THE TOBIN SITE - 36CW27
AN ARCHAIC MANIFESTATION IN NORTHWEST PENNSYLVANIA

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Although strategically located geographically, below the Great Lakes and between New York and Ohio, northwestern Pennsylvania has been largely ignored as a potential area for archaeological exploration. This has been especially true of the Crawford County area. The only work done, prior to 1964, was limited to the efforts of a group of dedicated amateurs, who functioned under the triple handicaps of lack of time, experience and facilities.

Therefore, in 1964, the Alliance College Archaeological Field School was organized for the dual purposes of training students in archaeological field methods and attempting to supply some of the answers to questions of the prehistory of the French Creek Valley. (The Field School was discontinued in 1977, with the cancellation of the Anthropology program.)

In 1960, an amateur reconnaissance party, under the direction of Fred E. Brown, Jr., located a site on the property of Raymond Tobin in Vanango Township, Crawford County, approximately four miles west of Cambridge Springs, Pennsylvania. The surface data collected appeared to give evidence of Archaic occupation and, considering the scarcity of authenticated information on this horizon, it was decided to excavate the location thoroughly. Mr. Tobin generously gave his full permission for the excavation to be carried out to its conclusion, even to the extent of leaving the field out of cultivation for as long as necessary.

The site was accordingly listed as the TOBIN SITE and catalogued by the Archaeological Archives of Western Pennsylvania as 36CW27.

The Tobin site is located on the eastern edge of a large pasture, above the first terrace of the west bank of French Creek. The site is over 250 m. from the creek itself which proposed an immediate question, since it would appear that immediate proximity to water was a logical necessity. However,
detailed stratigraphic examination and soil profiles gave evidence of a layer of alluvial silts, indicating the presence of a moderately large lake, approximately 3.65 m. at its deepest point, on the immediate northern boundary of the site, fed by springs and a now dry small creek.

The occupation site stands on the crest of a small bluff, on what was formerly the beach of the lake. There is ample evidence that the area immediately south of the site was heavily forested; indeed, it was wooded within the memory of persons still living. Extensive test pitting along the southern border of the site revealed no evidence of occupation but an almost continuous pattern of major tree root systems. Existing terminal woodland on the eastern border of the site is mainly birch, aspen and hemlock.

The site runs in a northwest to southeast direction and is 32.91 m. long and 10.05 m wide. The extreme eastern portion of the site was destroyed by the right-of-way of the now abandoned Erie to Meadville interurban railroad. However, post-excavation analysis indicates that any loss was minimal. (Figure 1.)

The soil composition of the area is a light yellow, coarsely textured sand with occasional sporadic deposits of a finely textured yellow clay. There is a superabundance of pebbles, shale and gravel throughout the area. In addition, in the occupied zone, there are vast amounts of fire-cracked sandstone; in some places, the occupation level appears to be paved with sandstone. There is a shallow humus layer of approximately 22 cm. The sandy soil terminates in a layer of bluish-gray gravel, which is completely sterile. This gravel deposit, obviously of glacial origin, occurs at various depths throughout the site, from a minimum of 48 cm. to a maximum of 94 cm. below the surface.

Unfortunately, the soil has a very high level of acidity (pH 5) which, combined with the very high permeation rate of the sandy soil, precluded the recovery of any material of bone, antler or horn.

The site was first surveyed and a base line established along the eastern boundary. Excavation proceeded by means of 5 foot grids. (All linear measurements have been converted to metrics.) All soil removed was carefully screened and examined. All artifactualy related debris, as well as artifacts, were recovered and the amounts recorded.
FEATURES:

Three distinct types of features of particular interest were located on the site:

1. Fired areas of four major variations.
2. Post mold patterns.
3. Pit structures.

FIRED AREAS:

There were four separate types of fired areas on the site:

1. Deep broad basins with large amounts of fired rock and charcoal in situ. (Figure 2, 3, 4abc)
2. Deep steep sided basins with very heavy deposits of charcoal and ash but no evidence of fired rock. (Figure 5a)
3. Shallow fired basins with central deposits of charcoal and ash and a heavily indurated perimeter but with no fired rock in situ. (Figure 6a)
4. Surface fired areas consisting of an irregular area of heavily indurated, bright red soil with charcoal and ash within the matrix but no interior basin or fired rock. (Figure 5b)

There were 85 clearly defined fired areas on the site; 6 of the first type, 7 of the second, 40 of the third and 32 of the fourth. It should be noted that these features were not concentrated on specific stratigraphic levels but were distributed at random intervals between the depths of 30.6 cm and 68.5 cm. from the surface or 41.9 cm. to 68.5 cm. below datum. The majority of the fired areas appeared at an average depth of 45.7 cm. below the surface or 60.9 cm. below datum. Under certain optimum viewing conditions, a thin layer of white ash, 1.2 cm. to 2.5 cm. in thickness was visible at this depth.

