved adze and associated stemmed points represent a new
cultural thrust into the Upper Ohio Valley from probably the
Northeast in late Archaic times. This new culture blended
with the resident Laurentian to form the Panhandle Archaic
which became the base upon which the early Woodland cultures
developed" (Ibid. 211).
PART II.

THE ARCHAIC IN OHIO
FIGURE 1
Archaic Sites in Ohio
<table>
<thead>
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<tr>
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<td>2</td>
<td>Caldwell's Slope and Caldwell's Bluff</td>
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<td>3</td>
<td>Davis Mound</td>
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<td>4</td>
<td>Goldcamp</td>
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CHAPTER III,
THE EARLY ARCHAIC IN OHIO

The earliest Archaic inhabitants of Ohio appear to have been bands of Restricted Wanderers, still largely dependent upon hunting for their livelihood (Cleland 1966:58). They used projectile points of the Kirk series, as well as LeCroy, Kanawha, MacCorkle, St. Albans, Palmer Corner Notched and St. Clair Stemmed. All of these types have been dated between 7000 and 5000 B.C. by Coe (1964) and Broyles (1966, n.d.a). These points (especially the first three types) are scattered widely over the state, but most are surface finds, without context. The Quick Farm site, Hayport site, Mixter site (not evaluated in this chapter) and numerous small sites in the Hocking and Scioto River valleys have shown evidence of early Archaic occupations.

The John Quick site is located in Vinton County, Ohio, one mile west of Albany, Ohio, and 1/2 mile from the Vinton/Athens County line. The site was surface collected in the 1930's by Dr. Warren V. Sprague of Chauncey, Ohio. In 1934, he presented to the Ohio Historical Society a group of 83 projectile points from this site, together with lithic samples from nearby quarries and artifacts from other sites (Ohio State Museum County Files). No mention is made of any
ground stone material having been recovered from the site. This fact, plus the site's remoteness from any major waterway lends support to the hypothesis that the site was a transitory hunting camp. Two small streams called Flint Run and Brush Creek run near the site. These empty into Raccoon Creek which, in turn, joins the Ohio River in Clay Township, Gallia County, Ohio.

Of the 83 projectile points listed for the site, 54 were available for study, the rest being lost or scattered in the collections. The bulk of the group was of Archaic tradition and included 3 Kirk serrated, 1 Kirk Corner Notched, 1 Sykes, 2 Cypress Creek I, 9 Archaic Straight Stemmed, 9 Kirk Stemmed Stemmed points, 2 Sykes and 1 Ledbetter. The remainder consisted of small, crudely made side and corner notched types of uncertain age and affiliation, plus a few possible Woodland types. Of the 29 recognizably Archaic points, 12 or 41% are types which have been defined for the southeastern United States and seem to have their major occurrence in Southeastern complexes. As a group, they span the entire time range of the Archaic. Kirk points were guess-dated by Coe (1964: 70) at between 5000 and 6000 B.C. At the St Albans site in West Virginia, Kirk points were recovered from a layer 3" above a stratum carbon 14 dated at 6980 B.C. ± 160 years (Sample # y1538) (Broyles n.d.a).

Lewis and Lewis (1961:46) have found Cypress Creek points to be characteristic of the Middle Archaic Ewa phase (5200 B.C.) and Big Sandy points to be characteristic of the
late Archaic Three Mile phase of the Midcontinent tradition (3500 B.C.) (Lewis and Kneberg 1959:169). Sykes and Ledbetter points are associated with the very late Archaic Big Sandy phase of the Midcontinent tradition (Ibid.:46). This phase is believed to have occupied the time period from the beginning of the Medithermal (1250 B.C.) to the beginning of the Woodland period.

A second site with early Archaic connections is the Hayport site in Scioto County, Ohio (Fig. 1). This site is located on an alluvial first terrace 1/2 mile from the Ohio River and three miles west of Wheelersburg in Green Township. Harper (1968) reports that points ranging from Paleo-Indian to Fort Ancient have been recovered from the site, but the most frequent are LeCroy points (no absolute frequency given). These points have been dated at 6300 B.C. ± 100 years (no sample number available) at the St. Albans site in West Virginia (Broyles n.d.). "Shoulder fracturing" (i.e., lateral-medial burin facets forming the shoulders of the point) and a small amount of grinding on both stem and base are reportedly present. These are not reported characteristics of LeCroy points. Judging from his drawings, some of the points which Harper recovered are not LeCroy, but St. Albans points. These do exhibit basal grinding. Burin facets occur on the stems and shoulders of what Prufer has called Lake Erie Bifurcate Base points. It is possible that these may be a northern variant of LeCroy, but Prufer has placed them in the Laurentian tradition, three to four thousand years later than the West
Virginia dates (see typology). It seems highly unlikely that a single point type could have persisted, virtually without change, for this length of time. Their relationship can only be speculated upon until secure radiocarbon dates are obtained for Lake Erie Bifurcate Base.

The Mixter site is a multicomponent site in Erie County, Ohio (Shane 1967). Its major Archaic occupations have been correlated with the Late Archaic Laurentian and Transitional phases of the Northeast and it will be discussed later in this context. A small group of projectile points from this site has, however, been assigned to a "Pre-Laurentian Archaic Manifestation" possibly dated from 5000-4000 B.C. and "related to Archaic developments immediately south of Ohio" (Ibid.:131). These points include 5 deeply corner notched specimens similar to the Cypress Creek points of the Eva phase of the Midcontinent tradition (Lewis and Kneberg 1959: 163-4). This phase has been dated at 5200 B.C. ± 500 years (sample # M - 357) at the Eva site in Tennessee (Lewis and Lewis 1961:13). It occurs, not only in Ohio, but at the Melti and Holcombe sites in Michigan (Shane 1967:133).

Also included were two bifurcate base points said to be similar to LeCroy points. They are indeed similar to some LeCroy points as the type was originally defined, but using the redefined West Virginia types of Broyles (n.d.a), they appear to be a St.Albans type. This type has been carbon 14 dated at 6880 B.C. ± 700 years and 6870 B.C. ± 500 years (no sample numbers available) at the St.Albans site.
Four projectile points similar to the Kirk Serrated or Kirk Stepped types have also been assigned to the Pre-Laurentian Archaic at this site. This form was believed by Coe (1964:70) to be slightly later in time than the Kirk Corner Notched type, dated at approximately 6900 B.C. at the St. Albans site (Broyles n.d.a). Assuming that the Kirk and LeCroy points of Ohio were broadly contemporaneous with their counterparts in the Southeast, the dating of Shane's "Pre-Laurentian Archaic" may be somewhat earlier than he supposed.

A small, unnamed site in southern Columbiana County (no exact location given), surface hunted by Charles Henderson of Alliance, Ohio in 1968 yielded 13 scrapers, 3 hafted scrapers, 3 drills, 3 flint knives, 13 side notched points, 3 corner notched points, 1 Kirk serrated point, 4 bifurcate point and 1 stemmed point. All of these artifacts were made of local flints from Flint Ridge, Coshocton and Plum Run except for two scrapers of a "high grade glossy black flint" (Henderson 1969:62). An examination of the photographs indicates that all of the artifacts recovered from the site are types common to the Eva site in Tennessee (Lewis and Lewis 1961) and other sites of the Midcontinent Tradition (Lewis and Kneberg 1959). Types tentatively identified include Kirk Serrated, Eva II, Sykes, Cypress Creek, LeCroy, Kirk Corner Notch and Undifferentiated Side Notched. The ovoid and hafted scrapers present are also similar to Eva types. Occupation here apparently covered the entire Archaic period.
There was no indication of any later Woodland occupation.

Surveys of the Scioto River valley in Ross and Pike Counties by Prufer (1967) and McKenzie (1968) revealed only traces of Archaic occupation in the main valley (4 Kirk Serrated, 1 Drake Indented Base—see MacCorkle—and 2 LeCroy plus late Archaic Laurentian types). There existed, however, extensive Archaic campsites along the Salt and Paint Creeks, tributaries of the Scioto. The bulk of the occupation (at least 40% of the points recovered) appears to have been of a generalized Laurentian type and has been designated by McKenzie (Ibid.) as the Dunlap phase of the Laurentian tradition. This phase will be discussed along with the late Archaic material.

Three Kirk Corner Notched points were recovered from three different sites, but were implicitly dismissed from consideration in relation to the early Archaic occupation of the region. "It is, of course, a possibility that they represent some tenuous southeastern influence, but it seems to be asking too much to derive them from the Carolina Piedmont. Perhaps we should look to Indian Knoll, where similar types apparently occur with moderate frequency" (Ibid:48). It is unnecessary to search as far afield as the Carolina Piedmont for the derivation of these Kirk points. Over 200 Kirk Corner Notched points, of both large and small varieties, have been excavated from the St. Albans site and a few nearby sites in West Virginia about fifty miles from the Ohio border (Broyles n.d.a). As stated previously, charcoal from a layer 3" below that containing these points has been carbon 14 dated at 6980 B.C. ± 160 years (sample # Y1538). This is much too early
a date for the late Archaic Indian Knoll site. Assuming that the date is correct (there are numerous dates from this site and they form a consistent series) and that these Archaic points represent an early horizon, they could not be closely related to Indian knoll.

In addition to the Kirk points, two whole and two fragmentary specimens of Lake Erie Bifurcate Base points were encountered in the survey. Prufer and Sofsky (1965: 31-2) have placed these points in the Laurentian tradition, but, as pointed out earlier, their resemblance to early Archaic LeCroy points is great and they may, in fact, form one population. Finally, McKenzie has tentatively defined a new point type, Drake Indented Base, from a sample of six points recovered during the Scioto Valley survey and four points from Cuyahoga County. As to their cultural affinities, he states that their position is unclear but that they are "not typically Laurentian". From his published descriptions and drawings it appears that these points are virtually identical (although perhaps a bit thinner) to a tentative type defined by Broyles (1966, n.d.a) for the St.Albans site and known as MacCorkle Stemmmed. They have been classified as such in this report. Based on data from the St.Albans site, MacCorkle points are temporally and technologically transitional between the earlier Kirk point and the later St.Albans type. Broyles has given them an early Archaic date of 6800-6900B.C. In sum, it appears that some of the point types ascribed by Prufer and McKenzie to the Late Archaic Laurentian tradition may in fact be
early Archaic.

A survey of the Hocking Valley from Lancaster to Hockingport, Ohio by Shane and Murphy (1967) also revealed evidence of an early Archaic occupation "closely related to Coe's Formative Cultures of the Carolina Piedmont" as well as a late Archaic Laurentian occupation. Early Archaic point types included 3 MacCorkles (or Drake Indented Base), 2 Kirk Serrated, 6 Kirk Corner Notched, 9 LeCroy (St. Albans), 2 Palmer and 2 Stanley Stemmed. All except MacCorkle and LeCroy occur in the Carolina Piedmont area (Coe 1964) and have been dated there at between 7000 and 5000 B.C. The only middle Archaic types present were one Cypress Creek point and sixteen Newton Falls points (Big Sandy). Both types are associated with the Midcontinent tradition (Lewis and Kneberg 1959).
CHAPTER IV.
THE MIDDLE ARCHAIC IN OHIO.

Changes in technology and environment mark the beginnings of the middle Archaic. Tools of ground stone first appear in Graham cave (Crane 1956:667) and Modoc rock shelter (Fowler 1959:262) in levels dated at 5000 B.C. or slightly earlier. The technique or traits may have been introduced into Ohio at this time. The postglacial change from coniferous to deciduous forest seems to have been well advanced in the Great Lakes area by 5000 B.C. (Cleland 1966). This environmental modification, in turn, allowed the economy of the area to change from the earlier focal pattern, based largely upon hunting, to the diffuse economy characteristic of the fully developed Archaic (Cleland 1966:20-2).

Few artifact types can be definitely associated with this period between 3000 and 5000 B.C. The Ewa and Cypress Creek I point types of the Midcontinent tradition are dated to this interval, but they are rare in Ohio. A few examples have been noted in the typological collections of the Ohio State Historical Society. Two Cypress Creek points were noted from the John Quick farm in Vinton County, five from the Mixter site in Erie County and two from the small site in Columbiana County reported by Henderson (1969). It is possible
that some early types, particularly those with bifurcated bases, persisted longer in Ohio than in West Virginia and the Southeast, or that they are later in Ohio. Early Archaic bifurcate base types have been found in association with Eva points and late Archaic Laurentian type assemblages in surface collections from sites such as Solether (Kinn 1967), McKibben (Prufer and Sofsky 1965) and Mixter (Shane 1967).
FIGURE 3 -- THE MIDDLE ARCHAIC
CHAPTER V.
THE LATE ARCHAIC IN OHIO

The heaviest and most conspicuous Archaic occupation of Ohio seems to have taken place between 3000 and 1000 B.C. The date of 3000 B.C. has been postulated by Winters (1969:2-3) for the final cessation of postglacial changes and the establishment of modern land and sea levels. Rivers and streams assumed their present base levels and associated features. The rate of flow slowed and freshwater mussels proliferated in the shallow riffles. This stable and abundant food resource constituted an economic base for the late Archaic shellmound cultures of Kentucky and Tennessee (Indian Knoll, Unnamed, Eva, Three Mile, Big Sandy and Riverton phases of the Midecontinent tradition. Their influence penetrated southern and southwestern Ohio at least as far north as Auglaize County (Britt 1969). Other late Archaic traditions represented in Ohio include the Lanoka and Laurentian traditions of New York and the related Boreal Archaic and Old Copper "cultures" of the Upper Great Lakes area, the Panhandle "complex" of West Virginia, the very late Transitional "Period" of Pennsylvania and the Eastport "complex" of Michigan. These will be discussed in turn.
The Midcontinent Tradition

Ohio sites having affinities for the Midcontinent tradition seem to have been closer to Indian Knoll and the Green River Archaic than to the Riverton phase. Finds of cloudblower pipes with Glacial Kane burials in Allen County, Ohio and Randolph County, Indiana may indicate that the Riverton phase was approximately contemporary with Glacial Kane (Winters 1969:69). A stone pipe was also recovered from an Archaic burial pit beneath the Davis mound in Franklin County, Ohio (Baby—Davis Mound Field Notes), but it was of a different type (Plate 14A). Other pipes similar to the cloudblower type have been recovered from late pre-pottery and early pottery levels of Archaic shellmounds in Alabama (Webb and DeJarnette 1948: 35-6). Wherever they appear in Archaic contexts, they are very late.

Britt (1969), in his study of the Archaic of west-central Ohio, concluded that the bulk of the occupations were referable to the Green River Archaic via a site known as Raisch-Smith. No mention was made of any resemblances to the Illinois Archaic. Britt specifically assigns seven small sites from Auglaize, Shelby and Miami Counties to the Green River Archaic (The Hartman, Fritz, Abbot, Beaver Pond and Hopkins sites # one, two and three) (Britt 1967 a, b; 1968 a, b, c). Side notched, corner notched and stemmed points were the most numerous, comprising respectively 57.5, 75.1, 78.5, 89.3, 36.3, 33.4 and 20.5 % of the total assemblages. A type having high frequency at the Hopkins
sites was a conical based corner notched type (20-2.5 ).

Other types reported from the area include fractured base points, corner notched serrated points, Archaic bevels, Archaic basal notched, expanding stem, heavy duty, bifurcate base, pentagonal, transitional and Ashtabula points. These point types are based on Converse (1963) and, for the most part, are not as strictly defined as those used here. Because no illustrations were included by Britt in the summary of his thesis and only a few of the points recovered were illustrated in his original field reports, it was not possible to attempt conversion of his types to the types used in this thesis. In the category of ground stone artifacts, only subrectangular bars, bell pestles, grooved axes and winged bannerstones are listed for west-central Ohio (Britt 1969).

A link between the Archaic cultures of west-central Ohio and the Green River Archaic of Kentucky is provided by the Raisch-Smith site in Preble County, Ohio. The site was surface collected by Ross Moffett between 1933 and 1949. In the summer of 1950 a salvage excavation was conducted by Dr. Raymond Baby of the Ohio Historical Society (Moffett 1949; Long 1962). The field notes from that excavation are presently in the files of the Ohio Historical Society Museum in Columbus, Ohio. They have been recently been reviewed by Kolezar (1969). Material from the site has, unfortunately been scattered and only a small reference collection was available for study.
The Raisch lithic site was situated on a 20' high gravel terrace on the south side of the junction of Fournile and Little Fournile Creeks, three miles east of the Indiana-Ohio State border in Preble County, Ohio. Most artifacts were recovered from the surface of the plow zone. Trenching during the excavations revealed a chert quarry pit, a dog burial and a series of six postholes thought to have been part of a windscreen or baffle (Kolezar 1969:2). All artifacts were manufactured of the local, extremely poor quality chert. This poor material, combined with an apparent lack of flint knapping skill or training resulted in characteristically thick, crude appearing tools. Nearly all of the chert was quarried from the gravels of the terrace upon which the site was located. The only foreign material consisted of a few pieces of Kentucky Elkhorn chert.

Through a visual inspection of photographs, Kolezar (ibid.) has broken the artifacts from the site down into the following categories:

**Stemmed Projectile Points**

I-A. The most common type at the site, these stemmed points are thick, crude and percussion chipped. Stems may be contracting, straight or expanding. The points are long and narrow, length/width ratio being 2/1 to 3/1. Lengths most commonly fall between 5.0 to 6.5 cm. They are always thick, averaging 1.1 cm in thickness. Moffett (1949) reports 296 of these points from surface collections. The 1950 excavations yielded 163 (Long 1962:61).
A few of these points are of the type that James Neill (1956) has called McWhinney Heavy Stemmed, but the points from the Raisch-Smith site are generally somewhat thinner, have a better defined shoulder and usually lack the convexo-triangular transverse section that characterizes the McWhinney Heavy Stemmed type (Plate 7b).

