The Hatfield Site: A Monongahela Tradition Village in Washington County Pennsylvania

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ABSTRACT

This presentation is an introduction to the Hatfield site (36WH678), which is a large, multicomponent archaeological site located approximately 30 km south of Pittsburgh in North Strabane Township, Washington County, Pennsylvania. Since 2007, the Allegheny Chapter No. 1 of the Society for Pennsylvania Archaeology, Inc. has undertaken an archaeological investigation of the site. Based on surface and excavation data, several occupations have been identified at Hatfield, from a possible Paleoindian locus, to probable small archaic camps, to multiple Late Prehistoric villages. Excavations have focused on one of the village components. Features, artifacts, and a recently obtained radiocarbon assay indicate that this component pertains to the Middle Monongahela period dating to the beginning of the 15th century A.D.
INTRODUCTION

Hatfield (36WH678) is a large, multi-component archaeological site located approximately 30 km south of Pittsburgh in North Strabane Township, Washington County, Pennsylvania. The site was recorded in 1980 by Kenneth L. Fischer, a former Research Associate of the Carnegie Museum of Natural History and a long-time member of the Allegheny Chapter No. 1 of the Society for Pennsylvania Archaeology.

The site is situated on a long peninsular hill spur oriented north to south at an elevation of 360 m above sea level. This hill spur, which is flanked by springs on both the eastern and western sides, gently slopes down to a small unnamed tributary of Little Chartiers Creek at its southern tip. Little Chartiers Creek joins the larger Chartiers Creek about seven km northeast of the site. As a major tributary, Chartiers Creek confluences with the Ohio River near the City of McKees Rocks, just north of Pittsburgh, where its prehistory is well documented by sites such as the McKees Rocks Mound (McMichael 1956) and the McKees Rocks Village (Buker 1968).
Based on surface-collected artifacts from the Fischer collection, including numerous projectile points, pottery sherds, bone, shell, and other diagnostic items, several occupations have been identified at Hatfield, from probable small archaic camps to multiple, extensively occupied Monongahela Tradition villages (George and Fischer 1999:32). These occupations are marked by diagnostic Archaic, Woodland, and Late Prehistoric projectile points (George and Fischer 1999:32). Moreover, pottery sherds indicate that at least two temporally distinct Monongahela villages were seated at the site (George and Fischer 1999:32, William C. Johnson, personal communication 2007). The first of these occupations is attributed to the Early Monongahela period based on Drew phase stylistic motifs on pottery vessels. A second Middle Monongahela period occupation is tentatively identified by a high incidence of shell tempering and cord-marking of ceramics from the site. A Late Monongahela period component has also been postulated for the site based on a non-local artifact (George and Fischer 1999).

Late in 2006, the Allegheny Chapter of the Society for Pennsylvania Archaeology proposed to undertake an archaeological investigation of a site. Since it had been several years since the chapter was actively involved in archaeological fieldwork, the last project being joint excavations with the Carnegie Museum of Natural History in the 1990s at the Wylie #3 site, the officers of the chapter felt that active archaeological research would benefit its members, attract new membership to the chapter, and promote archaeology and historic preservation throughout the region. Through the efforts of Kenneth Fischer, and through his coordination with the landowners, the Mansfield family, the Hatfield site was selected as the best candidate for a chapter excavation.

After a few months of deliberation and planning by the Chapter and its officers, fieldwork eagerly began in July of 2007. Currently, the chapter is beginning its fourth season
of research at the site. As a tool for public outreach and education, excavations at the Hatfield site have proven to be fruitful. Besides attracting numerous volunteers and visitors to the site, from high school students, laypersons, anthropology students from local universities, chapter members, young professional archaeologists, and seasoned scholars, the work at Hatfield has led to a number of public speaking opportunities and media spotlights in which the chapter has been able to promote the archaeology of southwestern Pennsylvania.

PHYSIOGRAPHY and GEOLOGY

The Hatfield site is situated within the unglaciated Pittsburgh Low Plateau Section of the Appalachian Plateaus Physiographic Province, which is characterized by narrow summits, narrow stream bottoms, and steep linear valley slopes. This highly dissected terrain results from the erosion of flat lying bedrock composed of relatively soft shale and claystone, capped by more resistant limestone, siltstone, and sandstone.
Bedrock underlying the Hatfield site belongs to the Pennsylvanian aged Washington Formation that is composed of cyclic sequences of sandstone, shale, limestone, and coal (Wagner et al. 1975). The base of the Washington Formation is defined by the Washington coal. Overlying the coal are three limestone beds (lower, middle, and upper) that are readily identifiable on many hilltops across Washington County. The weathering of these various beds provides the parent material from which the soils on the Hatfield site have formed. Soils underlying the test excavation are mapped as Guernsey silt loam on 3 to 8% slopes (NRCS 2007a), which are excellent for growing staple crops such as corn and wheat (NRCS 2007b). A mesic climate, the type of bedrock, and the long term stability of the land surfaces are primarily responsible for the characteristics of these soils. Although the field was not in active cultivation when the chapter began excavations, aerial photography taken in April of 1993 shows that the area had been in active cultivation in the past (NCRS 2007b).