The fired areas of the first type were all located in the northwestern portion of the site within a radius of 6-9 m. They ranged in size from 63.5 cm. x 50.8 cm. with 5 rocks in situ to 101.6 cm. x 73.6 cm. with 55 rocks in situ. Interior pit dimensions ranged from 33.0 x 30.4 cm. and 12.7 cm. in depth to 99.0 x 45.7 cm. and 27.9 cm. in depth.

It might be interesting to note, at this time, a unique aspect of one of these features. This particular fire pit
had a sloping ramp of earth built up to the edge of the fire basin. The surface of the ramp showed extensive reddening from heat. It would appear that this might be a sort of labor-saving device, whereby the stones used in stone-boiling, could be placed on top of the ramp and rolled into the firepit as needed. At first, it was believed that this might be the personal pattern of a single individual. But, later, an identical structure, with the rocks in situ on the ramp, was discovered at the Crowe Site (36Cw 39)—approximately 7 miles southwest.

The fired areas of the second type appeared to be strung out in a long line, roughly paralleling the shore of the lake. They were roughly circular in shape, averaging 33 x 45 cm. in diameter and 30 cm. in depth. Several had alternating lenses of charcoal and ash, indicating multiple usage. These lenses could not be discerned in the Type I firepits, but their extremely heavy deposits of charcoal (approximately 2.5 - 7.9 kg.) might well have destroyed such fragile lines of demarcation. In any case, charcoal deposits of such degree would seem to indicate multiple usage.

The third type of fired area was randomly scattered throughout the area. They were irregular ovals or circles, averaging 33 x 45 cm. in diameter and 15 cm. in depth.

The surface fired areas were also scattered at random throughout the site. These features were highly irregular, almost amoeboid in shape, averaging 1.5 m. in length and 91.5 cm in width. They were approximately 7.5-12.5 cm. in thickness; there were no interior basins. Several showed lenses in cross section, again indicating multiple use.

Finally, another unique feature might be mentioned, in the broadest definition of a "fired area." In one grid, a series of overlapping circles of burned earth were uncovered. Cross section examination revealed very shallow basins, approximately 2 cm. in depth. The circles themselves averaged 15 cm. in diameter. It was suggested that these marks were the scars, caused by placing the red-hot rocks, used in stone-boiling, on the ground after they had been removed from the firepit, in order to readjust the grip with the tongs. This suggestion appears to be validated by the presence of a firepit of Type II, within 1 m. In addition, the uncracked sandstone recovered from the firepits are approximately the same size as the fired circles. (As one crew member remarked, "We've just excavated a smoke ring.") (Figure 6b)
POST MOLDS:

The loose sandy soil made the identification and excavation of post molds extremely difficult. There were apparently many post molds which could not be recognized or were destroyed by soil conditions or the overlay of fired area. Considering the large number of fired areas in the northwestern portion of the site, there should logically have been post mold patterns as well. But, direct evidence of many patterns could not be recovered. Post molds less than 7 cm. in diameter simply could not be identified.

This is especially unfortunate since the most important of the post mold patterns which was recovered was the delineation of a complete house pattern, located in the southeastern portion of the site. (Figure 7)

The post mold pattern revealed a structure in the shape of an elongated oval, 5.46 m. in length and 3.55 m in width. The ends of the structure are fully rounded. There is a gap in the pattern along the northeastern wall - 1.04 m. in width - which may logically be assumed to be the door opening.

The pattern consists of 18 recognizable post molds in sequence but, unfortunately, the pattern is incomplete. In one grid, all features were destroyed by extensive rodent burrowing. In a second grid, instead of recognizable post molds, an area of intensively red earth, probably the result of firing, extended in a band from the west wall of the grid to the southeast corner. However, this arc of reddened earth coincided precisely with the post mold lines in the adjoining grids.