I-B This is a well made straight stemmed point with a long wide blade and barbed shoulders. The base intersects the longitudinal axis of the point at an oblique angle. One subtype of this point has assymetric shoulders (See Davis Mound discussion below). These points occurred in quantity in zone C of the Flint River site and nearby sites in Alabama (Webb and DeJarnette 1948: 35-6, 45, 69, 70). Here they were associated with flexed burials, sandstone and steatite bowls, limestone hoes and axes and conical sandstone pipes. These points also occur at the Chiggerville site in Kentucky (Webb and Hang 1939:21 Fig.12) and at the Robeson Hills site of the Riverton phase in Illinois (Winters 1969: Plate 15). Winters (Ibid.) calls them Marcos points after Bell (1958). The lopsided appearance of the base is the result of fracturing which occurs in a good percentage of the specimens. Bases and sides of the base may also be lightly ground. These points would seem to be indicative of a very late Archaic occupation (after 2000 B.C. (Plate 13).
This is a short, broad point with square shoulders and a straight stem. The base is rounded. This is the point type called, in this thesis, Archaic Square Stemmed. Thirty-Five were recovered from the McKibben site in Trumbull County, Ohio (Pruter and Sofsky 1965:27), twenty-five from the Mixter site in Erie County (Shane 1967:140), nineteen from the Rohr Rock Shelter in West Virginia (Dragoo 1958:180), Fifty-one from the McCain site in Indiana (Ibid:227) and a number from the Faulkner site in Illinois (Ibid:232). These points resemble types from Indian Knoll and are also similar to the Genessee point of New York. They have an extremely wide distribution in both space and time, being found from New York to Indiana and at sites ranging from Archaic to late Woodland in date (Shane 1967:140). (Plate 4a).

Corner and Side Notched Projectile Points

IIA These points are similar in appearance and manufacture to IA except that they have definite side or corner notches rather than a stem. Kolezar considers them to be a variant of IA.

IIB This is a "shorter, thinner version of IIA" but more poorly chipped. These points appear similar, although cruder, to Webb's corner and side-notched types from Indian Knoll (Webb 1946:253). A similar type was also
recovered from the Chiggerville site in Kentucky (Webb and Haag 1939:21). Some of the corner notched examples may be Cypress Creek points (Plate 7a).

IIC This is reportedly a small group of side and corner notched points having lightly ground bases. Only three points from this group have been illustrated (Moffett 1949: Fig. 2, No. 18, 19, 20), but they appear to this author to represent more than one type. This cannot be verified without examination of the original specimens.

IID This is a group of well made side notched points having a ground base with square shoulders. They can be assigned to the category Big Sandy Side Notched. Big Sandy points are characteristic of the Three Mile phase of the Midcontinent tradition (Lewis and Kneberg 1959). They are also known from such Green River sites as Ward (Webb and Haag 1940:95). (Plate 5a).

IIE Five triangular side notched points having the widest part of the point at the base have been reported from the site by Long (1962: 61-2 No. 11). One with a thinned base and fine serrations is illustrated. It appears to be a small variety of Kirk Corner Notched (Plate 3a).

IIF Long (1962:63) reports eight thick, heavy, corner notched
points from the site. These points have no formal base, but are frequent on Archaic sites in Ohio.

IIIG The final category is composed of basal notched and bifurcated base points. At least one of these is a LeCroy point.

In addition to the above types outlined by Kolezar, Long (1962:61) lists three small points "with slightly indented bases that are definitely pentagonal". Moffett also illustrates two type II Archaic Bevels, but does not comment on them (1949: Fig. 1, 2).

Other chipped flint artifacts from the Raisch-Smith site include approximately 150 stemmed scrapers and a few notched scrapers, 44 rough flake scrapers and 5 thumbnail scrapers. There were seven types of knives, including a large number of flake knives, six triangular blade knives with a straight or slightly convex base, one large oval knife, ten small, crude "oval based knives" and twelve fragments and one complete specimen of a large, heavy, leaf shaped knife with a square to oval base (Kolezar 1969). Forty-three whole drills were recovered, including straight, bulbous and expanding stem types. Also found were seven, worn, hatchet-like objects of chipped slate which Kolezar has classified as choppers and one chipped siltstone disc. Ground stone objects include forty-seven subrectangular bars of local slate, varying in quality of workmanship and amount of polish. They range in length from 9.0 to 12.5 cm,
in width from 4.0 to 6.5 cm and in thickness from 0.8 to 1.8 cm. The ends of some are battered and the surfaces covered with fine longitudinal scratches.

Moffett reports two bannerstones from the site. One was a broken winged type of polished slate. The second was a reworked notched butterfly type also of polished slate (Moffett 1949:431). Two more were found in the 1950 excavations (Long 1962: 63). One was classified as a "single face bottle group, blending form class B" (after Knoblock 1939:284) of red sedimentary stone and the other as "a blending form of rectangular barreled" made from banded slate. In addition, a double notched winged bannerstone was picked up on the surface of the site (Long 1962: 63).

At least thirty 3/4 grooved axes with flat to convex polls have been taken from the site. They are made of slate and stones from the glacial drift. Some are entirely polished and others are polished only at the bit. Eighteen bell-shaped pestles were found. They have pointed or flattened tops and long axes that are oblique to the plane of the base. Also found were hammerstones, one grooved maul, one biscuit shaped stone and one muller. Later occupations at the site are represented by two celts, one Adena potsherd and a few triangular projectile points of Mississippian type.

Although some early projectile point types are present at the Raisch-Smith site (Kirk and LeCroy), its closest ties appear to be with the Green River Archaic of Kentucky. Moffett (1949) compared trait lists for the site with those
from three non-shellmound Green River sites — Ward, Kirkland and Chiggerville (Webb and Haag 1939, 1940). Ward and Chiggerville are believed to be winter occupied settlements and Kirkland to be a hunting camp (Winters 1968:176). Subsistence pursuits and general way of life at these small sites may have been more similar to Raisch-Smith than at such large, (presumably) summer occupied sites as Indian Knoll, where subsistence was heavily based on shellfish. No hidden or shell deposits are recorded for Raisch-Smith. In addition, comparison with Indian Knoll was avoided because of great differences in the quality of workmanship in flint tools and in the total number of tools available for comparison between the two sites. Moffet’s comparison of 27 major material traits from the Green River sites with Raisch-Smith yielded an 87% correlation. That is, 87% of the 27 traits found at Raisch-Smith occur at all three of the Green River sites compared. Conversely, 70 traits in all were listed by Webb and Haag (1939:60-1) for the Chiggerville site and 74 for Ward and Kirkland (1940: 103-5). The bulk of these, however, were burial traits, caches of various objects and artifacts of bone and shell that would not be expected to occur at a small, temporary hunting camp. In addition, these sites were extensively excavated, Raisch-Smith was not. No human burials and only one dog burial was recovered from Raisch-Smith. The preservation of bone was good, but there were very few bone artifacts. There was no shell. At the time of the comparison, the only major Green River stone artifacts
missing from Raisch-Smith are the gonoidal pestles and the prism type bannerstone. A specimen of the latter has since been found there (Kolezar 1969).

Animal remains from the site include the Virginia deer, box turtle, grey squirrel, woodchuck, raccoon, dog (burial), wild turkey and beaver. The analysis of the bone remains from the site gives little information that is of use in establishing the time of year that the site was occupied. The dog burial was that of a puppy, but dogs can be born at any season. The toe bone of a fawn is mentioned in the analysis (Baby- Raisch-Smith Field Notes). The box turtle Terrapene carolina carolina, is most easily captured in the summer, when large numbers of individuals gather in mud puddles and aestivate. Between October and April, they hibernate in burrows in the frozen ground, making them difficult to capture (Winters 1969:115). In addition, Winters (Ibid. 114) found the wild turkey to be the only species of bird having economic importance at the summer occupied Riverton site (93% of all birds represented). At the other two sites of the Riverton phase, Swan Island (spring and/or fall occupation) and Robeson Hills (winter occupation), turkey accounted for only 35% and 56% of the birds represented. The rest of the bones belonged to ducks, geese and other migratory species. Raisch-Smith yielded no migratory birds. Given the above information, it is very possible that the Raisch-Smith site was occupied during the summer and perhaps the spring. A winter occupation is not, however, ruled out.
The data are not sufficient to make any type of definitive statement.

The McWhinney site (33Pr9) is a multicomponent surface site surveyed by James Heilman III of the Dayton Museum of Natural History as part of his survey of Wayne County, Indiana (Heilman 1970). It is located two miles east of Richmond, Indiana and 1 mile from the Wayne County, Indiana/Preble County, Ohio border in Preble County. The Archaic occupations at the site appear to be (or to have been) stratified, because a change in the depth of plowing from 6" to 8" during the course of the survey resulted in a change in the percentage distribution of the various projectile point types found on the surface. Collections made on the surface of the site when it was being plowed to a depth of 6" yielded the group of artifacts in Table 1. The next year, the plow depth was lowered to 8" and the surface collection shown in Table 2 was made.

The larger percentage of McWhinney Heavy Stemmed points in the second collection may indicate that it was an earlier form at the site. The distribution of this point type in Ohio is not known. It has only recently been defined and, in the past, points of this type were probably lumped with thinner stemmed points in an Archaic Stemmed or Archaic Crude Stemmed category. It is also difficult or impossible to identify from photographs. Its major characteristics are the exceedingly thick biconvex or convexo-triangular cross-section and the frequent retention of the cortex of the
<table>
<thead>
<tr>
<th>Number</th>
<th>Artifacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>59</td>
<td>side notched points (Big Sandy type)</td>
</tr>
<tr>
<td>78</td>
<td>corner notched points (Cypress Creek and others)</td>
</tr>
<tr>
<td>8</td>
<td>bifurcated points (none observed)</td>
</tr>
<tr>
<td>34</td>
<td>McWhinney Heavy Stemmed points</td>
</tr>
<tr>
<td>15</td>
<td>E-notched knives</td>
</tr>
<tr>
<td>1</td>
<td>triangular Woodland point</td>
</tr>
<tr>
<td>2</td>
<td>square ended blades</td>
</tr>
<tr>
<td>4</td>
<td>ovoid blades</td>
</tr>
<tr>
<td>11</td>
<td>drills</td>
</tr>
<tr>
<td>1</td>
<td>stemmed scraper</td>
</tr>
<tr>
<td>18</td>
<td>bull-shaped pestles</td>
</tr>
<tr>
<td>7</td>
<td>full grooved axes</td>
</tr>
<tr>
<td>2</td>
<td>roller pestles</td>
</tr>
<tr>
<td>1</td>
<td>unfinished gorget</td>
</tr>
<tr>
<td>3</td>
<td>slate pendants</td>
</tr>
<tr>
<td>1</td>
<td>slate tube</td>
</tr>
<tr>
<td>1</td>
<td>reworked bannerstone</td>
</tr>
</tbody>
</table>

246 total
### TABLE 2

**ARTIFACTS RECOVERED BY 8" DEEP FLOWING AT THE MCWHINNEY SITE**

<table>
<thead>
<tr>
<th>Number</th>
<th>Artifacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>82</td>
<td>McWhinney Heavy Stemmed points</td>
</tr>
<tr>
<td>5</td>
<td>side notched points (Big Sandy)</td>
</tr>
<tr>
<td>6</td>
<td>corner notched points (Cypress Creek and others)</td>
</tr>
<tr>
<td>4</td>
<td>corner notched serrated (Kirk Corner Notch)</td>
</tr>
<tr>
<td>1</td>
<td>straight stemmed bifurcate (not observed)</td>
</tr>
<tr>
<td>2</td>
<td>stemmed points (Archaic Straight Stemmed)</td>
</tr>
<tr>
<td>3</td>
<td>expanded stemmed points (similar to undifferentiated expanded stem points from the Eva site -- Lewis and Lewis 1961: 32, Plate 4f -- one resembles a crude dovetail)</td>
</tr>
<tr>
<td>33</td>
<td>blades</td>
</tr>
<tr>
<td>1</td>
<td>Paleo-Indian lanceolate point</td>
</tr>
<tr>
<td>5</td>
<td>flake scrapers</td>
</tr>
<tr>
<td>.5</td>
<td>drill sections</td>
</tr>
<tr>
<td>20</td>
<td>McWhinney Heavy Stemmed scrapers</td>
</tr>
<tr>
<td>1</td>
<td>side notched scraper</td>
</tr>
<tr>
<td>1</td>
<td>reworked bannerstone</td>
</tr>
<tr>
<td>2</td>
<td>pecked out bannerstones</td>
</tr>
<tr>
<td>1</td>
<td>slate blank</td>
</tr>
<tr>
<td>18</td>
<td>ground slate fragments</td>
</tr>
<tr>
<td>1</td>
<td>full grooved hammer</td>
</tr>
<tr>
<td>1</td>
<td>3/4 grooved axe</td>
</tr>
</tbody>
</table>

58
TABLE 2 — Continued

ARTIFACTS RECOVERED BY 8" DEEP FLOWING AT THE McWHINNEY SITE

<table>
<thead>
<tr>
<th>Number</th>
<th>Artifacts</th>
</tr>
</thead>
<tbody>
<tr>
<td>7</td>
<td>axe fragments</td>
</tr>
<tr>
<td>1</td>
<td>regrooved axe</td>
</tr>
</tbody>
</table>

200 total

flint pebble or flake from which it was made at the base or on one side of the point. A few weak stemmed points having a convexo-triangular transverse section were observed by the author in private collections in Defiance, Ohio. The fine quality flint of which they were made and the excellent workmanship make comparison difficult, however. Three out of a small collection of points from the Raisch-Smith site in the possession of the Ohio State Historical Society, appear to be of the McWhinney type. The rest were not available for study. Most of the stemmed and weakly side notched points from Raisch-Smith are thinner in cross-section than those of the McWhinney type and they lack the cortex at the base. (Plate 7b).

Big Sandy points occur at both sites as do the "blending type rectangular barreled bannerstones" (after Knoblock
‘229, 425), subrectangular bars of slate and bell-shaped pestles (over 300 pestles have reportedly been surface collected from the McWhinney site) (Heilman, personal communication 1970). Heavy grooved axes are also present from both sites, but those from Raisch-Smith are 3/4 grooved while those from McWhinney are full grooved.

A survey of the first collection from McWhinney reveals 233 artifacts that can be assigned with some certainty to the Archaic period. Of these, 176 or approximately 74% are types similar to those found in the Green River Archaic (Webb 1946: 236-40) and at the Eva site in Tennessee (Lewis and Lewis 1961). Of the 131 Archaic artifacts recovered during the second survey (8" plow depth), only 20 or 15% are similar to Green River types. There is a correspondingly higher percentage of McWhinney Heavy Stemmed. The presence of such typical Three Mile phase points as Big Sandy and Cypress Creek, as well as the general resemblance of many of the artifact categories to those of the Green River Archaic can be interpreted as evidence for heavy occupation of the site in late Archaic times (ca. 3000-2000 B.C.). The presence of small, corner notched serrated points resembling Kirk Corner Notched as well as small, stemmed bifurcate points may indicate an early Archaic occupation as well.

The William H. Davis mound (33Fr38) was a large Adena mound located on a terrace overlooking the east bank of Big Walnut Creek at the junction of county route 751 and State route 40, section 15 (NE), Turo Township, Franklin
County, Ohio. The mound had been reduced from a height of 70 feet (diameter 80 feet) to 4½ feet by gravel operations and was threatened with imminent destruction by a housing project. At this time (1959), Dr. Raymond Baby of the Ohio Historical Society obtained permission to conduct salvage excavations from the Davis Investment Company, which owned the site. Excavations continued throughout the entire summer of 1959, revealing 29 Adena burials and numerous artifacts. When the floor of the mound was reached, 4 circular Archaic pits were uncovered, 2 of which had been partly disturbed by a subfloor Adena burial pit. (Baby—Field Notes, Davis Mound).

The four Archaic pits contained the remains of 25 individuals interred in tightly flexed positions or as bundle burials of disarticulated parts. Archaic artifacts removed from these pits were as follows: (Plates 13, 14).

1. Five dog canine teeth drilled at one end for suspension with holes 2-2.5 mm in diameter.

2. One highly polished, flared mouth tubular pipe of cream-colored stone, possibly a pipestone. There is no indication that this was a smoking pipe. It was not burned or charred. It had been broken in the middle and repaired by drilling two holes in each side and grooving it all the way around on both sides of the holes. In such a state it would have been difficult, if not impossible to smoke. Length was 13.6 cm, mouthpiece diameter 3.0 cm, narrowest diameter 2.1 cm (near mouthpiece), front diameter 2.35 cm, interior front diameter 2.1 cm, interior mouthpiece diameter .85 cm.

3. Two shell spoons or ornaments about 10 cm long. The two long sides are cut and ground so that they are parallel. The ends are rounded. There are no perforations.

4. Two cylindrical beads of rolled copper found with the burial of a child. The longest is 1.3 cm.

5. A bone atlatl handle made from the cannon bone of a
deer split lengthwise. The two sides are highly polished and about 12 cm long.

(6) Six bone awls. One has a blunt tip and all are highly polished. They vary in length from 11.2 to 16.0 cm.

(7) A bone spatula 14 cm long, made from the ulna of a deer.

(8) Four antler flaking tools.

(9) Seven worked bird bones. The epiphysis has been left on one end, while the other end has been cut off square or at a slant. These seem to have functioned as hairpins.