Prior to the excavations, two 3 ¼ inch bucket auger probes were placed at the site to test the soils for thickness of individual soil horizons and their general characteristics (Fritz and Valko 2007). A pronounced plow zone with a depth ranging between 23 and 26 cm was clearly shown by the unusually dark humic soils of the Ap horizon. It is possible that midden deposits resulting from prehistoric occupation of the site have enhanced the darkness of the Ap horizon. Based on the auger probes, the artifact density within the plow zone was relatively high, with two artifacts recovered per 1.2
liters of soil. The bottom of the Ap horizon is sharply contrasted against the lighter and more yellow Bt horizons. Formation of these Bt horizons is the result of *in situ* weathering of bedrock over thousands of years. It was determined that artifacts were unlikely to be found within the Bt horizons except where human features, bioturbation, or any other type of disturbance has intruded into the Bt horizons.

**HISTORY OF PREVIOUS RESEARCH**

No previous archaeological excavations had taken place prior to the Allegheny Chapter’s interest in the Hatfield site. As noted earlier, the Hatfield site was recorded in 1980 by Kenneth L. Fischer based on surface collections. His position as Research Associate at the Carnegie, membership to the Allegheny Chapter, and keen interest in the prehistory of Washington County allowed Fischer to share details about the site and its artifacts with Richard George and staff at the Section of Man of the Carnegie Museum of Natural History.

In one instance, Fischer’s collaboration with George led to an article published in *North American Archaeologist* based on two rather unique artifacts from the Hatfield site (George and Fischer 1999). One of these artifacts is described as a section of a small bowl made from serpentine, a magnesium silicate lithic material. This type of stone is exotic to southwestern Pennsylvania (George and Fischer 1999:32). George and Fischer (1999:42) postulated that the serpentine artifact may have originated from Tennessee or the Midwest, possibly as a result of trade with Mississippian cultures. This conclusion was based on the regional distribution of serpentine artifacts and on loose comparisons between the Hatfield artifact and a complete effigy pipe collected in Washington County that was also made from serpentine.

The second artifact from the Hatfield site discussed by George and Fischer (1999:34) is a pipe bowl made from steatite. They suggest that the pipe is diagnostic of a proto-historic
occupation at the Hatfield site due to occurrences of similar artifacts at proto-historic Orchard phase Fort Ancient sites in West Virginia and at the Susquehannock Strickler site in Lancaster County, Pennsylvania (George and Fischer 1999:39-41). George and Fischer (1999:41) also speculate that, based on morphology, these steatite pipes may have been imitations of European Kaolin pipes.

In a typological and distributional study of cannel coal pendants published in *North American Archaeologist*, Verna Cowin (1999) included four pendants from the Hatfield site. Also based on Fischer’s surface collection, they were classified as imitation bear canine pendants (Cowin 1999:247 and Table 2, 244). In her study, Cowin (1999:248) found that imitation bear canine forms were the most common type of cannel coal pendant, occurring at 14 out of 32 sites in the study. Additionally, she suggested that cannel coal pendants and gorgets date between A.D. 1000 and A.D. 1380, or during the Early and Middle Monongahela periods (Cowin 1999:248).

Finally, Dick George used and described another Hatfield site artifact in a study published in the *Archaeology of Eastern North America* that examined the incidence and function of discoidals at Late Prehistoric Monongahela sites (George 2001a). Specifically, he looked at 68 bioconcave discoidals from 42 sites and concluded that these artifacts were used in the pan-regional Native American game called chunkey (George 2001a). The lack of these
artifacts at Early Monongahela period sites suggested to George that this game diffused into the Upper Ohio Valley beginning around the 13th century (George 2001a:15).

According to George (2001a:15), the Hatfield specimen is one of 13 distinct Mississippian discoids in his study. He differentiated the Mississippian discoids from the overall sample primarily by size, with the Mississippian artifacts being larger and thicker. Additionally, four of these specimens were made from granite or quartzite. The Hatfield specimen was made from fine-grained sandstone. Unfortunately, the artifact is broken in half (George 2001a:12, Table 3 and 13, Figure 8). Uniquely, the artifact is decorated on both sides with incised lines. On the side depicted, the design appears to be an animal head with ears, eyes, an open mouth, and teeth (George 2001a:12, Table 3).

