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PALEO-INDIAN HABITATION AT THE PIERCE SITE (40Cs24);
CHESTER COUNTY, TENNESSEE

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ABSTRACT

The Pierce site, located in Chester County, Tennessee, was first recorded in 1973. This site contained some 140 Paleo-Indian artifacts dating from Clovis to late Paleo-Indian times. This paper attempts an initial analysis of this body of data, and is strongly centered upon a functional interpretation of both the artifacts and the site. Little has been professionally reported concerning the Paleo-Indian occupation of West Tennessee, and it is hoped that this study will help fill the gap in our knowledge of this area.

Introduction

During the fall of 1973, as part of a general archaeological survey of the South Fork of the Forked Deer River drainage, a concentration of Paleo-Indian lithic materials was recorded on a small sandy rise 350 meters northeast of the Eastern Citadel of the Pinson Mounds site (40Md1). Throughout the following two years, with the permission of the landowner, Mr. William F. Pierce, we were able to retrieve a controlled surface collection of 140 Paleo-Indian artifacts.

The Pierce site is situated on the plateau-bluff system which skirts the northern bank of the South Fork of the Forked Deer River. A small tributary spring of this river flows to the west of the site. Lithic debris was initially recorded over a 250 square meter area. After an intensive examination, a grid system was established over this boundary. Numerous flakes, uniface tools, and Paleo-Indian projectile points were subsequently mapped and removed. During this two year time period, additional mapping was conducted after every spring plowing.

Although the site has been heavily disturbed by modern agricultural practices, I believe that it is possible to discern patterns of prehistoric activity areas by means of the complete surface mapping and analysis which was conducted at the site. The plow has obviously altered the prehistoric distribution of materials to some extent, but broad distribution patterns and clusters of artifacts were found with the study of the surface scatter.

Two distinct scatters of lithic materials were readily perceived. One cluster, located on the highest point of the southern end of the site, consisted of fluted projectile points and preform fragments. The majority of uniface tools were recovered from this area. The second scatter, a small concentration of debris, was discovered on the northern end of the site (see Figure 1). The lithic materials within this cluster consisted of Dalton

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projectile points and points similar to the Plano type, but contained fewer uniface tools than the other cluster. These two concentrations of materials appear to overlap only within a very restricted area and were probably not contemporaneous.

The first unusual feature of the entire lithic assemblage is the rather small size of finished tools when compared to Paleo-Indian materials from the Tennessee River area. It was found that the size of the uniface tools within the Pierce assemblage was directly correlated to the relatively small size of the primary source materials. All tools, including projectile points, appear to have been manufactured from local chert gravels or cobbles, with these cobbles ranging in size from 4 to 6 inches in diameter. Evidence of cortex is present on a majority of materials from the site, excluding projectile points.

At first, it seemed that the primary river cobble source had yielded at least five different types of chert. Two types, however, were a brown and gray variety of Fort Payne chert. A third type was a thermally altered form of this Fort Payne type (alteration by heat changes the color to a pink or rose shade of red). A cream colored fine-grained chert with iron inclusions was a minority type on the site. The last type was a fine-grained waxy chert which varied from dark brown to a light green color.

To classify the Paleo-Indian tool types, I have relied with some modification on the projectile point typology of Cambron and Hulse (1969); and the uniface tool typology of Cambron and Hulse (1967) and Kraft (1973). The majority of eastern Paleo-Indian studies are generally derived from large multicomponent sites, with the report being a simple listing of tool and projectile point types. Unfortunately, little attention has been paid to the smaller, more ephemeral sites. To understand the full range of Paleo-Indian adaptations all site types should be investigated and analyzed. The following is a description of the lithic materials and measurements of wear patterns of tools found at the Pierce site:

Artifact Assemblage

Projectile Points:

Clovis (Cambron and Hulse 1969:20)

Sample size: 8 (Figure 2, a-b)

Four points of this type are represented by basal fragments of fluted preforms. Another is a fluted base which was snapped in the final stages of manufacture. The base has been beveled with a single flute being removed from each face. This point, basally constricted, is unground and lacks the presence of a striking nipple.