(10) Two teardrop shaped, highly polished plummetts with grooved tops. These are similar in shape, but different in weight from plummets of the Frontenac phase of the Laurentian tradition in New York. Ritchie (1969:112) has said of these plummetts "I believe the latter were employed as sinkers in hook and line or trot line fishing, and in the first capacity, they might have performed the additional service of feeling the bottom as modern fishermen employ a lead, plummet-like sinker. Accurate knowledge of the character of the bottom and depth of the water is indispensable for angling success". In Ohio, these "plummets are generally considered bola weights. They are occasionally found in groups of two or three.

(11) Five fragments of worked beaver teeth.

(12) One hollow, tubular bird bone bead 2.6 cm long.

(13) One tubular bird bone bead, stained green by copper salts, 1.7 cm long.

(14) One roughly rectangular scraper made on a large flake. It is worked all over the dorsal face, but only one side of the ventral face has been flaked. The flakes are primarily of the expanding variety and there is nibbling use wear along the edges of the piece.

(15) One large shell disc 6.3 cm in diameter. It has a central hole that is .35 cm in diameter.

(16) Seven stemmed projectile points with barbed shoulders.

(17) One projectile point with a long, narrow blade and a curved base. It is 7.2 cm long (tip broken) and appears to be a very crude Dévétail (from mound fill).

(18) A proximal fragment of a small corner notched, barbed, expanded stemmed projectile point with a flat base.
Its type has not been determined (from mound fill). In addition to the finds from the Archaic pits, one broken roller pestle, one cylindrical pestle and one bell-shaped pestle were found in the mound fill and on the mound floor. Scattered mussel shells were also noted in the mound fill.

Interpretation of this site is difficult. Some artifacts of the above types, especially plummetts, can be found in amateur collections throughout the state, but, to this authors knowledge, there are no other recorded sites in Ohio yielding this type of artifact assemblage. The closest resemblances, especially in the projectile point types are to be found in the very late Archaic shellmounds of Alabama and Tennessee.

Projectile points identical to the stemmed points with barbed shoulders taken from the Archaic burial pits at the Davis mound were excavated by Webb and DeJarnette from the Bluff Creek site (Luo25), the O'Neal site (Luo61), the Smithsonia Landing site (Luo5), the Perry site (Luo25), the Long Branch site (Luo67), the Mulberry Creek site (Cto7) and the Flint River site (Mao48) in Alabama (Webb and DeJarnette 1942: 41-3, 52- 129, 178-208, 235-265; 1948: 35-6, 45, 69-70). Points of similar type have been recovered from the Raisch-Smith site in Preble County, Ohio (Point type IB), the Chiggherville site in Kentucky (Webb and Haag 1939:21 Fig.12) and the Robeson Hills site in Illinois (Winters 1969: Plate 15). A cache of nine of these points was reportedly found on the floodplain of the Little Miami
River 1½ miles above Morrow, in Warren County, Ohio
(Kolezar - personal communication May 1970). Other
occurrences of this type in Ohio are unknown at present.

The above points can be classified in Webb's Pickwick
Basin system (Webb and DeJarnette 1942:8-9) as types 7 and 13.
Both are large, broad bladed points with deeply barbed to
almost square shoulders and parallel sided square stems.
The stems are long and narrow in relation to the width of
the blade. Type 7 has symmetrical shoulders or barbs and a
thinned but unground base or stem. Type 13 has asymmetrical
shoulders, one square, the other barbed. Of the three specimens
from the Davis mound, one had a thin, lightly ground base
and stem, the others had thick, fractured bases. On one,
the sides of the stem were lightly ground. Webb states that
these two types, as well as his types 18 and 27 "are very
similar and might well have been regarded by their makers
as of the same form" (Ibid., 193). They will be listed in
this thesis as Pickwick Basin types 7 and 13. They appear
to be similar to what Bell (1958) has called Marcos points.

These types were found throughout the upper twelve
feet of the seventeen foot deep midden of the Bluff Creek
site in Alabama (Webb and DeJarnette 1942:121). In the upper
six feet of the midden, they were associated with grooved
axes, asymmetrical conical pestles, celts, two holed bar
gogets, needles and awls of bone, antler projectile points,
asymmetrical bone projectile points with a triangular
cross-section, pottery, sandstone bowls, dog burials and
human burials in a sitting position. In the 6 to 12 foot levels of the midden, they were found with cremated burials, atlatl hooks, needles, and awls of bone, antler projectile points and no pottery.

At the Long Branch site, these points were found only in the upper levels of the mound (Stratum A 1-5 feet). Pottery occurred in the 1 to 2 foot level. The points also occurred there but they were concentrated in the 3 to 5 foot levels, i.e., the late prepottery levels of the mound (Ibid: 196, 202). Stone tubular pipes have been recovered from some of the above sites in Alabama, but their association with the points is uncertain. The associations of the Pickwick Basin type 13 points from the Flint River site in Alabama were discussed earlier under type IB of the Raisch-Smith site.

The Alabama shell mounds discussed above were grouped by Webb and DeJarnette into their Lauderdale focus (Ibid.: 315-7). Especially large, characteristic and well excavated sites of this focus are the Mulberry Creek, Perry, Bluff Creek and Long Branch sites. Lewis and Kneberg (1959) have placed this focus (or phase) in their Eastern tradition, although it displays a great deal of similarity to certain Midcontinent tradition sites, especially Chiggerville and Ward (Ibid: 178; Webb and Haag 1939:1940; Webb and DeJarnette 1942: 314-17). The only carbon 14 date available for the sequence comes from the middle layers of the Perry site — 2814 B.C. ± 250 years (sample # C-756 and C-755). Lewis and
Kneberg (1959:175) have suggested that the Archaic occupation of these shell mounds began about 3500 B.C. and continued until about 1000 B.C. Table 3 shows a comparative trait list for the Davis mound, Chiggerville, Indian Knoll and Ward sites in Kentucky, the Lauderdale phase of Alabama and the Raisch-Smith site in Preble County, Ohio.

**TABLE 3**

**COMPARATIVE TRAIT LIST OF MATERIAL FROM THE DAVIS MOUND WITH MATERIAL FROM SITES OF MIDCONTINENT AND EASTERN TRADITIONS**

<table>
<thead>
<tr>
<th>Trait</th>
<th>Davis Chiggerville</th>
<th>Indian Ward Knoll</th>
<th>Lauderdale</th>
<th>Raisch-Smith</th>
</tr>
</thead>
<tbody>
<tr>
<td>Burial in round graves</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Flexed burials</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Partially flexed burials</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Burial offerings with adults</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Burial offerings with children</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Flared mouth tubular pipe</td>
<td></td>
<td></td>
<td></td>
<td>a</td>
</tr>
<tr>
<td>Teardrop shaped plummet</td>
<td>x</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Cylindrical and roller pestles</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Bell pestles</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
</tbody>
</table>
TABLE 3—Continued
COMPARATIVE TRAIT LIST OF MATERIAL FROM THE DAVIS MOUND WITH MATERIAL FROM SITES OF MIDCONTINENT AND EASTERN TRADITIONS

<table>
<thead>
<tr>
<th>Trait</th>
<th>Davis Chigger-ville</th>
<th>Indian Ward Knoll</th>
<th>Lauder-dale</th>
<th>Raisch-Smith</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projectile points #7, 13</td>
<td>x</td>
<td>x</td>
<td>b</td>
<td>9</td>
</tr>
<tr>
<td>Corner notch expanded base points</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>&quot;Dovetail point&quot;</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rectangular flake scrapers</td>
<td>x</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Flint scrapers</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Drilled dog canines</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Worked beaver teeth</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deer cannon bone atlatl handle</td>
<td>x</td>
<td></td>
<td>d</td>
<td>x</td>
</tr>
<tr>
<td>Bird bone beads</td>
<td>x</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Cut bird bones</td>
<td>x</td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Deer ulna spatula</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Antler flaker</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Shell spoon or ornament</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perforated shell disc</td>
<td>x</td>
<td></td>
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<td>x</td>
</tr>
<tr>
<td>Copper beads</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
TABLE 3 --Continued

a
Pipes present, but of the conical cloudblower type

b
Not common

c
Not common

d
These were recovered by Webb from a number of Green River sites (Webb—personal communication to R.S. Baby).

Missing from the Davis site are the atlatl hooks and weights, grooved axes, subrectangular bars, bone projectile points and the common stemmed and notched projectile points of the Midcontinent and Eastern traditions. Significant Davis artifacts not found in these traditions are cylindrical copper beads, the teardrop plummet and the expanded mouth tubular pipe. Pipes are present in the Lauderdale phase but they are of the conical cloudblower type, not the expanded mouth type. Plummets like those from the Davis site are known from the Frontenac phase of the Laurentian tradition in New York (see above) but there is little correspondence among the remaining artifacts.

In summary, the Davis site represents a very late Archaic occupation having close connections with the Green River Archaic of Kentucky and, especially in its projectile point forms, with the Lauderdale phase of the Eastern
tradition. It may represent a new phase of the Midcontinent or Eastern tradition, but information from at least two more sites is needed before such a phase can be legitimately defined. The extent of Archaic occupation at the site is unknown since time was not available to carry the excavation beyond the immediate vicinity of the mound. The presence of fabricating, processing and domestic implements such as pestles, whetstones, awls, spoons and razors indicates that it may have been a settlement or base camp (Winters 1969:137). The possibility also exists that the site was used only as a cemetery. Evidence is inconclusive. I would set a date for the site at somewhere between 1000 and 2000 B.C.

**LAMOKA—LAURENTIAN—BOREAL ARCHAIK—OLD COPPER**

Although the Lamoka phase is apparently restricted to New York state (Ritchie 1969:38), several of its diagnostic artifacts, especially the beveled adze and the Lamoka point are widespread. Beveled adzes are rare, but do occur in Ohio. Most specimens have come from the upper Ohio River Valley (Converse 1966). Twenty-two Lamoka points were recovered from the Mixter site in Erie County, Ohio (Shane 1967:138), six from the McKibben site in Trumbull County (Prufer and Sofsky 1965:30), one from the Lynch site #1 (33Ro39) and one from the Lynch site #4 (33Ro46) in Ross County and five from the Bentley site (33An4) in Athens County, Ohio (Shane and Murphey 1965:345). Also,
the Dustin point of Michigan is considered a western variant of the Lamoka point (White, Binford and Papworth 1963:103-5). The Durst Stemmed point of Wisconsin may also be a related form (Ritzenhaler 1967:25). Finds of these points in the Ohio Valley do not necessarily indicate the presence of the Lamoka culture. They also occur on Laurentian sites, especially the late Laurentian sites, in the upper Ohio Valley and in the upper levels of Kentucky shellmounds. Prufer and Sofsky (1965:30) have concluded that "Lamoka points west of New York represent a later intrusion into a basic Laurentian continuum".

Several Ohio sites belonging to the basic Laurentian tradition will be discussed presently. They generally contain projectile points of the Brewerton series as well as Lamoka, Genesee and Newton Falls Side Notched types. Occasionally, notched pebble netsinkers, adzes and plummets occur as well. "The full grooved axe is the common polished stone tool present at the southern Laurentian sites, while the plain or beveled adze is the prevalent tool on the northern upper Ohio Valley and New York sites" (Drapo 1958:209). Objects of native copper and ulus are rare in Ohio. One socketed copper spear from Ross County, Ohio is presently in the collection of Merle R. Sharp of Kingston, Ohio (Sharp 1953). One chipped flint ulu and a fragment of another were seen by the author in the collection of Charles Schmunk of Defiance, Ohio.
(Plate Sa ). They were found locally. Arthur G. Smith illustrated another from Huron County, Ohio (1965), and a beautiful specimen from Freble County is owned by H.C. Wachtel of Dayton, Ohio (1968:110).

One local phase of the Laurentian in Ohio has been termed the McKibben phase by Prufer and Sofsky (1965:37). It is based on their excavations at the McKibben site in Trumbull County, Ohio. This phase has been defined to include Newton Falls Side Notched, Brewerton, Lanoka or Dustin, Lake Erie Bifurcate Base, Vosburg and probably Genesee points as well as drills, scrapers, adzes, celts, pitted stones and atlatl weights. It is dated 3000-1500 B.C. (Ibid.). As stated earlier, it is my opinion that Lake Erie Bifurcate Base points represent an earlier archaic occupation and are not a part of the Laurentian tradition.

The McKibben site (33Tr57), after which the phase is named, is located on the first terrace of the east bank of the Mahoning River, one mile north of Princeton, Trumbull County, Ohio. Test squares dug by Sofsky revealed no excavatable hidden and all artifacts are from the surface and the plow zone. Two archaic components were isolated typologically, the McKibben phase Laurentian and a Transitional assemblage (cf. Witthoft 1953). Included in the McKibben phase assemblage were 28 Newton Falls Side Notched points (also called Big Sandy, Otter Creek, Osceola and Pymatuning Side Notched), 64 Brewerton Side
Notched, 26 Brewerton Corner Notched, 4 Brewerton Eared Notched, 2 Brewerton Eared Triangle, 35 possible Genesee points, 6 Lanoka, 23 Lake Erie Bifurcate Base and 3 Vosburg points. Also found were end scrapers, several types of drills, 8 fragmentary atlatl weights, 5 adzes, 2 celts and 2 bipitted stones. The Transitional phase was represented by 16 Ashtabula (Susquehanna Broad) and 5 Perkiomen Broad points. There was no evidence of the Panhandle Archaic at this site although it occurs at several other sites in the County (Fruter and Sofsky 1965: 38).

A second phase of the Laurentian tradition in Ohio is based on the Mixter site (33Er4), a multicomponent site located on a high bluff overlooking the east bank of the Huron River near Milan, Erie County, Ohio. Arthur George Smith of the Firelands Museum in Norwalk collected from the site for twenty-five years and conducted test and salvage excavations from 1951 to 1954. Much of the site has since been destroyed by gravel operations. The material recovered has recently been analyzed and described by Orrin C. Shone (1967:121-186).

Cultural materials from the site range from Paleo-Indian through late prehistoric. The Archaic artifacts are primarily from surface collections and have been separated typologically by Shone into three groups. The early Archaic group has already been discussed. The remaining two components are affiliated with the Mixter phase.
of the Laurentian tradition and with Witthoft's Transitional "Period" of Pennsylvania (1953). Laurentian point types from this site include Newton Falls Side Notched, Vosbury, Brewerton Side Notched, Corner Notched and Eared Notched, Genesee and Lapoka or Dustin. Fourteen out of seventy-six points were made of Onondaga chert. There were, in addition, hafted scrapers, end scrapers on flakes and blades and knives and drills similar to Laurentian types. Materials belonging to the Transitional assemblage included Susquehanna Broad (Ashtabula), Perkiomen Broad, and Lehigh Broad points. There were also 33 side and corner notched points and 25 stemmed points of uncertain affiliation.

The lack of ground stone tools, high incidence of broken basal fragments of projectile points (bases/whole points = 4/1) and general situation of the site (overlooking the entire valley) indicated to Shane that it served its many inhabitants as a hunting camp. "Evidence from the Woodland occupations indicated that the site was used as a station for elk and deer hunting during fall and winter! (Shane 1967:145).

A survey of 49 sites in the Scioto Valley by Prufer (1967:273) revealed only 7 sites having important Archaic components. These were:

1) The Oberly site (33Ro48. This site is located one mile north-west of Hopewton on a meander of the Scioto River in Ross County, Ohio. Out of a total of 64 projectile points,
five were Archaic - Orient Middens, Brewerton Corner Notched, Archaic Square Stemmed, and Ashtabula or Susquehanna Broad.

2) The Alva site (33Ro50). This site is located just north of route 35 South of Chillicothe, and one mile west of the Scioto River in Ross County, Ohio. Out of 19 points, four were Archaic - Brewerton Side and Corner Notched and Archaic Stemmed.

3) The Harness Site "Cluster" (33Ro9). This is a collection of artifacts from 24 localities near the Harness Earthworks in Ross County. Locality 2 at this site yielded a collection of 64 artifacts of which three were Archaic - Brewerton Eared Notched and Ashtabula or Susquehanna Broad points and a corner notched hafted scraper.

4) Caldwell's Slope (33Ro6) is located on the steep slope overlooking the Scioto River just north of route 35 and the B. and O. railroad overpass near Richmond Dale in Ross County" (Ibid:298). Out of 30 artifacts collected, 3 were Archaic, 2 were Woodland and the rest were indeterminate. The Archaic points were Brewerton Eared Notched and Corner Notched.

5) Caldwell's Bluff (33Ro7) is located on a high bluff on the east bank of the Scioto River near the confluence of the Scioto and Salt Creek, Township 8 N, Range 20 W, Section 4, Ross County. Out of 1004 artifacts recovered from this huge site, only 19 were Archaic — Kirk Serrated, Lake Erie Bifurcate Base, Brewerton Corner Notched and
and Eared Notched and Pentagonal points, stemmed hafted scrapers and three-quarter and full grooved axes.

6) The Lynch Site Complex is a group of sites located on the Lynch farm, Ross County, Franklin Township 7 N, Range 20 W. One of the sites in this complex, Lynch-4 (33Ro46) was test excavated but all artifacts were recovered from the plow zone. Out of 171 artifacts, mostly Hopewellian, there were 8 Archaic finds — Lake Erie Bifurcate Base points, Lanoka, Newton Falls Side Notched, Brewerton Eared Notched and Archaic Crudely Stemmed points and hafted scrapers.

7) The Tackitt site (33Pk1) is located south of the Scioto River in Pike County, Township 6N, Range 21 W, Section 3. Of the 8 artifacts recovered, 4 were Archaic, 1 was Woodland and 3 were indeterminate. The Archaic artifacts were Brewerton Side Notched and Corner Notched points and Archaic Crudely Stemmed points.