Concerning the Mississippian discoids, George (2001a:15) posits that, based on their workmanship, these artifacts were most likely prestige items. Furthermore, he suggests that their presence in Monongahela and Fort Ancient sites was a manifestation of an expansionist strategy of Mississippian chiefdoms aimed towards cultural groups on their periphery (George 2001a:16).

**METHODOLOGY**

One of the primary purposes of excavations at the Hatfield site was to garner public interest in the archaeology of southwestern Pennsylvania through hands-on experience. As a result, it was decided to excavate the site by hand even though the mechanical removal of the disturbed plowzone would be more efficient in exposing larger areas of the site and help reveal settlement patterns. The chapter felt that there were a number of benefits in the slower-paced hand excavation. First, it allows for the supervision and education of inexperienced fieldworkers. Second, volunteers can be involved in most aspects of the fieldwork. Third, since village sites are among the most complex sites to excavate, there is ample time to properly
document the findings without being overwhelmed. And fourth, a smaller portion of the site is impacted, thus preserving large areas for future research.

A baseline and site grid were established to facilitate the opening of test excavation units during the initial site visit (Fritz and Valko 2007). A one-inch diameter iron pin was driven into the ground and labeled Datum 1, N1000 E1000. Subsequently, a Berger transit was stationed over Datum 1 and a second iron pin was placed 20 meters north and labeled Datum 2, N1020 E1000. Grid north of this baseline was aligned with magnetic north. Both iron pins penetrated deep enough to intersect weathered bedrock within the Cr horizon. Using this baseline, a 20 x 1 m long trench was staked out from N1000 E1001 to N1020 E1001. Large iron spikes were used as corner stakes. Surface elevations for each one meter interval along the outline of the trench were measured relative to the top of the iron pin at Datum 1. Subsequently, additional datum points were established using the transit. They were placed at 45 m along the north-south line and at 20 and 42 m along the east-west line.

The Ap-horizon of all 1 x 1 m test units were excavated by shovel and trowel until the interface with the B-horizon was reached. All of the soil was screened through quarter-inch mesh. During the first season, all units were excavated in 10 cm increments, but in subsequent seasons, the plowzone was removed as one natural level.

When features were encountered, they were mapped in plan and photographed. Subsequently, they were bisected, and half of the feature fill was removed in 10 cm levels. Once removed, maps and photographs of the feature’s profile were produced. Upon completion, the second half of the feature was excavated in 10 cm increments. Finally, a post-excavation photograph was taken. In one instance, a post-excavation plan map was produced to document the morphology of a feature that was not apparent prior to its excavation.
Constant volume samples of each level in each feature half were taken for floatation, and the rest of the feature fill was wet screened off-site through progressively smaller mesh size. All of the postmolds encountered were mapped in plan and their entire fill was kept for flotation. A sample was bisected and mapped in profile.

Results from Hatfield are also being incorporated into a Geographic Information System (GIS). This will allow for tight control during spatial analysis of the artifact and feature data from the site. It is hoped that distribution and density maps of various artifact classes, and their spatial relationship to features, will allow for a more accurate interpretation of the intra-site patterning of the site. Additionally, analysis within this GIS may reveal activity areas and aid in reconstructing the organization of the village.

RESULTS

To date, a 40 square-meter area has been exposed at the Hatfield site through the excavation of 1 m x 1m test units. Eight features have been identified, with a density of one feature for every five meter-square area exposed. Features include refuse pits, fire pits, storage pits, and burials, all of which are typically found within the domestic zone, or house ring, of Monongahela villages. The following is a brief description of the Hatfield features.

Features

Feature 2 Feature 2 is best characterized as an amorphous pit with an irregular base. The feature measured 172 cm in length, 124 cm at its widest point, and 10 cm in maximum depth. It contained just over 155 liters of soil. The feature matrix consisted of very dark brown silt with pockets of red burnt earth and charcoal. One thousand and seventy artifacts were recovered from this feature. Of
The particular interest are rim sherds from at least seven different ceramic vessels that exhibit pie-crusted lip treatments and three diminutive disc beads.

A fragment of hickory nut (Carya sp.) from the south half of the feature was submitted to the Illinois State Geological Survey (ISGS) for Accelerator Mass Spectrometry (AMS) radiocarbon dating. The sample returned a date of 545±15 radiocarbon years before the present (rcybp) (ISGS-A1409). This date has a one sigma calibration of A.D. 1399-1419 and a two-sigma calibration of A.D. 1326-1425.