One complete point and one base fragment show evidence of multiple fluting on one face; the complete specimen also has been resharpened along the entire lateral margins. The final example within this type is a fluted midsection which shows an impact fracture at the distal end.

Measurements (one specimen): Length 50 mm.; Width 23 mm.; Thickness 4 mm.

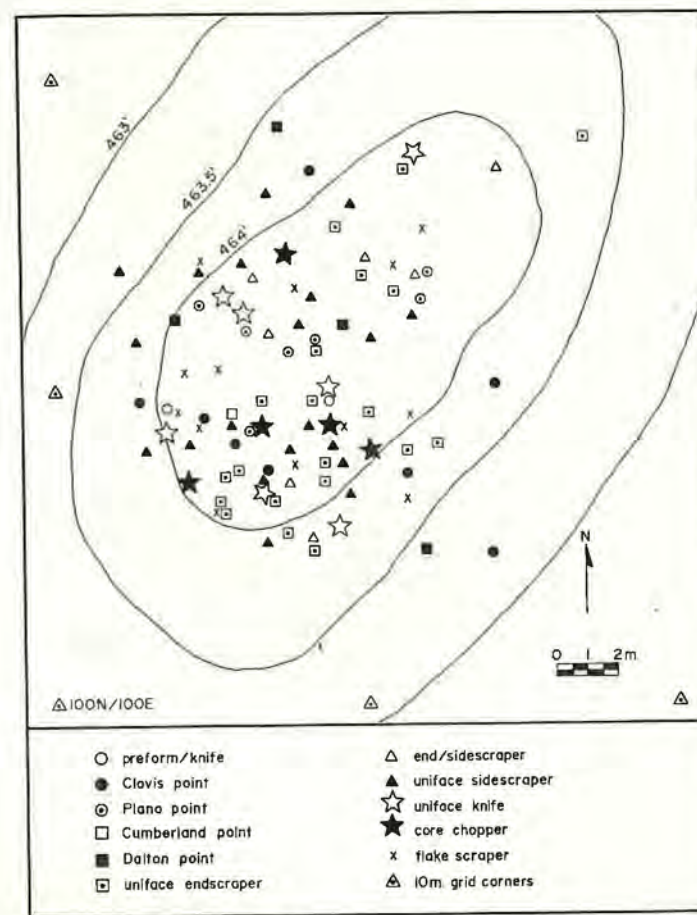


Figure 1. Plan view of Paleo-Indian artifact concentrations at the Pierce site.

Materials: Gray Fort Payne chert-5; Brown Fort Payne chert-1; Cream colored chert-1; Thermally altered Fort Payne chert-1

Cumberland (Cambron and Hulse 1969:30)

Sample size: 1 (Figure 2, c)

This specimen is a basal portion which was snapped in manufacture with only one face being fluted. The lateral edges are lightly ground and the basal cavity is unground. In order to prepare a striking nipple on the beveled section of the base, guide flutes were struck. The use of guide flutes seem to be an important stage in the manufacture of Cumberland projectile points (Jolly 1972:78-80).

Measurements: Length ?; Width 18 mm.; Thickness 3 mm.

Material: Gray Fort Payne chert-1

Dalton (Cambron and Hulse 1969:32).

Sample size: 4 (Figure 2, d-e)

Three basal fragments and one complete point were classified within this category. All artifacts display heavy basal and lateral grinding with extensive resharpening along the blade edges. These projectile points appear to be a slight variation on the Greenbrier-Dalton type.

Measurement (one specimen): Length 43 mm.; Width 22 mm.; Thickness 3 mm.

Materials: Gray Fort Payne chert-2, Brown Fort Payne chert-2

Plano (Kraft 1973:80-85; Cunningham 1973:123-125)

Sample size: 7 (Figure 2, f)

This type consists of two complete projectile points and five basal fragments. Three artifacts are resharpened along the lateral margins. All specimens taper toward the base, and the base and lateral edges are heavily ground. Five bases are straight, while the other two are slightly incurvate.

Measurements (two specimens): Mean Length 52 mm.; Mean Width 21 mm.; Mean Thickness 5 mm.