In summary and on the basis of present information, Archaic occupation of the main Scioto River valley does not seem to have been extensive. A few early Archaic elements are present in the form of Kirk and perhaps Lake Erie Bifurcate Base points. Most of the remainder of the material is of standard Laurentian type, with the exception of the Ashtabula and pentagonal points. The situation in the main valley differs greatly from that in the tributary Salt and Paint Creek Valleys. A survey of this region by McKenzie (1968) revealed extensive Archaic occupation. In addition, the artifact inventory
from the sixteen Archaic sites investigated made possible the definition of a third phase of the Laurentian tradition in Ohio, the Dunlap phase (Ibid.).

Most of the sites located in the survey were situated on terraces overlooking the Salt Creek Valley. Cultural material was thinly spread over large areas averaging about 1/4 square mile. One terrace had over a mile of continuous occupation debris. None of the sites appeared to be stratified or to have any depth to their cultural accumulations. All were totally lacking in mussel shells, even though mollusks are abundant in the valley at the present time. "In content, assemblages were uniform in all parts of the region surveyed. No radical changes in the totality of artifact types present from one site to another could be perceived. Furthermore, virtually all Archaic sites were single component occupations" (McKenzie 1968:35).

The 77 typed projectile points recovered in the survey break down as follows: 5 Brewerton Corner Notched, 2 Brewerton Eared Triangle, 19 Brewerton Side Notched, 4 Lenoir, 2 Newton Falls Side Notched, 3 Dustin, 4 Lake Erie Bifurcate base, 6 Drake Indented Base (MacCorkle), 3 Kirk, 4 Ashtabula, 6 triangular points (possibly Archaic), 5 large stemmed points, part of a Dovetail and 5 miscellaneous points. Also found were end, stemmed end, side and flake scrapers, knives or blanks, expanded and rectangular base drills, choppers, axes and cupstones.
Most of the points discussed above are Laurentian types. The position of the Kirk, Drake and Lake Erie Bifurcate Base points has already been discussed under the early Archaic. The Ashtabula points seem to represent a minor Transitional occupation of the area (they may also have been traded in). The Panhandle Archaic is not represented at all, despite the fact that its major sites lie nearby.

The Dunlap phase may be differentiated from the McKibben phase by the heavy stone tools in association and by the thinness and large areal extent of the sites. The chopper and axe are found in the former and the adze, celt and the ground stone atlatl weight in the latter. McKenzie has estimated the date of the Scioto Valley Archaic at ca. 3000-2000 B.C. The geographic distribution of the Dunlap phase appears to be primarily Ross, Pike and Vinton Counties along the tributaries of the Scioto. It may extend further north and south as well (Ibid.:49). The closest relationship of the phase to sites outside the region is believed to be with the McKibben site in northeastern Ohio and with the Rohr Rock Shelter in West Virginia (Ibid. 50).

A two week survey of 16 sites in the Hocking Valley from Lancaster to Hockingport, Ohio also revealed the presence of Laurentian materials on most of the sites. Projectile points were of the Brewerton series, Lake Erie Bifurcate Base, Newton Falls Side Notched and numerous small stemmed points. In addition to points, there were
endscrapers on flakes and various hafted endscrapers, Grooved axes and hawks, bipitted hammerstones, net sinkers and one fragmentary butterfly atlatl weight (Shane and Murphy 1967:329-332). In earlier Archaic horizon similar to Coe's Carolina Piedmont (1964) was represented by Kirk Corner Notched, Falmer Corner Notched and Stanley Steeped points. Ashtabula points were also present. The Laurentian materials were concentrated on low terraces along the Hoinking River and "the settlement pattern appears to have been one of small camps, established on slight knolls" (Shane and Murphy 1967:332). The sites were apparently occupied repeatedly and seasonally by small groups of people (Ibid.).

Three sites along the Ohio River in Lawrence County, Ohio may be related to the Dunlap phase of the Scioto valley, although their ground stone artifact inventory is more extensive. There is a good possibility that they may form a new, undefined phase of the Laurentian tradition in Ohio. These sites are the Newman site, the Ohio Baptist site and the Goldcamp site (Hastings 1967, 1968, 1970).

The Newman site "is located between the Ohio River and the Norfolk and Western railway, southwest of the intersection of Memorial Street and U.S. route 52 in Coal Grove, Upper Township, Lawrence County, Ohio" (Hastings 1967). The cultural materials at the site are scattered across a one acre field and all are from
surface collections. The point typology used in the original report was based on Converse (1967). I have, working from drawings and photographs, attempted to convert these types to the types used in this thesis. They include: corner and side notched points, some with basal grinding and others of the small variety termed birdpoints by collectors (Brewerton), straight stemmed points with basal grinding (Genessee), contracting stem with heavy basal grinding, wide stem with barbed shoulders (Vosburg?), and expanding stem with heavy grinding (Durst?). Other artifacts of chipped stone include drills, some of which are t-based, thumbnail scrapers, blades and ovate knives. Most are chipped from local nodular chert, but a small number are of Kanawha River flint from West Virginia. Polished stonework consists of one 3/4 grooved axe of granite, one granite adze and two unfinished hematite adzes, two rectangular celts and part of an unfinished hematite plummet. There are also a few artifacts of late Woodland affiliation.

The Goldcamp site is located on a third terrace of the Ohio River five miles west of Ironton in Lawrence County, Ohio. Projectile points from the site were of the expanding stem, contracting stem and side notched types (Lamoka and Brewerton?). Some were chipped from Kanawha River flint and others were of Brush Creek flint or local nodular chert. Ground stone items included one 3/4 grooved axe of granite, one hematite plummet and
two sizes of hematite (Hastings 1970).

The Ohio Baptist site is a multicomponent site located three miles west of Hanging Rock between the Norfolk and Western railway and old U.S. route 52 in Hamilton Township, Lawrence County, Ohio. All artifacts are from surface collections. Archaic projectile points include: expanded stem (Lamoka-Durst), stemmed, concave based points with rounded shoulders (Orient Fishtail), straight stemmed points (Genessee?), contracted stem, corner notched with basal grinding (Brewerton Corner Notched), Archaic side notched with heavy basal grinding, side notched with basal grinding (Brewerton Side Notched), a fragment of a Heavy Duty point (Kirk Serated) and a pentagonal point. Other chipped flint artifacts include owate knives and hafted scrapers. A number are made of Kanawha River flint. Ground stone includes a hematite adze and plummet, one bell pestle and three pecked and polished celts (Hastings 1968).

All three of the above sites represent repeated, probably seasonal, occupation by small groups of people. None of them gave any evidence of having a shell middlen. The early Archaic is represented by the base of a single Kirk point. The remainder of the material correlates most closely with the Laurentian Brewerton and Frontenac phases and possibly the Transitional Orient phase. (Ritchie 1969: 89-124, 164-178). The forms of the various projectile points also resemble those from the Dixon and Rohr
rockshelters in West Virginia and the Gay Shriver site in Pennsylvania (Dragoo 1958: 147-197). Table 4 is a comparison of the diagnostic traits of the Brewerton phase, McKibben phase and Dunlap phases of the Laurentian tradition with those from the Newnan, Ohio Baptist and Goldcamp sites. Comparison is also made with the Sloane site in Jefferson County, Ohio. This site also has Laurentian affiliations, but its artifact inventory differs considerably from the three Lawrence County sites. In order to restrict the width of the table, the names of the phases and sites have been abbreviated thus:

Br- Brewerton phase, MK- McKibben phase, Dn- Dunlap phase, Nn- Newnan site, OB- Ohio Baptist site, Gc- Goldcamp site, Sl- Sloane site.

### Table 4.

**A Comparison of Artifacts from Various Laurentian Sites and Phases**

<table>
<thead>
<tr>
<th>Artifact</th>
<th>Br</th>
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<th>Dn</th>
<th>Nn</th>
<th>OB</th>
<th>Gc</th>
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<td>3/4 Grooved axe</td>
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<td>Full grooved axe</td>
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<td>Notched pebble netsinker</td>
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<td>Ground slate points</td>
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<td>Lamoka-Dustin points</td>
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<td>Notched points</td>
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<td>Orient points</td>
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<td>Lake Erie Bifurcate Base</td>
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<td>Base points</td>
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<tr>
<td>Genessee points</td>
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<td>Vosburg points</td>
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</tbody>
</table>

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*a* Only the bit section of a polished sandstone axe was found. It is not known whether it was 3/4 or full grooved.

*b* A minor type
The Sloane site (33Je6) is situated on a high plateau overlooking the Ohio River inside the corporate limits of Toronto, Ohio. It was surveyed and collected from between May 1967 and October 1968. Test pits revealed a midden containing mussel shells and flint chips to a depth of 14". Projectile points were very crudely made but included side and corner notched forms similar to the Brewerton types and larger, stemmed points resembling the Genessee type. Other tools included the adze, full grooved axe, notched pebble netsinker, pitted stones, bell pestle and chopper. Over 90% of the artifacts from the site were diagnostically Archaic. Most of the rest were Adena (Littlecott and Fair 1969).

THE PANHANDLE ARCHAIC

The Panhandle Archaic complex does not seem to have penetrated very deeply into Ohio. Prufer and Sofsky state that "material of this complex does occur at numerous sites within Trumbull County" (1965:38). McKenzie (1968:49) failed to find any evidence of it in his survey of the Scioto Valley. Shane and Murphey's survey of the Hocking Valley (1967:335-6) also failed to turn up any of the characteristic Panhandle Archaic artifacts (most diagnostic are the Steubenville points and grooved adzes). A number of small camps were located by Meyer-Oakes (1955:74-6) in the Beaver River drainage (Trumbull and Mahoning Counties). No Steubenville points or grooved adzes
occurred in any of the sites surveyed by this author.

THE TRANSITIONAL PERIOD

The Transitional "Period" of Pennsylvania as defined by Witthoft (1953:4) was an interval "between the last prepottery cultures and the earliest ceramic period" (1200-700 B.C.). It seems to have persisted for only a short time, but was extremely homogeneous in sites where it occurred. Characteristic artifacts are the large, thin Susquehanna Broad spears, hafted drills and scrapers with bases like those of the spears, long oval pebble netsinkers with notched ends, beads, gorgets and vessels of soapstone, oval adzes, cupstones and gorgets of shale with v-shaped notches ground into the ends. Steatite tempered pottery may occur on very late sites of this complex. Virtually all other chipped stone tools are made from a purplish porphyroblastic which outcrops in Franklin and Adams Counties, Pennsylvania (Ibid: 8-9). Sites of this complex occur only along the major rivers and almost never along secondary streams or in the back country (Ibid:11).

To my knowledge, no sites containing a full Transitional period complex are known in Ohio. Large spearpoints called Ashtabula are, however, found in site and surface collections over most of northern and eastern Ohio. They are rare in the southwestern part of the state (Shane 1967: 141; Converse 1963:105). The Ashtabula
point is a straight-based variant of the Susquehanna
Breed (n. 441). It occurs alone or in association with
Perkiomen and/or Lehigh Breed spears (n.441; 443;
Frufer and Sefsky 1965:33), but the rest of the material
culture complex is not present. The occurrence of the
above point types at the Mixter and McKibben sites and
in the Scioto and Hocking Valleys has already been discussed.

THE EASTPORT COMPLEX

The Archaic of northwestern Ohio is very poorly
known at the present time; however, through the courtesy
of Randall L. Buchanan of Defiance College, Defiance, Ohio,
I was able to examine five representative collections
from the area. Most of the earlier comments on Archaic
materials from Defiance County are the results of this
study. Two of the collections, those of Mrs. Gregory and
Mrs. Brooks, both of Defiance, Ohio, have been made
primarily from one site, the Ryan farm. This presented
an excellent opportunity for study of an unixed collection
from a single site in the area.

The Ryan site is situated along the Auglaize River
inside the corporate limits of Defiance, Ohio. It has
been surface hunted by local collectors for many years
and has yielded artifacts from several time periods,
including possible Paleo-Indian materials. The most
extensive occupation of the site seems to have been
Archaic and it is closely related to Archaic sites in
Michigan. Most chipped stone artifacts are made of a local, white, liney, fossiliferous chert. This is a very poor material and its use resulted in a series of crude appearing artifacts. A few pieces, primarily small, oval, unifacial scrapers were chipped from a fine, shiny, blue-grey chert with scattered small inclusions of translucent white or light blue chalcedony. Its source is unknown.

Artifacts recovered from the site are of the same types as those reported by Binford and Papworth for the Eastport site in Antrim County, Michigan and by Binford for the Hodges site in Saginaw County, Michigan (Binford and Papworth 1963: 71-123; Binford 1963:125-148). They include convex based, side notched points of the Dustin, Davis, Hunt and Hodges types, large, square Eastport Knives with square hafts and oval, uniface scrapers on flakes of Binford's types A,B and D (Ibid. 103,107, 130). No Fourranky points were noted, although fragments of finished specimens or rejects may have been present in the numerous boxes of fragments and chippage which escaped detailed examination. There was one broken blade of reddish brown flint exhibiting a flute that had removed the median ridge. This is one of the initial stages of manufacture of the Fourranky point (Ibid.:82). Other artifacts from the site include one plano-convex adze (these have also been recovered from the Hodges site) (Ibid.:145), one keeled scraper, one bell pestle and a fragment of another, one expanded base drill, one bulbous
base drill, one straight drill, one 3/4 grooved scraper, one Archaic Bevel and one LeCroy point. One keeled scraper, one unifacial scraper and two Eastport Knives were also seen in the collection of Charles Schmunk, also of Defiance, Ohio. They were collected locally (Plate 36).

The Eastport and Hodges sites are believed to be quite late in time. Binford and Papworth have set a date for the Eastport site, based on its geologic context and similarity to other sites, of 1300-500 B.C. (1963: 121). The Hodges site compares favorably with the Oberlander #2 and the Morrow sites in New York that have been dated at 998 B.C. ± 170 and 561 B.C. ± 250 years (no sample numbers given). Binford (Ibid:147) has, on this basis dated the Hodges site at about 650 B.C.
FIGURE 4 -- THE LATE ARCHAIC
PART III

1. TYPOLOGY OF ARCHAIC PROJECTILE POINTS IN OHIO
The following projectile point typology is an attempt to systematize descriptions and nomenclature for the major Archaic projectile point types found in Ohio. Those types which the author was able to personally examine have been described according to the attribute list compiled by White, Binford and Papworth (1963:194-221). In the case of important types which were not available for analysis, descriptions by other authors have been quoted. The points used in the analysis came primarily from the extensive typological collections of the Ohio Historical society in Columbus, Ohio. Sample size refers to the number of specimens in this collection.

Prufer and Sofsky (1965:21-2) have admirably summed up the problems that face the classifier attempting to deal with Archaic point types. They note that some point classes, such as Turkey Tails, have relatively fixed and easily recognizable attributes. They then state

"On the other hand, numerous point classes do not easily lend themselves to meaningful formal classification. Again, by way of example, one might cite here the many side and corner notched as well as stemmed points that abound in most archaeological assemblages. While various published classifications define such forms, usually in terms of cultural and/or chronological affiliations, it is often clear that quite frequently different classifications purporting to define the same type of point include a wide range of rather different looking specimens in their type categories. Worse still, inspection will show that specimens included in one type might just as well be classified with another type that may or may not be contemporary with the former".

Distribution maps have been included along with the point description wherever possible. They should
be studied with the following information in mind.

1) The distribution maps are based on the typeological collections of the Ohio Historical Society, upon published site reports and any other published material that was available (primarily back issues of the Ohio Archaeologist). The Ohio State Museum Type collections are the result mainly of gifts and are highly biased toward certain counties, notably Wayne, Knox, Franklin, Licking, Fairfield, Fayette and Ross. Blanks in the distribution map do not indicate that these points are absent in these counties, but only that there is no available information.

2) Private collectors could not be extensively sampled due to lack of time and transportation. Only Preble and Defiance Counties were visited. The Defiance County collections can, however, be taken as representative of northwestern Ohio (L. Buchman, personal communication 1970).

3) The Ohio Archaeologist (the entire New Series) was searched for photographs and site reports mentioning the various projectile points being considered. Many of the more mundane types are, however, grossly under-represented by collectors, who prefer to concentrate on the more "showy" large artifacts such as Bowetails, Turkey Tails and Ashtabula points. Even when photographs were provided, it was impossible to identify many of the side notched, corner notched and stemmed point varieties which are distinguished primarily by details of chipping,
basal grinding, thickness, etc., which are generally not apparent in photographs.

The distribution maps are therefore dependent upon the vagaries of donation and publication. A true picture could not be obtained except by an intensive county by county and collector by collector survey. Several such surveys are now underway or about to begin but will require years to complete.

4) Many of the stemmed, side notched and corner notched forms have wide spatial and temporal spans. Surface collections can give some indication of distribution, but cannot control for time depth.