*Feature 3* Feature 3, which was designated Burial 1, contained the skeletal remains of a young adult female aged between 18 and 22yrs. The oval burial pit measured 76 cm in length and 56 cm in width. The matrix of the pit consisted of a mottled, yellow-brown silt and clay that was difficult to differentiate from the surrounding B-horizon. The body was placed in a tightly flexed position on its right side, facing east with the head oriented towards the southwest. The cranium, which was placed on a large piece of limestone as if it was a pillow, was crushed due to post-depositional processes. The right arm was positioned so that the hand was resting near the body’s mouth or face. Another piece of limestone was used to support the arm. Several pottery sherds were found in the fill, and they most likely were an accidental inclusion to the grave. Besides the limestone fragments, no other burial furniture was recovered. Preliminary examination of the skeletal remains suggests that the individual was in fairly good health, as
there were no indications of disease or nutritionally-related pathologies. Although there is heavy wear present on the teeth, there are no dental carries evident.

**Feature 4** Feature 4 is a small, steep-sided, roughly circular basin that was lined with at least 10 postmolds, ranging in diameter from 5 to 8cm. The feature measured 48 cm in length, 35 cm in width, and 13 cm in maximum depth. It contained 13.25 liters of soil. The feature matrix consisted of brown silt with pockets of charcoal. Additionally, a thin bed of charcoal about a centimeter thick was identified at the base of the feature along its eastern section.

Initially, this feature was interpreted as a hearth. However, it contained no thermally altered rock as would be expected if it had been used for heating and cooking purposes. As noted, several small postmolds were associated with Feature 4. Their proximity suggests that low intensity fires occurred within Feature 4; otherwise the posts may have caught fire. In this light, it is suggested that the feature and associated postmolds represent a specialized facility that could have been used to smoke animal hides or various foodstuffs such as fish or meat on a post-constructed rack above the feature. This interpretation best explains the bed of charcoal at the base of the feature, the lack of thermally altered rock, and the postmolds
associated with the feature. Six hundred and eighty-four artifacts were recovered from this feature.

*Feature 5* Feature 5 is a shallow, ovoid basin that consisted of 24 liters of burnt earth and ashy soil. It measured 81 cm in length, 58 cm in width, and 6 cm in depth. Five hundred and twenty-six artifacts were recovered from this feature. Currently the function of this feature remains uncertain.

*Feature 6 and 6B* Feature 6 is a free-standing post-enclosed storage pit. It measured 85 cm in length, 59 cm in maximum width, xx cm in depth, and contained 27 liters of soil. The soil matrix consisted of a dark brown silt loam with charcoal flecking. At the northern margin of the feature, a circular, steep-sided basin measuring 23 cm in diameter and 10 cm in depth was designated as Feature 6B. Since Feature 6B was not apparent in plan prior to excavation, the basin was not identified until the feature was bisected and the eastern half was removed. The homogenous nature of the fill of both Feature 6 and 6B suggest that they are related as opposed to representing overlapping features.

Eleven postmolds are associated with the feature, with three additional intrusive posts. The associated postmolds ranged between four and eight centimeters in diameter and between one and five cm in depth from the base of the Ap horizon. Based on its diameter, the circular basin (Feature 6B) may have been used to hold a globular ceramic vessel within the storage pit.
The feature fill contained a variety of pottery, lithics, flora, and fauna, numbering in excess of 1300 artifacts. Like Feature 2, flora from Feature 6 included hickory nut fragments and possible maize kernels. Fauna included deer, turkey, a couple of turtle carapace fragments, and interestingly, catfish remains and a few fish scales. Based on the contents, Feature 6 may have functioned as a refuse pit after it had been used for storage.

**Feature 7**

Feature 7 is a storage facility comprised of a horseshoe-shaped trench that is lined with at least 32 postmolds along both its interior and exterior. The trench most likely was part of an enclosed, semi-subterranean storage structure. The trench of the feature consists of very dark brown silt with pockets of charcoal while the matrix in the interior is mottled yellowish brown silty clay with dark grayish brown inclusions. The interior is similar in nature to the surrounding B-horizon. Feature 7 is 1.9m in length and 1.6m in width and the interior space enclosed by the trench would have provided a storage area of roughly 1.62m\(^2\).
The trench probably aided in keeping stored goods dry by draining water away from the feature. As for the opening of the facility, it would have been located to the east and down slope. Since the opening is down slope, it is likely that the feature was free-standing. If it had been attached to a house, the water would have drained into a domestic structure.