Materials: Gray Fort Payne chert-4; Thermally altered Fort Payne chert-2; Cream colored chert-1

Projectile Point midsections and distal ends

Sample size: 8 distal ends; 5 midsections

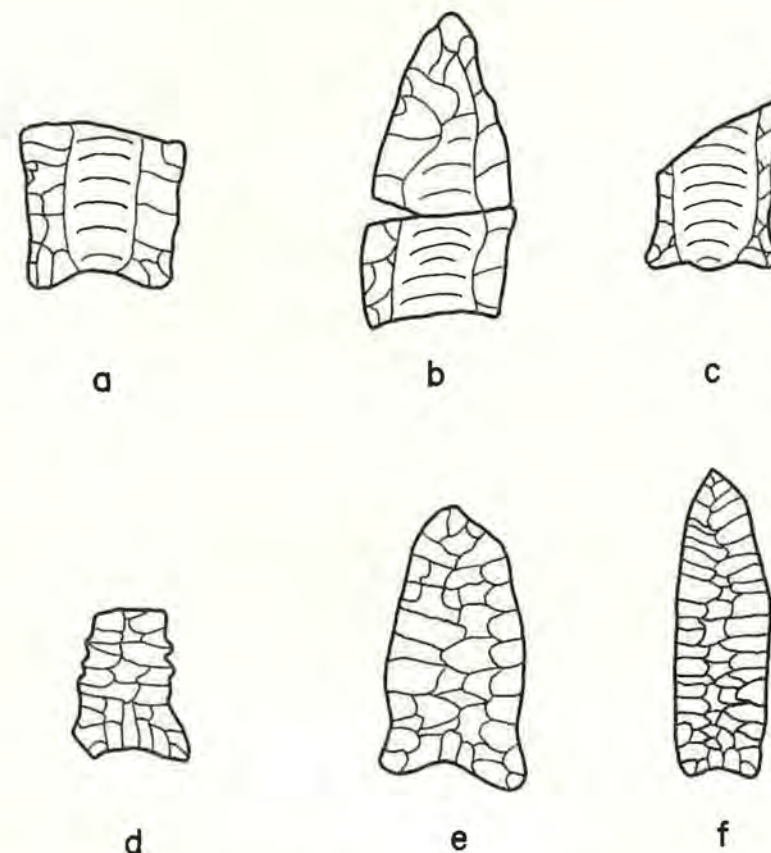


Figure 2. Paleo-Indian projectile points from the Pierce site: Clovis a-b; Cumberland c; Dalton d-e; and Plano f (all points actual size).

These fragments were not identifiable as to an established type, although four of the distal ends have been resharpened and are possibly tips of Dalton projectile points.

Materials: Gray Fort Payne chert-9; Brown Fort Payne chert-4

Channel flakes

Sample size: 2

These specimens are two small sections of channel flakes with random flake scars on the dorsal surface. The bulb of percussion is present on one flake, while the other is snapped at both ends.

Measurements (two specimens): Mean Length 16 mm.; Mean Width 12 mm.; Mean Thickness 22 mm.

Material: Gray Fort Payne chert-2

Preform/knives

Sample size: 2

A proximal and a distal preform fragment were recovered while the initial surface mapping was undertaken. Fluting was not present on the basal fragment, but it had been beveled. The distal end section shows two short fluting scars. Both artifacts exhibit heavy attrition wear along the lateral edges, which suggests that these preforms were utilized as knives as well as being prepared as preform blanks.

Measurements (two specimens): Mean Length (?); Mean Width 35 mm.; Mean Thickness 4 mm.

Material: Gray Fort Payne chert-2

Uniface Endscrapers:

Triangular endscrapers (Cambron and Hulse 1967:3)

Sample size: 13

Seven complete scrapers, two distal ends, and four proximal ends comprise this tool category. Six are trapezoidal in cross-section, two are triangular, and four are plano-convex. The bit, or working edge, of four artifacts is straight while five are excurvate.

The working edge of eight scrapers exhibit step fracture (hard wear), while only one specimen displays polish (soft wear). Seven possess graver spurs at both sides or corners of the bit, and two artifacts are without graver spurs.