5) All photographs are by the author and are full size unless otherwise noted.
### TABLE 5
THE PROJECTILE POINT COLLECTIONS OF THE
OHIO HISTORICAL SOCIETY

<table>
<thead>
<tr>
<th>Type</th>
<th>Sample Size</th>
</tr>
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<tbody>
<tr>
<td><strong>Early Archaic</strong></td>
<td></td>
</tr>
<tr>
<td>Kanawha Stemmed</td>
<td>88</td>
</tr>
<tr>
<td>Kirk Corner Notched</td>
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<tr>
<td>Kirk Serrated</td>
<td>37</td>
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<tr>
<td>Kirk Unserrated Stemmed</td>
<td>53</td>
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<tr>
<td>Lake Erie Bifurcate Base</td>
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<td>LeCroy Bifurcate Base</td>
<td>119</td>
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<td>MacCorkle Stemmed</td>
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<td>Ohio Bifurcate Base</td>
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<td></td>
<td>4 Subtotal</td>
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<td><strong>Late Archaic</strong></td>
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<tr>
<td>Archaic Bevels</td>
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<tr>
<td>Ashtabula</td>
<td>2</td>
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<td>Brewerton Corner Notch</td>
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<td>Brewerton Eared Notch</td>
<td>9</td>
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<td>Brewerton Side Notch</td>
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<tr>
<td>Big Sandy Side Notch</td>
<td>20</td>
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<tr>
<td>Type</td>
<td>Sample Size</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------</td>
</tr>
<tr>
<td><strong>Late Archaic</strong></td>
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<td>Cypress Creek II</td>
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<td>Dovetail</td>
<td>11</td>
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<tr>
<td>Lanoka-Dustin</td>
<td>21</td>
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<tr>
<td>Pickwick Basin # 7 and 13</td>
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<td></td>
<td>119 Subtotal</td>
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<tr>
<td><strong>Indeterminate</strong></td>
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<td>Archaic Straight Stermed</td>
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<tr>
<td>Decatur</td>
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<tr>
<td>McWhinney Heavy Sterned</td>
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<tr>
<td></td>
<td>26 Subtotal</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>954</td>
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Archaic Bevels (See plates 1, 2)

Reference: Converse 1963:96; Smith 1950

Date: Late Archaic-Early Woodland? Converse (Ibid.) dates these points as Archaic on the basis of their occurrence at the Raisch-Smith site (Moffett 1949:430). They also occur at the predominantly Archaic Solothor site in Defiance Co. (Kim 1967:151). This site, however, also has an Adena component. Mayor-Oakes (1955:80) says of the type 2 bevel this "is a distinctive type of projectile point which appears more frequently in the Beaver drainage than in any other part of the Upper Ohio Valley.... No good evidence exists for the associations of this point, but it does appear consistently on sites with Early Woodland gorgets and tubes."

Sample Size: 17 points, 3 reamers.

Description: Bevels were divided into 6 major forms by Smith (1950:32-33). His classification has been adopted here.

**Type 1** This is a straight to subconcave based, diagonal notched form having a triangular or slightly incurvate blade. The notches are deep, resulting in large barbs and an expanding stem.

**Type 2** This type has a heavy bilobed, indented base that often seems too large for the triangular or slightly incurvate blade. The small size of the blade in relation to the base generally appears to be the result of extensive resharpening. Prufer and Sofsky (1965:23-4) believe this point type to be related to Newton Falls (Big Sandy) side notched.

**Type 3** This type has diagonal notches resulting in an expanding stem and slightly barbed shoulders. The blade is triangular or excurvate and the
base rounded but slightly nicked in the center producing a very small indentation.

**Type 4** This point has very narrow and deep diagonal notches producing large barbs and a semi-circular stem. The base is subconcave to concave with rounded corners. The blade is excursive.

**Type 5** This type is sometimes referred to as an E-Notch Bevel. It has an incurve or triangular blade with a straight or slightly excursive base and side notches that expand as they move toward the longitudinal axis of the point. A small "nipple" was generally left in the center of the notch producing an E or keyhole shape.

**Type 6** This type is very similar to type 4 except that the notches come in from the side rather than being diagonal. As a result the base is nearly as wide as the blade, while in type 4, it is only a little over half the width of the blade.

A seventh type of beveled point was observed in the collections of the Ohio Historical Society. It had a slightly incurve blade, barbed shoulders and a square stemmed base. It is believed that this represents a resharpened point of some other type, possibly even Woodland and it is not a true bevel. Signs of resharpening are present and seem to be responsible for the incurve shape of the blade. In addition, the bevel is on the opposite side of the blade from its position in all of the other forms of bevels. Smith (1954), after much experimentation in the manufacture and use of such points, concluded that they were beveled while being held with the base of the point toward a right-handed worker. As a result, when the point is held in this position, the visible portion
of the bevel is on the left side of the point. If the point was reshaped while mounted on a long haft, it could not be held in the position as the shaft would interfere with the worker's movements. It then had to be sharpened with the point held toward the worker, beveling the right side of the blade (when held with the base toward the observer). This is apparently the situation here, whether or not the point was originally beveled is unknown.

All the bevels are biaxial or biconvex in transverse and longitudinal section. Primary chipping scars are massive, deep, conchoidal and bifacial. Secondary scars are of the smooth lamellar type. They are present on opposite faces at opposite edges (alternating faces-bilateral). The secondary scars are continuous along the bevel faces. A few patterned clusters of secondary scars may appear on the opposite face to remove the ridge scars of the primary flakes and smooth the blade. "Nibbling" wear from use (Binford, White and Pagworth 1963:207) is present on about half of the specimens. Most of the blades are finely serrated.

The major differences between the types lie in the form of the base and notches. All bases are slightly smoothed by grinding except the type 7 bevel. Some of the bases are quite heavily ground, but this grinding almost never extends into the notches. Bases may be straight, subconvex, subconcave or concave. They are always symmetrical. Flake blank orientation has been obscured by chipping although the curvature of some of the larger points indicates that it was distal or proximal (i.e., either the proximal or distal end of the point was originally the striking platform of the flake blank).
The primary flaking of the haft element has been almost totally obliterated by basal thinning and notching flakes. It appears to have been diminutive and bifacial. Secondary retouching is continuous and bifacial. Configuration of the base and notches is highly standardized within types. Basal thinning was accomplished before the point was notched—the scars of notching obscure the thinning scars. Notches appear to have been made by double, bifacial blows. Long, deep notches may have required two blows, but if so, the second blow removed all traces of the first. The sides of the notch were retouched when necessary.

The only notches regularly formed by 2 blows were those of the E-notch or expanded notch bevels. The two blows, side by side but not quite overlapping, left the characteristic nipple or E-shaped notch.

Beveled reamers also occur. They display many of the same shape and chipping attributes as the points, but lack the notching and grinding. They generally form a long, thin triangle, with long sides incurvate and straight or slightly excurvate base. The tip and sides show crushing and nibbling use wear, and in one case, burination from use.

Size of bevels ranges greatly. Large ones may be 11 cm or more in length. Small ones may be 5 cm or less.

Distribution: Archaic Bevels are fairly common throughout Ohio (Converse 1963:96). Their distribution outside of this area has not, to my knowledge, been mapped. Two type 1 bevels are illustrated by Webb (1939 plate 115B) as having come from a site in Mason County, Alabama.
FIGURE 5—
Distribution of Archaic Beveled
Points in Ohio
N = 149
Archaic Straight (or Square) Stemmed (See plate 4a)

Reference: Dragoo 1958:159-160, 180; Shane 1967:140; Smith 1956
Date: Middle Archaic to Late Woodland (Shane 1967:140).
Sample Size: 19

Description: Shane has said of these points "The attributes...are so generalized that their classification is next to impossible" (Ibid). They are medium sized points (usually 5-6 cm) with straight shoulders and a square stem. Methods of manufacture and chipping vary widely. They are usually about twice as long as wide.

Blade: The blade is triangular to ovate in shape and asymmetrically biconvex in longitudinal and transverse section. Chipping and thickness vary with the quality of the material (and the skill of the worker). Some points have steep edge chipping which creates a medial ridge running down the back of the point.

Shoulders: may be weakly defined, square or slightly barbed.

Stem: generally wide in relation to blade width with parallel to slightly expanding sides. May be unground to heavily ground.

Base: straight to subconvex. May be thinned only, ground or faceted by a lateral-medial burin blow such as is found on several other types of Archaic points (LeCroy, Decatur, Stalbans).

Comments: This type is obviously a catch-all. Very similar types have been defined in other areas (i.e., Genesee (Ritchie 1961:24), Bare Island (Ibid.:14), Fox River Valley Stemmed (Ritzenthaler 1967:21), but they blend into one another and individual points are difficult to classify.
and could fall into any one of several categories. To make matters worse, this type persisted for a very long period of time. They are found at all levels of the Dixon and Rohr Rock shelters in West Virginia, both pre- and post-pottery (Dragoo 1958:159-60, 180). They occur with Archaic materials at the McKibben site (Prufer and Sofsky 1965), the Raisch-Smith site (Moffett 1949; Long 1962), the Annis shell mound in Kentucky (Webb 1950) and the McCain site in Indiana (Dragoo 1959:225-31).

"Points almost identical to this class were found at the late Middle Woodland Watson site in West Virginia and in the late Woodland refuse pits at the Mixter site" (Shane 1967:140).

Distribution: These points are found in quantity throughout Ohio. From the above discussion it can also be seen that they have wide distribution in the Eastern United States as a whole.
Ashtabula (Susquehanna Broad) (See plate 4b)

Reference: Bell 1960:4; Converse 1963:105; Ritchie 1961:52-54; Witthoft 1953

Date: Transitional Period 1200-700 B.C. (Witthoft 1953)

Sample Size: 2

Description: The Ashtabula point is a straight based variant of Susquehanna Broad. Witthoft's description of Susquehanna Broad applies equally well to Ashtabula points and is quoted here.

General Form: "Broad, boldly flaked spearpoints of roughly semi-lozenge to rough corner notched shape, with certain characteristic contour details. Generally half as long as broad or less. Rarely quite narrow. Tip: Acutely to obtusely pointed, thin, most often with convex edges. Tip not extremely acute. Blade: Triangular, usually with some portion of the edges convex, especially near tip. Edge often somewhat concave near base. Frequently not symmetrical. In cross-section, the faces of the blade are evenly rounded rather than keeled or flat. Retouching of the edge to final contour was usually from one face of the blade. Ears: Not barbed, but jutting in a characteristic fashion. The ears are usually angular, forming an obtuse angle, and are sometimes somewhat rounded. In either case, they are always thin and sharp, carefully retouched to thin, straight edges. Frequently the blade edge in front of the ear is slightly concave. The ears seem to have been intended as a cutting corner, perhaps adapted to enlarging a wound with withdrawal of the spear. Main contours of the ear and tang were formed by boldy striking off two or three flakes from each corner of the blank, and the final retouch to these parts is generally from one face of an edge only. After one edge was retouched from one face of the point, the point was turned over and the other edge retouched from one face, with a minimum of chipping from the other face. Ears are often quite asymmetrical. Tang: Always constricted and almost always with a concave base: base is rarely straight or extremely concave [Ashtabula points usually have a straight base]. Base of the tang narrower than the ears, with tang corners generally acute and
prominent. All edges of the tang are always ground smooth [not all Ashtabula points are ground], including the basal corners of the tang. This grinding is a facet across the edge rather than a rounding off of the edge. Edge grinding ends at the beginning of the basal edges of the ear, generally at a break in the contour of the outline. The change in outline at this point is partly a result of the grinding and partly a result of the retouch shaping which preceded the grinding.

Size: Most specimens are between an inch and a half and four inches long; rare examples are as short as an inch and as long as eight inches."

Comments: Most Susquehanna Broad points are made from a purple aprobhythmolite that outcrops in Franklin and Adams Counties, Pa. (Vitthoet 1953:8-9). The material generally used in Ohio is flint, particularly fine quality Coshocton flint and grey flints from northern Ohio. Flint Ridge Flint and Onondaga Chert are also represented (Converse 1963:105).

Distribution: These points are relatively common in eastern and northeastern Ohio. In the southern and southwestern parts of the state they are virtually absent. To the east, they extend into Pennsylvania and New York (Frufer and Solsky 1965:33). (See distribution map.)
FIGURE 6.—
Distribution of Ashtabula Points in Ohio
N = 73
Brewerton Corner Notched (See plate 6b)

Reference: Ritchie 1961:16

Date: Late Archaic. Associated with the Brewerton and Frontenac Phases in New York (Laurentian Tradition)

Sample Size: 5

Description: This type has been described by Ritchie. His description is quoted here.

"General Description: Broad, thick corner notched points, predominantly of medium size.
Size: Lengths range from about 5/16 to 3 1/8 inches. Majority fall between 1 1/4 and 2 1/4 inches. Thickness about 3/16 to 3/8 of an inch. Majority about 5/16 of an inch.
Proportions: These points are one and one-fourth to one and one-half times as long as wide. The larger examples are about twice as long as wide.
Shape: Blade triangular in outline, biconvex in cross-section; edges slightly excravate, less often straight or rarely incurvate. Stem corner notched, with median to large corner notches forming prominent barbs, and basally expanded. Base straight, slightly convex or rarely slightly concave. About two-thirds have the base ground smooth."

Comments: This point type has quite generalized attributes. In addition, there are many amorphous corner (and side) notched points found in Ohio that may be related to the Brewerton series but are so crude as to make classification impossible. Often their metric attributes fall within the range of Brewerton points (Shane 1967:142). Care must be taken to distinguish such points from "true" Brewerton types.

Distribution: These points appear to be part of a generalized Laurentian culture which was widespread throughout the Upper Ohio Valley. It is particularly well represented in North and Northeastern Ohio (see Laurentian Tradition in text).
Arewerton Eared Notched (See plate 6c)

Reference: Ritchie 1961:17

Date: Late Archaic-Arewerton Phase of the Laurentian Tradition in New York

Sample Size: 9

Description: These points have been described for New York by Ritchie.

His description is quoted here:

"General Description: Generally broad, thick, weakly side notched points, small to medium in size, characterized by a broad base with flanges which often project beyond the edges and, for the most part, have been carefully chipped into small and delicate prominences or "ears".

Size: The length range is from 3/4 to 2 1/2 inches, the majority being between 1 and 1 1/2 inches long. Thickness 3/16 to 5/16 of an inch, with 1/4 of an inch for most examples. Proportions: About one and one-half to two times as long as wide.

Shape: Blade trianguloid or ovoid in outline, biconvex in cross-section; edges prevailingly excursive, less frequently straight. Stem broad, with small side notches and pronounced lateral, carefully chipped "ears". Ears and base, the latter in most instances slightly concave, occasionally straight, are sharp, except in a very few examples where they are ground smooth."

Distribution: Same as for Arewerton Corner Notched
Brewerton Eared Triangle

Reference: Ritchie 1961:18

Site: Late Archaic - Brewerton Phase of the Laurentian Tradition in New York.

No samples.

Description: This type has been described for New York by Ritchie. His description is quoted here:

"General Description: Relatively thin, isosceles triangular points, small to medium in size, distinguished by small, delicately chipped "ears" on either side of the base.

Size: ...length range is 7/8 to 2 1/8 inches, the majority falling between 1 1/16 and 1 1/2 inches.

Propagations: About one and one-half to two times as long as wide.

Shape: Blade trianguloid or ovoid in outline, biconvex in cross-section; edges prevailingly excurvate, occasionally straight. Stemless, base broad and slightly concave or infrequently straight. Very delicately chipped "ears" occur on either side of the base, which in some examples has been rubbed smooth."

Distribution: Same as Brewerton Corner Notched, but more rare."
Brewerton Side Notched (See plate 6a)

Reference: Ritchie 1961:19

Site: Late Archaic. Common on all phases of the Laurentian on New York

Sample Size: 6

Description: This point type has been described by Ritchie for New York;

His description is quoted here:

"General Description: Broad, thick, side notched points, predominantly of medium size.
Size: Length range from about 13/16 to 3 7/8 inches, prevaingly between 1 1/4 and 2 1/2 inches. Thickness about 1/4 to 1/2 inch, 5/16 to 3/8 of an inch for the large majority.

Proportions: These points are one and one-fourth to one and one-half times as long as wide. The larger examples are about twice as long as wide.
Shape: Blade trianguloid in outline, biconvex in cross section; edges slightly excrurvate, straight or rarely incurvate; faintly serrated in rare instances. Stem side notched (occasionally with dual notches) and basally expanded, sometimes to a pronounced degree, resulting in lateral projections or ears. Base straight, slightly convex, or, less often, mildly concave. About two-thirds of all specimens have the base ground smooth."

Comments: Ritchie (Ibid,) feels that this type is probably related to Otter Creek Points (Ibid 40-41), Big Sandy Side Notched (Kuebcrig 1956:25) and to side notched forms from the shell mounds of Kentucky and Tennessee.

Distribution: Same as for Brewerton Corner Notched
Big Sandy Side Notched (Variations are Newton Falls Side Notched, Prufer and Sofsky 1965:23; Otter Creek, Ritchie 1961:40; Osceola, Bell 1953:68, Ritzenthaler 1967:20; Pymatuning Side Notched, Prufer and Sofsky 1965:23; Archaic Side Notched, Converse 1963:19) (See plate ...)

Reference: Knoborg 1956:25, plus the above mentioned.

Date: Big Sandy points were associated with the Three Mile and the Early half of the Big Sandy Components of the Eva Site in Tennessee (Lewis and Lewis 1961:35-37). This period is dated at between 3000-4000 B.C. Otter Creek points are associated with the Vergennes phase of the Laurentian in New York. Ritchie (1969:89) has set a date for this phase of 2500-3500 B.C., based on the similarity of Otter Creek to Osceola and Big Sandy Points. The Osceola point is associated with the Old Copper Culture of Wisconsin which is now dated at approximately 3000-1000 B.C. Ohio specimens are probably of comparable ages.

Sample Size: 20

Description: This is a medium to large spearpoint with an ovate to parallel ovate blade, large side notches and a square stem with sub-concave base which is usually ground smooth. They are thin for their size and well flaked by pressure.