**Feature 8** Currently, little can be said about Feature 8 except that it appears to be a refuse or storage pit. It is uncertain if it intrudes into Feature 7 or vice-versa, though its placement strongly suggests that it was placed in the entrance way of Feature 7 after that feature was abandoned.

**Artifacts**

At this point, detailed analyses of artifacts have not been conducted. Currently, the assemblage only has been sorted by artifact class. Over 20,000 artifacts have been recovered from the site. Of these, nearly 80% were recovered from unit contexts. The remaining 20% of the artifacts came from features. More concrete information about the site’s ceramic, lithic, bone, and shell industries will be available as more detailed analyses are conducted. In the meantime, some general observations about the artifacts can be shared.
The assemblage is dominated by ceramics and faunal remains. Approximately 38% of the site’s assemblage consists of ceramics. Initial impressions of the nearly 7,500 fragments of pottery suggest that they are heavily dominated by shell-tempered, cord-marked sherds. No other aplastic material has been noted, and plain sherds occur rarely. The assemblage includes vessel bases, body sherds, neck sections, rims, and lugs. A common rim type is a pie-crusted, or scalloped, variety that is common at Middle Monongahela period sites. Additionally, four ceramic smoking pipe fragments have been recovered. A couple of these exhibit intricate decorations in the form of slashes and cord impressions.

Faunal remains comprise about 39% of the assemblage. The 7,600 items includes just over 4,600 pieces of un-burnt bone, 2,800 pieces of calcined bone, and almost 50 fish scales. The majority of the faunal remains appear to be of deer and turkey. Other animals represented include turtle, catfish, possibly elk, a variety of small mammals, and an appreciable amount of fresh water mussel shell.

Lithic artifacts are the third highest occurring artifact type, representing approximately 14% of the site’s assemblage. Lithics include almost 2600 pieces of debitage and 86 tools and
cores. Raw material types are vastly dominated by local types. Local cherts outcrop in the Pennsylvania-aged Monongahela group. This geologic formation is located throughout Washington County, and potential outcrops are located in the general vicinity of the site. Two distinct material types are attributed to the Monongahela group. One is a blocky caramel-colored type that is referred to as Uniontown chert. The second is a bluish-gray cryptocrystalline type that is referred to as Monongahela chert. Both material types occur frequently at Hatfield. Other raw materials represented at the site include glacially-derived cherts such as Onondaga and Gull River, as well as Upper Mercer and Flint Ridge cherts from Ohio. Lithic tools include a variety of triangular points, preforms, bifacially-worked fragments, scrapers, and utilized flakes. Additionally, a couple of Archaic and Woodland period projectile points have been recovered. Fifteen groundstone tools and fragments are also incorporated in the lithic assemblage from the site. They include hammerstones, pitted stones, dicoidals, and fragments of undetermined use.
Eighty-one worked bone artifacts have been recovered. They include both utilitarian and non-utilitarian items. Utilitarian bone artifacts include flakers, awls, and a possible needle. The majority of the worked bone assemblage is comprised of non-utilitarian artifacts, with tubular bird bone beads representing 80% of the worked bone. Other non-utilitarian bone artifacts include a disk bead, imitation elk teeth pendants made from bone, and several teeth pendants. Interestingly, one of these tooth pendants was made from a human premolar.

In terms of ornamental artifacts, a few shell beads have been recovered. They include marginella and columnella types as well as two diminutive disk beads that are similar to disk beads from the Chesapeake Bay region.

Floral remains consist of large amounts of wood charcoal, some carbonized seeds, and various carbonized shell fragments, including hickory. As noted earlier, a hickory shell fragment from Feature 2 produced an AMS radiocarbon date of 545±15 rcy B.P. Also, maize has been tentatively identified in the fill from Feature 2.

**INTERPRETATIONS**

The artifacts and features recovered from Hatfield thus far are distinctive of a village occupation. Furthermore, the data clearly indicates that the site was intensively occupied during the Middle Monongahela period. The limited excavations have not yet revealed the organization of the village. However, based on the types of features encountered, the excavations are most
likely in the midst of the eastern portion of the house ring. Preliminary spatial analyses of the artifact and feature data reveal that there is a strong correlation between the location of subsurface features and the distribution of artifacts within the plow zone. Additional analyses of feature artifacts may reveal relationships between features.

Future excavations will be aimed toward identifying the site’s palisade. This should help determine the relationship of the excavations to the spatial layout of the village. Additional focus will be placed in expanding the excavated area in the hopes of identifying households. Also, test pits will be excavated to define the eastern boundaries of the village. Ultimately, it is hoped that the fieldwork at Hatfield will help estimate the size of the village and help establish the organization of this settlement.

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