Measurements (seven specimens): Mean Length 27.6 mm.; Mean Width 23.3 mm.; Mean Thickness 5 mm.; Mean Edge Angle 81°

Materials: Gray Fort Payne chert-5; Brown Fort Payne chert-2; Thermally altered Fort Payne chert-5; Greenish-brown waxy chert-1

Rectangular endscrapers (Cambron and Hulse 1967:4)

Sample size: 7

Four complete scrapers and three distal fragments were placed within this tool category; six exhibiting a trapezoidal cross-section and one a triangular cross-section. Working edges are all heavily step fractured. The bit is excurvate among all tools of this type. Graver spurs are absent.

Measurements (four specimens): Mean Length 36.2 mm.; Mean Width 24.8 mm.; Mean Thickness 6.5 mm.; Mean Edge Angle 86°

Endscraper/sidescrapers

Sample size: 7

One complete tool and six fragments of the proximal end were recorded. The complete specimen exhibits extreme step fracture, or crushing, at the bit and along the lateral edges. The cross-section is plano-convex on three examples, triangular on three, and trapezoidal on one of the tools.

The snapping of six tools at the probable hafting point suggests that extreme pressure was applied to the object being scraped. This material would probably have been either bone or very dense wood.

Measurements (seven specimens): Mean Length (?); Mean Width 20 mm.; Mean Thickness 8 mm.; Mean Edge Angle at bit 88°; on lateral edge 83°

Materials: Gray Fort Payne chert-5; Brown Fort Payne chert-1; Cream colored chert-1

Uniface Sidescrapers:

Sidescrapers

Sample size: 18

This category consists of eight complete scrapers and ten fragments. Four were manufactured from large decortication flakes and three had cortex present on the dorsal surface. The remaining eleven scrapers were made from smaller end of core flakes; all possessing a steep beveled working edge along one lateral surface. One specimen has two graver spurs at the distal end and another possesses one at the corner of the distal end. The working surfaces are all heavily crushed.

Measurements (eight specimens): Mean Length 60.8 mm.; Mean Width 34 mm.; Mean Thickness 11.8 mm.; Mean Edge Angle 89°

Materials: Gray Fort Payne chert-8; Brown Fort Payne chert-6; Thermally altered Fort Payne chert-1; Greenish-brown waxy chert-3

Flake scrapers

Sample size: 13

These implements were manufactured from primary flakes with one or more scraping edges along the dorsal side of the flake. Seven are made from rather large thick flakes; the other six are from very thin bifacial trim flakes. Two of the thick flakes display notching, or spokeshave use, along one retouched surface. One of the thin flakes has a beak, or perforator, at one corner of the implement. The working edges vary from straight to excurvate with a mean length of retouched surface of 16 mm. The scraping surfaces show moderate to heavy step fracture.

Measurements (13 specimens): Mean Length 35 mm.; Mean Width 22 mm.; Mean Thickness 6.2 mm.; Mean Edge Angle 78°

Materials: Gray Fort Payne chert-4; Brown Fort Payne chert-9

Uniface knives:

Sample size: 7

Three of these knives appear to be manufactured from blades; the others are from elongated flakes. The four complete specimens display attrition wear (cutting) on both lateral edges. One blade knife has a graver spur at the corner of the distal end.

Measurements (four specimens): Mean Length 50.3 mm.; Mean Width 24 mm.; Mean Thickness 3 mm.; Mean Edge Angle 32°

Materials: Gray Fort Payne chert-4; Brown Fort Payne chert-1; Thermally altered Fort Payne chert-2

Retouched flakes:

Sample size: 22

All are primary flakes which show some degree of retouch and were utilized as either scrapers and/or knives. Three were used as spokeshaves and three have graver spurs at one corner. From the mapping of all surface debris at the site, it appears that almost all waste flakes were used in some fashion as implements for scraping, cutting, or sawing.

Materials: Gray Fort Payne chert-11; Brown Fort Payne chert-4; Thermally altered Fort Payne chert-4; Cream colored chert-2; Greenish-brown waxy chert-1

Preform trim flakes:

Sample size: 7

These bifacially trimmed edge flakes have ground striking platforms which represent preform blade edges. All have been utilized or retouched as knives.

Materials: Gray Fort Payne chert-6; Brown Fort Payne chert-1

Core choppers:

Sample size: 5

These artifacts are rough oval and irregular cores with a heavy crushed chopping or cutting edge. Cortex is present on two of these implements.