Size: Newton Falls Side Notched range from about 2.5 to 5.5 cm, average about 3.5 cm. Big Sandy points range from 1 3/4 to 3 1/2 inches, average 2 1/2 inches. Otter Creek points range from 2 1/4 to 4 1/2 inches, average 2 3/4 to 3 1/2 inches. Osceola points range from 3 to 10", average 4-6". Archaic Side Notched average 1 1/2 to 2 1/2".
Proportions: Newton Falls Side Notched, Archaic Side Notch and Big Sandy all have length/width ratios of 1/1 - 1.5/1. Otter Creek has a W ratio of approximately 2/1 to 3/1 and Oscoola 3/1 to 4/1.

Shape: Blade: Ovate to parallel-ovate in outline; biconvex in cross-section; symmetrical; primary flaking obscured; secondary flaking varies; is often smooth lamellar, secondary chipping is continuous with bifacial-bilateral placement.

Base: Straight to subconcaive, usually subconcaive; base is thinned by longitudinal flakes and generally ground smooth; base often wider than blade; corners of base squared and ground also.

Haft: Haft notches were the last to be made since they obscure the basal thinning scars. They were generally made by single bifacial removals. Notches square or rounded in shape, often ground; shoulders are square.

Comments: The Big Sandy, Archaic Side Notch and Newton Falls types are considerably smaller and have a shorter width/length ratio than Oscoola or Otter Creek. The smaller examples resemble Brewerton Side Notched except for the incurvate base. Broyles (n.d. b) has said "this projectile point is very difficult to separate from the later Armstrong Side Notched points found on Middle Woodland sites in West Virginia, and the Middle Woodland Raccoon Notched points from Pennsylvania (Mayer-Oakes 1955:87)."

Distribution: These points are common in Ohio. They are also found in Tennessee, Kentucky, Alabama, Wisconsin, Illinois, Missouri, New York and Vermont.
Cypress Creek I and II (See plate 7a)


Date: Middle to Late Archaic; Cypress Creek I is associated with the early levels of the Eva site in Tennessee (Eva Component). The smaller Cypress Creek II points are associated with the Three Mile Component at the Eva Site (Ibid.), approx. 5200 ± 500 B. C. (sample # M-357)

Sample Size: 21

General Description: An expanded stem, corner notched point with long barbs and a fairly straight, ungrouned base.

Size: No sizes are given for the specimens from Eva. Cypress Creek II points found at the Mixter site (Shane 1967:132-3) measured 50 and 53 mm in length. Cypress Creek I points are at least twice this size.

Proportions: L/W ratio varies from 2/1 or slightly greater to 1/1.

Shape: Blade: Triangular, ovate or parallel ovate in shape; biconvex to plano convex in transverse section and in longitudinal section. The blade is generally symmetrical. Primary flake scars are massive and deep. They are generally of expanding type and are bifacial. Almost unifacial points on flakes were found at the Mixter site (Ibid.). Secondary chip scars are generally abrupt, conchoidal or expanding scars that occur as continuous or fortuitous scar clusters on both sides and both faces of the blade. The edge may be even or finely serrated.

Base: The base may be straight or subconvex. It is thinned, but not ground. Primary thinning flakes are longitudinal and bifacial. There is almost no secondary retouching.
Haft: Diagonal notches were made by one large and several small bifacial blows or one blow on one face and several smaller blows on the opposite face. Basal thinning was accomplished last since haft scars are obscured by basally originating scars. Barbs are acute, with blunt, rounded tips in the Cypress Creek I type and more sharply pointed tips in the Cypress Creek II type. Notches are U shaped and the corners of the base may be sharply pointed or rounded. They are always acute and the base is never as wide as the barbs. The barbs are not generally long enough to intersect the plane of the base.

Comments: Small specimens, especially if the barbs and corners of the base are broken may be very difficult to tell from Breverton Corner Notched.

Distribution: Do not appear to be common in Ohio. The author has seen photographs of what appear to be Cypress Creek points from the following counties: Erie, Columbiana, Auglaize, Paulding, Darke, Miami, Clinton, Vinton, Athens, Perry, Muskingum and Tuscarawas. Three points were observed in private collections in Defiance, Ohio. They were collected locally. Five points of this type are reported from the Hocking site in Erie Country, Ohio (Shane 1967:133). A survey of the Hocking Valley recovered one of these points from Athens County, Ohio (Shane and Murphey 1967:347).
Decatur (Fractured Base) (See plate 4c)

References: Bell 1960:28; Converse 1963:94

Date: Middle-Late Archaic? 5000-1000 B.C. has been suggested by Bell.

Sample Size: 2

General Description: Triangular to ovate bladed point with small corner notches producing a short, expanded stem and slightly barbed shoulders. The blade may occasionally be beveled or serrated. The base is notched in the center and blunted by double, lateral-medial burin blows extending from the proximal point of juncture of the haft element with the base element, across the base element and terminating at the notch. The base may also be heavily ground.

Size: "One inch pieces to large spears" (Converse Ibid.).

Proportions: Variable, but stem is always very short in relation to blade length. Blade length/stem length = 4/1 - 10/1; L/W = 1/1 - 2/1.

Shape: Blade: Triangular, ovate or slightly incurvate in form; biconvex in transverse section and excurvate in longitudinal section. The primary flake scars are massive, deep and of expanding type. Secondary scars of smooth lamellar type are generally continuous on one or both sides of the blade. They may also occur as patterned or fortuitous scar clusters.

Base: Subconcave; thinned by longitudinal bifacial primary scars with little secondary retouch visible. A small notch was made in the center of the base and a lateral-medial burin struck off from each corner of the base, meeting at the notch. Bases were sometimes further worked by being heavily ground, even to the point of obliterating the burination of the base.
Haft Element: Small corner notches were produced by single bifacial blows. They are generally obscured by basally originating scars. The sides of the stem may also be ground. The shoulder is straight to slightly barbed.

Comment: Ohio Decatur points rarely exhibit beveling or serration on the blade, and the shape of the blade varies more than in the classic Decatur. All are very well made and standardized.

Distribution: Examples of these points have been seen from Defiance, Paulding, Huron, Auglaize, Carroll, Miami, Clinton, Pickaway and Washington Counties, Ohio. They appear to be widespread in the state, although Converse (Ibid.) says that they are extremely scarce. Outside the state, they occur in Middle Archaic sites along the Tennessee River in Tennessee and also in North Carolina and Georgia (Bell Ibid.).
Dovetail (St. Charles point) (See plate 4d)

Reference: Bell 1960:82; Converse 1963:112

Date: Late Archaic to Middle Woodland? Bell (Ibid,) assigns a date to this type of 2000 B.C. to 1 A.D. A beautiful Dovetail about 13.5 cm in length with a notched base was recovered from the bottom of Stratum II (bottom of the Three Mile Component) at the Eva site in Tennessee (Lewis and Lewis 1961:45-46). This phase is believed to have begun about 3500 B.C. Most collectors in Ohio believe these points to be Adena or Hopewell products although, as Converse points out, they have never been excavated from a burial mound (Converse Ibid.). A very late Archaic or Woodland placement for these points is also indicated by the fact that the vast majority of them are chipped from Flint Ridge flint, which was very little used during the Archaic (personal observation).

Sample size: 11 (2 are of the second variety)

General description: Very large, but thin and well worked spearpoints. They come in two varieties. Variety one has a right angled or backed shoulder and a large, fan-shaped or semi-circular stem. Variety two has either a right angled shoulder or a diagonal notched barbed shoulder. The tail of this variety is slightly more flattened and has a small notch taken out of the center of the base. The blade of this form may be slightly serrated and/or beveled. If beveled, it appears very similar to a type 3 bevel.

Size: Range from 2" to 8 or 9" in length (Converse Ibid.)

Proportions: L/W ratio 2.5/1 to 4/1 or more.
Shape: Blade: Ovate in shape; biconvex or asymmetrically biconvex in longitudinal and transverse section; symmetrical; Primary flake scars are massive, deep, bifacial and expanding. Usually they are almost obliterated by the smooth lamellar secondary scars that are continuous on both sides of both faces of the blade. The edge of the blade may be even or serrated and nibbling wear is present along the blade edges of some specimens.

Base: Convex or trivectorial (when notched); the base is thinned and ground smooth. Thinning scars are both transverse and longitudinal on both faces of the base. Secondary retouch scars are discontinuous and bifacial. The hafting notches were usually made at the widest part of the blade creating a sharp right angled shoulder or an acute angled barb. Notches are generally deep and U shaped. The edges of the base are sharply pointed. Haft element scars sometimes obscure laterally and basally originating scars, indicating that, in this case, they were the last part of the manufacturing process. In many cases, however, this is not true.

Distribution: Are found throughout most of Ohio but are nowhere common. (Converse Ibid.) Bell says (Ibid) "The type is fairly widely distributed although it is most common throughout the Ohio Valley and westward into Missouri. It is also found in the surrounding states such as Pennsylvania, West Virginia, Kentucky, Michigan, Wisconsin, Iowa, Arkansas, Kentucky, Tennessee, etc."
FIGURE 7
Distribution of Dovetail Points in Ohio
N = 43
Genesee

Reference: Ritchie 1961:24-5

Date: Late Archaic. Dated between 2980 and 1723 B.C. in New York.

No Sample:

General Description: This type has been described for New York by Ritchie. His description is quoted here.

"Large, thick, straight stemmed points, of medium breadth. Size: Length range is from approximately 1 1/2 to 6 inches; the majority falling between 3 and 3 1/2 inches. Specimens longer than 6 inches occasionally occur or are indicated by broken basal sections. Thickness varies from about 5/16 to 9/16 of an inch, with most points measuring between 3/8 and 7/16 of an inch. Proportions: Typically about 2 to 2 1/2 times as long as wide. Shape: Blade trianguloid in outline, markedly biconvex in cross-section; edges straight or slightly excurvate. Stem rectangular and straight or parallel sided. Shoulders weakly to moderately developed, with straight or slightly oblique basal edge. Base straight. About 40% show some slight grinding of base and sides of stem."

Comments: Genesee points in Ohio run somewhat smaller than the New York types.

Distribution: Same as for Brevortton Corner Notched, but not as common.
Kanawha Stemmed (See plate 11b)

Reference: Broyles 1966, n.d. a, b

Date: Early Archaic, dated 6210 \pm 100 B.C. (no sample # available) at the St. Albans site in West Virginia.

Sample Size: 88

General Description: Small point with an incurvate blade and a short, indented or bilobed stem. Four Kanawha points observed showed lateral-medial burin facets on one shoulder, eleven had proximal-distal burins on one or both sides of the stem and three had both shoulder and stem burination.

Size: Length ranges from 1.9 to 4.8 cm. Average between 3.0 and 3.6 cm. Thickness is .3 to .7 cm.

Proportions: L/W ratio about 3/2 to 1/1

Shape: Blade: Straight to incurvate in outline; biconvex in transverse and longitudinal section. May be slightly asymmetrical. The bifacial primary flaking is largely obscured by continuous secondary scars of smooth lamellar type. The edges of many points are serrated. Many show signs of re-sharpening.

Base: Concave and thinned by small longitudinal scars but not ground

Haft: Shoulders are straight or slightly barbed. The stem expands and has rounded corners or lobes. Stem width is 1/2 or less of the width of the blade. The haft scars are obscured by the basal thinning scars.

Distribution: Found throughout Ohio but seems to be concentrated in the Southern part of the state (See map). Also found in the Kanawha River.
basin in West Virginia, North Carolina, Tennessee, Pennsylvania and possibly, Michigan (Broyles 1966, n.d., a, b)
FIGURE 8
Distribution of Kanawha Stemmed Points in Ohio
N = 88
Kirk Corner Notched (See plate 3a)

Reference: Broyles 1966, n.d., a, b; Coe 1964:69-70

Date: Early Archaic, about 6900 B. C. based on dates from the St. Albans site in West Virginia (Broyles 1966, n.d., a)

Sample size: 11

General Description: These points have been described for West Virginia by Bettye Broyles. Her description is quoted here.

"Large triangular blade with a straight or concave base, corner notches and serrated edges.
Size: Length 37-82 mm, but more often 50 to 60 mm; width 24-38 mm; thickness, 4-8 mm.
Form: Blade is triangular, usually with a straight edge, although a few are excurvate or incurvate. Faces were covered with large random flakes, while the edges were thinned with many long, narrow flakes (about 3-5 mm wide and 6-9 mm long) giving the blade a flat face with no hint of a median ridge. Edges are deeply serrated on most specimens (serrations average 2 mm wide by 3 mm deep) and a few are beveled. Shoulders are well defined, many are straight, but most have barbs projecting toward the base forming a notch 10-14 mm wide by 10-12 mm deep. Tip or distal ends are acute and some off center.

The base is straight or concave, seldom convex, and many have been slightly ground or smoothed. Bases were thinned by removal of several small flakes. The stem on many of the specimens, especially those with concave bases, are almost as wide or wider than the blade. Tangs on most of the bases are rounded, but many are acute, especially on some of the specimens with flat bases."

There is also a small variety of the Kirk Corner Notched Point (Broyles 1966, n.d., a). It is slightly older than the large variety and identical, except that it never has a concave base. The base is always straight or slightly excurvate. It is similar to Palmer Corner Notched (Coe 1964:67, 69) but lacks the basal grinding.
Distribution: A few of these points have been seen by the author in the collections of the Ohio Historical Society, but their distribution in Ohio remains largely unknown. In West Virginia, they are known from the St. Albans site and from numerous of small surface sites and unexcavated stratified sites in West Virginia (Broyles n.d. b). They are also known from the Allegheny drainage of Pennsylvania and from the Barrett, Butterfield and Roach Sites in Kentucky (Ibid.). They were first defined by Coe (1964) for the Carolina Piedmont area.
FIGURE 9—
Distribution of Kirk Corner Notched Points in Ohio
N = 64
Kirk Serrated (See plate 3b)

References: Bell 1960:62; Broyles n.d. a, b; Coe 1964:70

Date: Early Archaic approx. 6900 B.C. at the St. Albans site in West Virginia.

Sample Size: 37

General description: Large, straight to slightly contracting stemmed points with a serrated blade. The base is thinned, often by a short flute, but not ground.

Size: 3.8 to 12 cm in length, averaging about 7 cm. Width 2.3 to 3.5 cm, averaging about 3 cm. Thickness .4 to 1.2 cm.

Proportions: L/W ratio is approximately 2/1 to 3/1

Shape: Blade: Triangular or slightly incurvate in shape; asymmetrically biconvex to biconvex in transverse and longitudinal section; symmetrical. Primary flake scars are obscured by continuous bifacial bilateral secondary scars that are of smooth lamellar type. These produce deeply serrated edges. Blades often show nibbling wear along the sides.

Base: Straight to concave, with the original striking platform still showing. Base is thinned by longitudinal scars which often make a short flute but it is never ground. The basal thinning scars obscure the haft element scars.

Haft: The shoulder is squared or slightly barbed and the stem parallel or slightly converging.

Distribution: Found throughout most of Ohio. Also found in North Carolina, Tennessee, Kentucky, West Virginia and adjacent areas.

(Broyles n.d. b)
FIGURE 10
Distribution of Kirk Serrated Points in Ohio
N = 69
Kirk Unserrated Stemmed (See plate 3c)

Reference: Smith 1957. New type

Date: Early Archaic?

Sample Size: 53

General Description: This point type resembles the classic Kirk Serrated in shape, size, thickness and manufacturing technique, but it lacks the serrated blade and may often exhibit some basal grinding. It was recognized, but not named by Arthur George Smith (1957). He believed it to be a derivative of the earlier Paleo-Indian fluted points. As in the Kirk point, the concave base is often thinned by a short flute. The shoulder is squared and the stem straight to slightly contracting. The base and sides of the stem are often ground. The blade may be excursive, straight or slightly incurvate. Many show hard use and have been resharpened.

For detailed description see Kirk Serrated.

Distribution: Smith (Ibid.) states "I have found the type from central Georgia, to the shores of Lake Erie and I have seen one specimen that was dredged up from 20' of water off Long Island. West of the Appalachians it is found sporadically." These points have also been recovered from the upper levels of the Quad site in Alabama (Soday 1954).
FIGURE 11
Distribution of Kirk Unserrated Stemmed Points in Ohio
N = 100
Lake Erie Bifurcate Base (See plate 10b)

Reference: Prufer and Sofsky 1965:31-32

Date: Prufer and Sofsky place this type in the Laurentian tradition in Ohio (ca. 2500-2000 B.C.). Its similarity to the LeCroy point as defined by Broyles (n.d. a) leads this author to believe that it is in actuality an Early Archaic form. LeCroy points have been radiocarbon dated at 6300 ± 100 B.C. (no sample # available) at the St. Albans site in West Virginia (Broyles n.d. a).

Sample size: 131

General Description: The size, flaking techniques, distribution etc. of this type in Ohio have been found to be identical to those of the LeCroy point. The only distinguishing features of this type as defined by Prufer and Sofsky (Ibid.) are burin blows along the outside of the stem and/or on the shoulders of the point. These apparently took the place of grinding in dulling the haft of the point. My research has shown, however, that such burin blows are not confined to Lake Erie Bifurcate Base points. They also occur, although in lesser frequency, in the Early Archaic St. Albans, MacCorkle and Kanawah points found in Ohio as well as in the so-called Fractured-Base points (Converse 1963: 94). Burin blows seem to have been a technique of manufacture in Ohio, and not a diagnostic characteristic of any one point. It is possible that Lake Erie Bifurcate Base points form one population with LeCroy points.

For further information, see LeCroy Points.
Lamoka-Dustin (See plate 6:)


Date: Late Archaic to Middle Woodland. The primary association of this point type in New York is with the Laurentian tradition where it has been C14 dated at 3500-2500 B.C. In the Ohio Valley, it occurs with late Laurentian complexes (ca. 2000 B.C.) (Dragoo 1959:238). The Dustin variant of Michigan is undated at present. There is apparently a Late Woodland point that is very similar to the Lamoka type (Converse 1963:116). These points have been surface collected from Woodland sites in Michigan (Shane 1967:139) and were excavated from the Late Woodland levels of Peters Cave in Ross County, Ohio (Prufer and McKenzie 1966).