Measurements (three specimens): Mean Diameter 45 mm.; Mean Thickness 20 mm.

Materials: Gray Fort Payne chert-2; Brown Fort Payne chert-2; Cream colored chert-1

Core reduction flakes:

Sample size: 3

The three examples were struck from core edges and exhibit some cortex. One flake has been retouched along one edge, and was probably utilized as a scraper.

Material: Gray Fort Payne chert-3

Hammerstones:

Sample size: 1 (fragment)

This single specimen consists of the end of an elongated cobble with moderate battering along the edges.

Material: Reddish quartzite-1

Testing

After surface mapping had been completed, a series of four, two meter squares, and three, one meter by two meter units, were excavated to sterile soil. Unfortunately, *in situ* Paleo-Indian occupations were not recovered. Most of the debris from the test pits was uncovered in the top five centimeters of the plowzone. Two badly disturbed hearths, located to the south and northeast of the two major lithic concentrations, were recorded and

excavated. These features, however, probably date to a much later time period, possibly the Late Archaic.

Soil erosion, combined with the intensive cultivation techniques of modern agriculture, suggest the improbability of locating an undisturbed Paleo-Indian site within the region of the South Fork of the Forked Deer River. The one possible exception, would be the location of an intact site on the alluvial floodplain; its discovery, if such sites exist, would be accidental since soil buildup is extremely deep within these particular areas.

Conclusions

As stated previously, the Pierce site collection consists of at least two distinct assemblages which are separated with respect to spatial distance and temporal placement. The primary assemblage, containing the majority of fluted projectile points, also includes snapped preforms and scrapers exhibiting very pronounced step fracture on the working surfaces. This characteristic suggests that during the Clovis occupation, the site was utilized for those activities which are associated with the preparation of tools and implements from preform blanks for the hunting of game. Judge (1973:203) refers to such sites as "armament sites". The wear patterns are also characteristic of what has been called "limited activity locations" (Broster 1981:18-19; Wilmsen 1968:28-29).

The Dalton and Plano assemblage contains a high percentage of resharpened projectile points. These tools would be probably associated with activities which are linked to weapon renewal or post-hunt tasks such as the manufacture and repair of bindings, foreshafts, and shafts. The use and resharpening of these projectile points as knives also suggests the possibility of limited butchering activities. An absence of soft wear on scrapers in either assemblage, one endscraper being the exception, would support the belief that hide working was not undertaken at the site during the Clovis and late Paleo-Indian occupations of the site.

From our general survey of the South Fork of the Forked Deer River, we discovered that the Pierce site has produced the heaviest concentration of early lithic materials. Only six other sites were recorded which contained any Paleo-Indian materials. A single fragment of a Clovis point was from two of these six sites. One projectile point base, similar to a Clovis, was excavated at the Pinson Mounds site (40Md1) during the 1974 field season.

The Scott site (40Md34) has produced two Dalton projectile points and numerous uniface endscrapers. This site is located on the old terrace system of the South Fork of the Forked Deer River. Two other limited activity Paleo-Indian locations have been recorded; one produced a few uniface materials, and the other contained one reworked Clovis and one Quad projectile point.

The possible explanation of the continued use of the Pierce site during Paleo-Indian times, as opposed to other sites along this particular river system, is perhaps three-fold. The first reason is that the site is located near several permanent sources of water, one of which is a tributary spring system located to the west of the site. Although the location of such springs has probably changed over the last 10,000 years, springs were probably located in the general area during the Paleo-Indian occupation. The second explanation is that the site, located on a bluff margin, provides an extensive

overview of the South Fork of the Forked Deer River drainage. This would have been a very advantageous point for the observation of herd animals grazing along the river margins. The last possible reason is that the Pierce site is located some 200 meters to the south of a major stream dissected plain. This plain could well have been a principal feeding ground for large Pleistocene herd animals.

We hope that future survey work will uncover other Paleo-Indian sites along the river. The mapping and analysis of the Pierce site offers new insights into the possibilities of study of intrasite and intersite variability for the occupations of early hunters and gatherers within this particular region of West Tennessee.

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