Sample size: 21

General Description: Those points have been defined for New York by Ritchie. His description is quoted here.

"Small, narrow, thick points with weak to moderately pronounced side notches, or straight stemmed with slight, usually sloping shoulders.

Size: The length ranged from less than 1" to about 2 1/2". The majority fall between 1 1/2 and 1 3/4" in length and measure about 1/4" in maximum thickness. There are a few longer points, believed to be spearheads, which range up to 5 3/8" in length.

Proportions: Two to three times as long as wide.

Shape: Blade trianguloid in outline, biconvex or median ridged in cross-section; edges straight or slightly excursive. Stem straight and of moderate length or side notched. Base straight, oblique, or slightly convex, usually unworked and thick as blade, often exhibiting broad, unmodified surface of flake or pebble from which the point was made. The thick, unfinished condition of the base is a prime diagnostic feature of the Lamoka point wherever found." (Ritchie Ibid.)
Comments: Lamoka points in Ohio frequently show a ground base and lateral edges. (Pruefer and Sofsky 1965:30). This is not a characteristic of the New York type. Points resembling Normanskill points (Ritchie 1961:37) are also found in Ohio. Since this point is believed by Ritchie to be highly localized in eastern New York, it is possible that the Ohio point type is more closely related to the Durst point of Wisconsin (Ritzenthaler Ibid.)

Distribution: Widespread throughout the Northeast, including New York, Pennsylvania, Ohio, Michigan, etc.
A Note on Burinated Projectile Points in Ohio

At the suggestion of Dr. Raymond Baby of the Ohio Historical Society, research was begun by Major Charles McCollough of the Ohio State University and later by the author on a substantial number of burin-faceted projectile points from Ohio. The artifacts used in the study formed part of the typological collections of the Ohio Historical Society. (For the extent of these collections, see Table 3.) This note and the following note on the classification of LoCroy points are the preliminary results of that research.

The situation in Ohio appears to be the reverse of that revealed by Epstein for Texas (1963). He found burin blows to be common on Paleo-Indian materials (25%) but rare in the Archaic (1% - 4% based on 2 sites). Burin facets have not been reported for Paleo-Indian materials in Ohio, but they occur with varying frequencies in several Archaic point types, especially those with bifurcated bases. The existence of burin facets on Decatur or fractured base points and on Lake Erie Bifurcato Base points from the state had been previously recognized (Converse 1963:94; Prufer and Sofsky 1965:31-2) but, the types of burination and the extent of its usage had never been determined.

On the Archaic points examined, burins were always located on the proximal (base) end and/or shoulder of the artifact. All appear to be burins on a retouched edge. Those on the shoulder were lateral-medial, originating at the lateral point of the haft element and traveling toward the medial point of the haft element. Both lateral-medial and proximal-distal burin facets originated from the proximal point of the haft.
element. Lateral-medial burins traveled across the base element of the point toward the midline. Some traveled partway, others all the way across the base element.

On point types such as Decatur there are usually double lateral-medial burins, one originating from each proximal point of juncture of the base and haft elements. Proximal-distal facets originate at the proximal point of juncture of the haft element and travel distally up the tang or stem, usually to the medial point of the haft element. If a lateral-medial facet is present on the shoulder of the same piece, the two facets may meet at the medial point. This occurs frequently on Lake Erie Bifurcate Base (LeCroy?) points.

The burin facets themselves are single, rarely exhibiting resharpening facets. The surface of the facet may deflect either to the right or left, but generally right. The negative bulb of percussion has been retouched away and none show any evidence of tertiary retouch by wear. Apparently they were not intended for use as "true" burins (i.e., engraving or cutting tools). The hypothesis is advanced here that the burination on the base and shoulders of these points was a technique of manufacture, used to straighten and blunt the edges of the tang prior to hafting. On point types having a relatively straight base or stem, this technique would produce much the same results as the more laborious method of grinding.

The point type showing the highest frequency of burination is Lake Erie Bifurcate Base. Lateral-medial burination of the shoulder and proximal-distal burination of the stems are the defining characteristics of this type (Prufer and Sofsky 1965:31-32), and the only attributes that
set it apart from the LeCroy points as defined by Brues (1964; n.d. a).
A study of 250 LeCroy-type points revealed 131 that could be classified
as Lake Erie Bifurcate Base. Their distribution is shown on the enclosed
map. The burin facets were as follows:

Lateral-medial on one shoulder - 27 single, none restruck.
Lateral-medial on both shoulders - 17 single, none restruck on both
shoulders, 5 restruck on one shoulder

Proximal-distal on one side of stem - 12 single, none restruck
Proximal-distal on both sides of stem - 35 single, 6 restruck on one
side of them

1 P-D on stem, 1 L-M on opposite shoulder - 2 single, 1 restruck on stem
1 P-D on stem, 1 L-M on same side shoulder - 5 single, none restruck
1 P-D on stem, 2 L-M on shoulder - 5 single, none restruck
2 P-D on stem, 1 L-M on shoulder - 8 single, 3 restruck
2 P-D on stem, 2 L-M on shoulder - 4 single, 1 twice restruck on the stem

Bifurcated base points of the Kanawha, St. Albans and MacCorkle
types also exhibit burin facets, but in much lower frequency than the
LeCroy points. Samples of these points equal to or larger than the
LeCroy sample were analyzed and revealed the following types of burin
facets:

L-M on one shoulder - 4 Kanawha, 5 MacCorkle, 7 St. Albans
L-M on both shoulders - 3 St. Albans
P-D on 1 side of stem - 2 Kanawha, 5 St. Albans
P-D on both sides of the stem - 9 Kanawha
F-D on 1 side stem, M-L on 1 shoulder - 1 St. Albans
F-D on one side stem, M-L on opposite shoulder - 1 Kanawha
2 F-D on stem, M-L on 1 shoulder - 2 Kanawha

Other types of burin-faceted projectile points found in Ohio include the Decatur point, which is characterized by double lateral-medial burins struck from both sides of the base and various, as yet unclassified, straight and expanded stemmed points. The latter types generally exhibit single or double lateral-medial burins on the base that are frequently ground smooth. Their distributions and cultural associations are unknown at the present.
FIGURE 12—
Distribution of Lake Erie Bifurcate Base
Points in Ohio
N = 120
A Note on the Classification of LoCroy Point:

It is my belief that the point type known in Ohio as LoCroy can be broken down into at least three types. Lack of differentiation has caused much confusion in the classification of bifurcate-based points. The LoCroy type was originally defined by Madeline Maley (1955, 1956) based on a collection of points from the LoCroy site and other sites in Hamilton County, Tennessee. At the time, she stated (1955:81) "The cultural association of this type of point is still an enigma. It has a wide geographic distribution in the Eastern United States..." A year later, in the first formal description of the type, she placed it in the Archaic or Early Woodland period (1956:27-28).

Recent excavations by Bettye Broyles at the St. Albans site in West Virginia have served to clarify the position and classification of this type (Broyles 1964, 1966, n.d. a, b; Broyles and Olinger n.d.). The original LoCroy points included both a stemmed form and a very weakly side-notched form. Bettye Broyles has restricted the term LoCroy to the stemmed form. This form has been found in zones 6 and 8 of the St. Albans site. A hearth located in the layer between these two zones was C14 dated at 6300 ± 100 B.C. (no sample # available).

The side notched form has been named St. Albans, varieties A and B (Broyles n.d. a). Charcoal from hearths in zones 12 and 13 of St. Albans, where these forms occur, has been C14 dated at 6880 B.C. ± 700 and 6870 B.C. ± 500 (no sample # available). Stratigraphically, the form is older than LoCroy. The Carbon 14 dates tend to support this.
The term most commonly called LeCroy in Ohio is an actuality. Albans. I have decided to follow Betsy LeRoy because her data appear to be the best controlled and her definitions the most comprehensive yet observed for this type.

LeCroy points have also been described by Bell (1960:64), but a definition has been derived from the original Knoborg article and includes both LeCroy and St. Albans points. In addition, he dates them as Late Archaic giving a range of 1500 B.C. to 500 A.D. Many authorities, notably Prufer and Sofsky (1965:31-2) and Fitting (1964:92-3) have followed Bell and Knoborg. Prufer and Sofsky recognized that there were many point types in the eastern United States being called LeCroy that were not LeCroy. The also recognized a type, virtually identical, save for one characteristic, to the “true” LeCroy that was widespread in northern Ohio, Indiana and Michigan. In order to call attention to the observed differences, but yet avoid any suggestion of cultural connections with Tommosco or Alabama, they named a new point type, Lake Erie Bifurcato Base. This point falls entirely within the range of the LeCroy point as defined by Broyles with the exception of one attribute—it frequently exhibits proximal-distal burin facets on both sides of the stem and/or lateral-medial facets on the shoulders. Such fractures were not noted by Broyles for her LeCroy points, but they are fairly common on several types of bifurcato based points in Ohio. A statistical study of the two types is presently underway but only secure dates and the excavation of stratified sites can determine with certainty if LeCroy and Lake Erie Bifurcato Base point represent one or two populations.
According to Prufer, Lake Erie Bifurcate Base points have been found at the Raisch Smith site in Probol County, Ohio (Long 1962:62 fig. 3), the McKeebbon site in Trumbull County, Ohio (Prufer and Sofsky 1965:11-12), the Mixter site, Erie County, Ohio (Shane 1967:38), however, none of these points displayed the characteristic fracturing of the base shoulders. Prufer places these points in the Laurentian tradition on the basis of a date of 3352 ± 90 B. C. (sample # Y-1598) from the lowest level of the Rohr Rock Shelter (Dragoo 1959), where a few of this type were found and a statement by Fitting (1964:94) that "Examples have been found in a context indicating Late Archaic to Early Woodland associations in West Virginia, Michigan and Illinois" but that they might be earlier. There is some reason to question the date from the Rohr Shelter. Bettye Broyles (n.d. a) is aware of the date, but states that Dragoo "believes this date is too late due to possible contamination of the sample by rootlets." In addition, a large variant of the LeCroy was recovered from stratum 4 of the Eva site (Lewis and Lewis 1961:43, 173) and has been C14 dated at 5200 B. C. ± 500 years (sample #M-357), a thousand years later than the St. Albans date, but 2000 years earlier than the Rohr date. In the article by Fitting, alluded to earlier (1964:92-94), it was suggested that bifurcate base points may constitute a horizon marker in the eastern United States. The distribution of the LeCroy point would make it a good candidate for this position. It is documented for Ohio, Indiana, Illinois, Michigan, Tennessee, Alabama, West Virginia, New York, Kentucky, Pennsylvania and North Carolina (Broyles, n.d. a, b). It remains to be demonstrated that the type was contemporaneous in these areas.
Fitting also suggested the possibility of two forms or varieties of LeCroy, a larger form, Archaic in age and possibly earlier than 5000 B.C., and a smaller form, Early Woodland in age. From his photographs it appears that Fitting's large variant is a St. Albans type. His smaller variant is another type which I have tentatively named Ohio Bifurcato Base. It appears similar to LeCroy but has a slightly expanded base with a shallower bifurcation and a stem length to blade length ratio of 1/6 to 1/3 compared to 1/1 or 1/2 for LeCroy. Its chronological position and cultural associations are unknown.
LeCroy Bifurcato Base (See Plate 10a)

Reference: Broyles n.d., a, b, c; Bell 1960:64

Date: Early Archaic 6300 B.C. at the St. Albans site in West Virginia (Broyles Ibid.)

Sample size: 119

General Description: A small-thin, stemmed point with a deeply bifurcated base.

Size: Length ranges from 1.6 cm to 3.7 cm. Most are between 2.5 and 3.5 cm. Greatest width (shoulder) ranges from 1.25 cm to 3.0 cm. Most are between 2.2 and 2.7 cm.

Proportions: L/W ratio approximates 1/1 to 2/1.

Shape: Blade: The blade is triangular to slightly incurvate in outline, biconvex to plano-convex in transverse section and generally biconvex in longitudinal section; an attempt was made at symmetry. These points were made on very thin flakes and often the unmodified surface of the flake blank remains on one or both sides of the finished artifact. Both faces of the blade are covered with smooth lamellar primary and secondary flakes. Secondary sears occur only as fortuitous clusters. Some have been resharpened. Most are serrated.

Base: The base was deeply bifurcated by single bifacial blows. It was retouched as needed but not ground. Bifurcations are usually .4 to .6 cm in depth, often completely dividing the stem, and are U shaped.

Stem: The stem has parallel or slightly expanding sides. Shoulders are square, and almost never barbed, although in some cases they may be
absent. The stem is never ground, although, at least in Ohio specimens, it (and also the shoulders) was frequently blunted by burin blows. These points with burin blows may also be classified as Lake Erie Bifaces.

For comments and distribution see the foregoing discussion.
FIGURE 13—
Distribution of LeCroy
Points in Ohio

N = 225
Pickwick Basin types 7 and 13 (See plate 13 a and b)

Reference: Webb 1949:8-9

Date: Late Archaic-Early Woodland. Are common in the upper levels of Alabama shellmounds where they occur in both pre-pottery and pottery levels. They are most common, however, in the late pre-pottery levels. Probably date between 2000-1000 B.C. (Webb 1949:92-129, 41-3, 52-92, 178-208, 235-265; Webb and De Jarnette 1948:35-6, 45, 69-70).

Sample size: 7

General Description: Large, broad bladed points with deeply barbed to almost square shoulders and a parallel sided square stem. The stem is narrow in relation to the width of the blade.

Size: A sample of 7 points ranged in length from 5.35 to 8.0 cm. Four were between 7 and 8 cm and one was broken. Shoulder width ranged from 3.2 to 4.6 cm, thickness from .7 to 1.35 cm.

Proportions: L/W ratio is about 2/1.

Shape: Blade: The blade is ovate in outline and biconvex in transverse and longitudinal section. The type 7 blade is symmetrical, the type 13 blade asymmetrical. Primary scars are massive, deep, expanding and bifacial. Secondary chip scars are of the smooth or stopped lanollar types and are continuous on both sides of both edges of the blade.

Nabbling wear from use is present on some examples.

Base: Type 7 has a longitudinally thinned, straight to subconvex base that is generally unground. The base of the type 13 point may be either ground or fractured. In many cases it is oblique to the long axis of the stem. In either type the sides of the stem may be lightly ground.
Haft: Notching scars obscure the laterally and basally originating scars, indicating that they were the last to be made. Shoulders were deeply barbed on the type 7 point. On the type 13 point they are asymmetrical. Often one is square and the other barbed.

Comment: Webb has said that these two types, as well as his types 18 and 27 "are very similar and might well have been regarded by their makers as of the same form" (Webb 1949:193).

Distribution: Only a few occurrences of this point are definitely known for Ohio at the present. Seven were recovered from the Davis Mound in Franklin County, Ohio (Baby-Field Notes) and a cache of 9 was found in Warren County, Ohio (Kolezar, personal communication). They are also known from the Raisch-Smith site in Probable County (see text). They are common in the Late Archaic shellmounds of Alabama (Webb Ibid. above).
MacCorkle Stemmed (See plate 12 b, c)

Reference: Broyles n.d. a

Date: Early Archaic 6900-6800 B.C. at the St. Albans site in West Virginia.

Sample Size: 134

General Description: A medium sized point with a serrated blade and a bilobed base that is often ground smooth.

Size: Length ranged from 3.0 to 10.0 cm. These appear to be separable into a small group about 3-5 cm in length and a larger group 5.0-10 cm in length. The thickness of the two types shows a clearly bimodal distribution.

Proportions: L/W ratio averages 3/1 to 1/1.

Shape: Blade: Triangular to ovate in outline; biconvex in transverse and longitudinal section. The blade is generally symmetrical. Primary scars are massive, flat bifacial and expanding. Smooth lamellar secondary scars are continuous on both faces and both sides of the blade. The edge may be even or serrated.

Base: Deeply concave producing two lobes and ground smooth. Thinning was accomplished by removing one large flake from one side and several small flakes from the other. The base on three or four points had been facetted by lateral-medial burins and then ground smooth.

Haft: The shoulder may be right angled, slightly barbed or facetted by lateral-medial burins (5 examples). The stem expands to form two large, rounded lobes. It is ground up to the shoulder. Maximum width is at the shoulder.
Comment: Bettye Broyles believes this type to be transitional between Kirk and St. Albans points. It appears to be the same type that McKenzie has called Drake Indented Base (McKenzie 1968:38-9).

Distribution: Found throughout Ohio and into West Virginia (Ibid, Map),
FIGURE 14——
Distribution of MacCorkle
Points in Ohio
N = 248
McWhinney Heavy Stommed (see plate 7 b,c)

Reference: Heilman 1970

Date: Archaic

Sample Size: 5

General Description: This is a new point type first defined by Heilman based on his findings at the McWhinney Village site in Preble County, Ohio. The description given here is based upon his data. These are thick (1 cm+) crudely stommed points of medium size. Their most distinguishing characteristics are the thick cross-section with a large medial ridge running down one face of the point and the frequent retention of the cortex of the short flake or nodule from which they were manufactured at the base of the stem.

Blade: Excurvate or ovate in outline. In transverse section they are asymmetrically biconvex or convexo-triangular. In longitudinal section they are asymmetrically biconvex. Primary chipping is bifacial and conchoidal. Secondary chipping is the same but occurs sporadically. Some blades have the appearance of serration, but this is probably the result of the crudeness of the point and the poor material used.

Base: Straight to subconvex with "attempted basal thinning." The base is never ground but often has remnants of the cortex of the flake or nodule from which the point was manufactured.

Haft: The shoulders may be squared or rounded. Usually they are very slight and it is difficult to determine where they begin or end. The stem is straight to slightly expanding. Haft element juncture is laterial-
basal. There is no grinding on the haft element. Shoulders are often asymmetrical.

Size: 5.0-6.0 cm is usual. Width generally 2.0-2.5 cm.

Proportions: L/W ratio approximately 3/1

Distribution: Unknown in Ohio outside the McWhinney and Raisch-Smith sites in Probsto Country and a nearby site known as 12 Wy 97 in Wayne County, Indiana.
Ohio Bifurcate Base (See plate 12 a)

Reference: New Type

Date: Archaic

Sample Size: 82

General Description: Small, triangular bladed point with an expanding bifurcated stem.

Size: Length ranges from 2.1 to 4.9 cm, most fall between 3.4 and 3.8 cm in length. Width ranges from 1.6 to 2.5 cm. Thickness .45 to .70 cm.

Proportions: L/W ratio between 1.5/1 and 2/1, Blade length to stem length ratio varies from 6/1 to 3/1 most being from 3/1-4/1.

Shape: Blade: Blade is triangular to ovate in outline, asymmetrically biconvex in transverse and longitudinal section; symmetrical. Primary flake scars are obscured by continuous bifacial, secondary chipping of the smooth lamellar type. A few of the blades are serrated (11 out of a sample of 81), the rest are ovon.

Base: The base is deeply concavo or bifurcated and thinned by bifacial longitudinal flakes. Secondary flakes occur as fortuitous scar clusters.

There is no grinding on the base, and no burination.

Haft: Shoulder is straight or slightly barbed. Stem expands. Haft element scars obscure laterally and basally originating scars. Light grinding of the haft occurs on only one specimen.

Comments: Fitting (1964:92-3) has called this point a LoCroy. It differs from the LoCroy in having a narrower stem in relation to blade with and a blade length/stem length ratio of 3/1 to 4/1 against 1/1 to 2/1 for LoCroy.
Distribution: Central Ohio (see map) and into Michigan (Ibid.)

Further distribution unknown.
FIGURE 15—
Distribution of Ohio Bifurcate Base Points in Ohio
N = 70
St. Albans Side Notched (See plate 10 c)

Reference: Broyles 1966, a.d. a

Date: Early Archaic. Radiocarbon dated at 6880 B. C. ± 700 (no sample # available) years at the St. Albans site in West Virginia.

Sample Size: approx. 150

General Description: A small, thin, serrated point with a U shaped, bifurcate base and very weak side notches.

Size: Length ranges from 2.8 to 6.0 cm, blade width ranges from 1.4 to 2.8 cm, thickness from .4 to .7 cm.

Proportions: L/W ratio approximately 2/1 to 3/1

Shape: Blade: Triangular to ovate in shape; biconvex in transverse and longitudinal section; tip may be off center. Point is made on a very thin flake. Primary scars are lamellar and are continuous on both sides of both faces of the blade. Secondary chipping occurs only as fortuitous scar clusters. Variety A is usually serrated, variety B is almost never serrated. Resharpening is present on some points.

Base: Deeply concave and thinned by transverse and longitudinal scars. Variety A tends to have a deeper bifurcation resulting in a more bicolobated base that is lightly ground up to the shoulder. Variety B's base is unground.

Haft: Shoulder is small (sometimes about same size as serrations) and straight. Tang expands proximally and haft element scars obscure lateral and basally originating scars. Seven points observed had lateral-medial burin facets on one shoulder, three had them on both shoulders. Five
had proximal-distal facets on one side of the stem and one had a proximal-distal facet on one side of the stem and a lateral-medial facet on the opposite shoulder.

Comment: Varieties A and B are almost impossible to separate from surface collections. They are stratigraphically separated at the St. Albans site where A occurs in zone 12 and B in zone 11 (later). In Ohio, St. Albans points are often called LoCroy points.

Distribution: For Ohio see map. Also Boone Co., West Virginia (Broyles Ibid.).
FIGURE 16——
Distribution of St. Albans
Points in Ohio
N = 198
Stoubonville Lanceolate

References: Mayor-Oakes 1955:140; Ritchie 1961:50

Date: Late Archaic (Dragoo 1958:210)

No Sample

General Description: This type has been described by Ritchie (Ibid.). His description is quoted here.

"Rather broad, lanceolate points, of medium to large size, with slightly concave bases.
Size: Length range from about 1 to 3 3/16 inches; the majority measuring between 2 and 3 inches. Thickness 5/16 to 3/8 of an inch.
Proportions: These points are two to two and one-half times as long as wide.
Shape: Lanceolate, with excurvate or slightly recurvate edges. Biconvex in cross-section. Base usually mildly to moderately constricted and slightly concave. No smoothing, but occasional thinning present."

Distribution: This point type is associated with the Panhandle Archaic of West Virginia. It penetrates slightly into Ohio along the Beaver River Drainage in Trumbull and nearby counties."
Stauntonville Stommed

References: Mayor-Oakes 1955:140; Ritchie 1961:51

Date: Late Archaic (Dragoo 1958:210).

No Sample

General Description: This type has been described by Ritchie. His description is quoted here.

"Broad, heavy points of medium to large size, with wide stems and very weak shoulders.
Size: In the sample of about 50 New York points studied, the length ranged from 1 3/4 to 3 1/2 inches, with the majority measuring between 2 and 2 1/2 inches. The thickness varied from 1/4 to 7/16 of an inch, most examples falling into the narrow range between 5/16 and 3/8 of an inch.
Proportions: From about one and one-fourth to two and one-half times as long as wide, with most of the points closer to the former proportions, giving them a short, wide, "stubby" appearance.
Shape: Blade outline ovate, lanceolate or trianguloid in descending order of frequency; mildly biconvex in cross-section; edges excurvate. Stem wide, with very small, right angular or sloping (1btuse angle) shoulders. In many cases the shoulders are so weakly developed as to be almost nonexistent, and such intergrades link the stommed and lanceolate forms. Base concave, or less often straight. Very slight smoothing of the basal and/or stem edges, apparently more from use than design, occurs in a small proportion of the specimens. In a few of the specimens the base has been thinned by the removal from one side of the stem of one or more shallow vertical channel flakes."

Distribution: This type is associated with the Panhandle Archaic Complex of West Virginia. It penetrates slightly into Ohio along the Beaver River Drainage in Trumbull and nearby counties.
Eva Basal Notched (see plate 5b)


Date: Middle-Late Archaic, Eva I points have been C14 dated at 5200 B.C. at the Eva site in Tennessee (Lewis and Lewis, Ibid.). Eva II is the diagnostic point type of the Eva phase of the Midcontinent Tradition. Eva II is associated with the Three Mile phase of the Midcontinent Tradition.

Sample Size: 4

General Description: A large to medium sized thin point with a sinuous blade and double basal notches.

Size: May range from 1 or 2 to more than 5 inches in length.

Proportions: L/W = 1/1 to 2/1

Shape: Blade: Outline varies, may be excurvate, excurvate-incurvate, contracting-ovate or even triangular; biconvex in cross-section. The blade tends to be asymmetrical. Primary flake scars are almost entirely obscured by continuous bifacial secondary scars of stopped lamellar type.

Edges are sinuous, but not serrated.

Base: A straight base, thinned, but not ground. A stem and barbed shoulders are formed by double basal notches consisting of single bifacial flakes ending in hinge fractures. The barbs are usually the same length as the stem and are often almost as wide. The tips of the barbs are squared on the earlier and larger Eva I points and more pointed on the smaller Eva II variety.

Distribution: A few Eva II points have been seen by the author. They
were found in Hancock, Fairfield and Shelby Counties, Ohio. They are common in the Eva and Three Mile phases of Tennessee, but are rare outside that state (Boll Ibid.). They do occur in the Tennessee Valley area of northern Alabama and in the Faulkner Fours of Illinois (Bryoles n.d. b).
PART IV.

SUMMARY AND CONCLUSIONS
The Archaic of Ohio has been broken down into three periods, Early (7000–5000 B.C.), Middle (5000–3000 B.C.) and Late (3000–1000 B.C.). Early Archaic hunters and gatherers appear to have moved into the area from the Southeast following the retreat of the Cochrane ice sheet. Likely routes are up the Kanawha-New River system and into the Ohio or up the New Tennessee River and into the Ohio. For a time, these early Archaic peoples may have coexisted with Plano groups. Griffin (1964: 225–9) has dated the Plano period as 8000–6000 B.C. Prufer (1963) has accepted this dating for the Plano period in Ohio, making it partly coeval with the early Archaic. There is no evidence at the present for the in situ development of Plano into Archaic, nor is there any evidence for culture contact between the two groups.

Early Archaic sites are small and marked by projectile point types such as Kirk, LeCroy (or Lake Erie Bifurcate Base), MacCorkle, Kanawha and St. Albans. All of these types have been radiocarbon dated between 6000–7000 B.C. at the early Archaic St. Albans site in West Virginia. All except the Kirk points are bifurcate base forms which prior to the excavation of the St. Albans site were lumped into one or two categories. The LeCroy point, in particular, has been poorly defined. If one adheres to the types established for the St. Albans site, it soon becomes apparent that those points called LeCroy in Ohio are usually St. Albans points. Kanawha and Ohio Bifurcate
Base points have also been called LeCroy. Those points called LeCroy in West Virginia (or a variant thereof) have, in Ohio, been named Lake Erie Bifurcate Base (Trufer and Sofsky 1965: 31-2). The only major difference between the Ohio and the West Virginia specimens seems to be the presence of lateral-medial and proximal-distal burin facets on the shoulders and stens of the Ohio points. This attribute has not been noted in West Virginia. The burin technique may also be observed on Kanawha, St. Albans and MacCorkle points from Ohio, although it occurs with much lower frequency than in the LeCroy or Lake Erie Bifurcate Base points. It appears to have been a technique of manufacture, used to straighten or blunt an edge prior to hafting and does not appear to be sufficient grounds upon which to justify separating Lake Erie Bifurcate Base points from the general LeCroy type.

A much more serious question than the typological placement of this point type is its chronological position and, by extrapolation, the chronological position of any component having this point type in its assemblage. Since Lake Erie Bifurcate Base points occurred frequently in surface collections with Laurentian-type materials, Trufer and Sofsky (Ibid.) attempted to place them in the Late Archaic Laurentian tradition. Their very early placement at the St. Albans site makes me doubt that they are Laurentian. They may date somewhat later in Ohio
than in West Virginia, but 3000 years seems a bit excessive. The great similarities in size and manufacturing technique make it unlikely that they were two separate and unrelated types.

Early Archaic sites give no evidence of even semi-permanent occupation. Communities seem to have been small, restricted Wandering bands, largely dependent upon hunting for subsistence. Ground stone tools first appear in the East about 5000 B.C., and they may have been introduced into Ohio sometime during the middle Archaic. No sites have been isolated that can be definitely attributed to this period. It is possible that the earlier tool types and way of life persisted longer in Ohio than elsewhere.

The period of greatest cultural activity in the area was definitely the late Archaic. Sites are more numerous, larger and give more evidence of prolonged and recurrent seasonal occupation. Heavy, ground stone tools, especially woodworking tools and tools used in the preparation of plant foods are numerous. At least some groups appear to have lived as Central-Based Wanderers. The state may have been a crossroads for trade in copper, fine flint and marine shell. Three local phases of the Laurentian tradition are found in northern and eastern Ohio (the McKibben phase, the Mixter phase and the Dunlap phase) and a possible fourth phase has been noted. The Panhandle Archaic of West Virginia penetrates slightly
into Ohio along the Beaver River drainage. Sites affiliated with the Midcontinent and eastern traditions occur in southern Ohio. Sites with assemblages similar to those from the Eastport, Davis and Hodges sites in Michigan can be found in northwestern Ohio. It was from this rich and varied pool of material culture and, by implication, other cultural subsystems, that the early Woodland cultures were synthesized.
APPENDIX

PLATES
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c- Shell disc from the Davis mound, d- Ground stone plummets from the Davis mound.
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BIBLIOGRAPHY
Bibliography

Baby, Raymond S.
1950 Raisch-Smith site field notes. Ohio Historical Society files. Columbus.


Baby, Raymond S. and Asa Meys Jr.

Boardsley et al.

Bell, Robert E.


Binford, L. R.

Binford, L. R. and M. L. Fagsworth
Bibliography cont.

Aritt, Claude Jr.
1967a The Beavon Pond site: a multicomponent site in Shelby County, Ohio. The Ohio Archaeologist, Vol. 17, No. 3. Columbus.


1968a The Hartman site: a multicomponent surface site in Auglaize County, Ohio. The Ohio Archaeologist, Vol. 18, No. 2. Columbus.

1968b The Fritz site: a multicomponent site in Auglaize County, Ohio. The Ohio Archaeologist, Vol. 18, No. 2. Columbus.

1968c The Hopkins sites: multicomponent sites in Miami County, Ohio. The Ohio Archaeologist, Vol. 18, No. 4. Columbus.


Broylos, Bettyo J.

n.d.a Excerpts from a projectile point typology for West Virginia. Photocopy.


Broylos, Bettyo J. and Danney E. Olinger n.d. Two Tonnoseo and West Virginia projectile point types. The Tonnoseo Archaeologist, In press.
Byers, Douglas S.,

Caldwell, Joseph

Cleland, Charles E.

Coo, J. L.

Converse, Robert M.

-------------------

Crano, H. R.

Cunningham, Wilbur M.

Dragoo, Don

Epstein, Jeremiah
Bibliography cont'd

Fitting, J. E.

Fowlor, Melvin L.

Griffin, James E.

Harper, W. C.
1968 Bifurcated base points from the Hayport Site in Scioto County, Ohio. The Ohio Archaeologist, Vol. 18, No. 1. Columbus.

Hastings, Jerry

Hastings, Jerry
1968 The Ohio Baptist site. The Ohio Archaeologist, Vol. 18, No. 4. Columbus.

Hollman, James III

Hoezer, Robert F.
Henderson, Charles

Kemp, John D.

Kneberg, Madaline

-----------
1956 Some important projectile points found in the Tennessee area. The Tennessee Archaeologist, Vol. 12, No. 1.

Knobloch, Byron
1939 The Bannerstones of the North American Indian.

Koelsar, Stephen C.
1969 A re-examination of the Raisch-Smith site. Unpublished manuscript. Department of Anthropology, Ball State University, Muncie, Indiana.

Krieger, Alex D.

-----------

Lewis, T. H. M. and Madaline Kneberg

Lewis, T. H. M. and Madaline Kneberg Lewis

Littlecott, Harry and Martin L. Fair

Long, Dr. Russell J.
Bibliography contd.

Mason, Ronald J.

Mayer-Oakos, William J.

1955b The Globe Hill shell heap (Site 46HK 34-1), Hancock County, W. Virginia, Publications of the West Virginia Archaeological Society, Series 3.

McKenzie, Douglas H.

Moffett, Ross
1949 The Raisch-Smith site: on early Indian occupation in Problo County, Ohio. The Ohio State Archaeological and Historical Quarterly, Vol. 58, pp. 428-41, Columbus.

Morgan, Richard G.

Potter, Martha

Prufer, O. H.,

Prufer, Olaf

Prufer, O. H. and Baby, A. S.
Bibliography cont.

Pruefer, Olaf and D. McKenzie

Pruefer, Olaf and Charles Sofsky

Ritchie, W. A.


Ritzenthaler, Robert

Soars, William H.

Shane, Orrin C. III

Shane, Orrin C. and James L. Murphy
Bibliography cont.

Sharp, M. S.

Smith, Arthur G.
1950  Beveled point types. The Ohio Indian Relic Collectors Society Bulletin, No. 24, Columbus.

1954  Beveled or rotary points. The Ohio Archaeologist, Vol. 4, No. 2. Columbus.

1956  An Archaic type with ground stem from Northern Ohio. The Ohio Archaeologist, Vol. 6, No. 2. Columbus.

1957  A very early Archaic or Late Paleo-Indian type. The Ohio Archaeologist, Vol. 7, No. 4. Columbus.

1965  Two odd knives from Huron County, Ohio. The Ohio Archaeologist, Vol. 15, No. 2. Columbus.


Seday, Frank J.

Stout, Paul and Don W. Dragoo

Wachtol, H. C.

Wobb, William S.
Webb, William S.
1950 The Carlson Annis Mound, Site 5, Butler County, Kentucky. The University of Kentucky Reports in Anthropology and Archaeology, Vol. 8, No. 4.

Webb, William S., and DoJarnette

---------------

Webb, William S., and William G. Haag
1939 The Chiggerville site, Site 1, Ohio County, Kentucky. University of Kentucky Reports in Anthropology and Archaeology, Vol. 4, No. 1, Lexington.

---------------
1940 Cypress Creek Villages, Sites 11 and 12, McLean County, Kentucky. University of Kentucky Reports in Anthropology and Archaeology, Vol. 4, No. 2, Lexington.

White, Anta M., Louis R. Binford and Mark L. Papworth

Willeo, Gordon

Willeo, Gordon R.

Willeo, Gordon and Philip Phillips

Wintors, Howard D.
1968 Valo systons and trade cycles of the Late Archaic in the Midwest. In New Perspectives in Archaeology. Edited by Binford and Binford. Aldine.
Bibliography cont.

Winters, Howard

Witheoft, John W.

Yarnell, Richard Asa.
1964 Aboriginal relationships between culture and plant life in the Upper Great Lakes Region. Anthropological Papers of the University of Michigan, No. 18. Ann Arbor.