The post molds themselves measure from 10.1 to 12.7 cm. in diameter and from 14.1 to 22.8 cm, in depth. The structures showed an inclination of 10-15° from vertical, inclining toward the interior of the structure. The interior matrix is a soft, loosely textured dark soil. It should be noted, that fortunately, this entire pattern was located in a soil with a high clay content, which probably accounts for its preservation.

Two other items of interest should be noted in relation to the house pattern. 1) Although the occupation level uniformly showed great quantities of pebbles and shale throughout the entire site, the floor within the post mold pattern was totally lacking in any sort of rocks or pebbles and had a completely clear sandy surface. The implication may be made that the floor had been deliberately cleared by the inhabitants.
Such clearing of floors has been noted by Ritchie. (Ritchie 1969:96) 2) There is no evidence of any hearth or fired area within the house pattern itself. Considering the foul winter weather of the area, the absence of interior heating (aside from body heat) would seem to predicate summer occupancy.

Another pattern in the northwestern section was a pair of post molds in direct association on either side of a surface fired area. This evidently represents some type of drying rack. Other post molds were uncovered at random but could not be combined into any sort of intelligible patterns.

PITS:

Three unique pit structures were located on the site. The inner matrix of these structures was composed of a uniformly reddish gravelly sand, homogeneous in structure and loose in texture, which contrasted sharply with the surrounding yellow sand. Pebbles and shale were conspicuously absent. These structures averaged 1.34 m. in length, 91.5 cm. in width and 91.5 cm. in depth. The general shape was that of an elongated oval.

Since one pit was fortunately located in two grids, making a cross section possible within the grid wall, it was possible to take soil samples from the interior and exterior of the pit, under conditions which precluded any possibility of contamination. These samples were subjected to intensive infra-red spectrophotometer analysis. The results showed no evidence of any chemical variation between samples, especially in the matter of organic compounds. Since the analysis would have revealed any variance to one part in several million, it may safely be inferred that the samples were identical. This would appear to rule out the possibility that these structures were refuse pits or burials. The inference may logically be drawn that these were earth ovens. This conclusion was strengthened by the fact that each of these pits was in extremely close proximity to one of the major rock-strewn fire pits.

Similar structures were subsequently discovered at the Sonnerheim Site, by Prof. M. Jude Kirkpatrick of Gannon University, Erie, Pennsylvania.

There is one other unique aspect to the site that is worth mentioning..
One season, during an extensive drought, the grass in the entire pasture was burned brown. It was noted, however, that there was a limited amount of greenery in the field, which appeared to be highly localized. On closer inspection, it was disclosed that this vegetation consisted entirely of thistle plants, which remained green despite the drought. Moreover, it was further noted that the thistles were growing ONLY on that part of the field which was PRECISELY within the established boundaries of the occupation area. Similar correlations between archaeological data and floral growth have been recorded at the Angel Site, Newburgh, Indiana. Otherwise, the reason for this botanical oddity is unknown.

**ARTIFACTS:**

Artifact types located on the site included: Expanded base and stemmed points, side notched, corner notched and eared notched points, expanded base and straight drill, blades, stemmed scrapers, large and small retouched scrapers, large numbers of utilized flakes, plano-convex and beveled adzes, pitted stones, hammer stones, abrading stones, a crude un-grooved axe, flat sandstone griddles and a single round steatite sherd.

The following general notations can be made concerning the artifact assemblage of the Tobin Site:

1. All artifacts, regardless of type, were equally distributed throughout the site. There were no distinctive concentrations of a particular sequence of artifacts in a given area. Since most of the artifacts were located below the plow zone, this cannot be attributed to plow action.

2. The distributions of artifacts, artifactual debris and the heaviest concentrations of charcoal and fired sandstone coincided exactly.

3. The heaviest total concentrations of artifacts and artifactual debris were located in the northwestern section of the site, close to the major fired areas and within and directly northeast of the house pattern.

Mineralogical analysis of the artifacts was undertaken by students of the Geology Department of Allegheny College, Meadville, Pennsylvania under the supervision of Dr. William Parsons. The great majority of the artifacts were of local flint and chert. However, several factors of unique interest were disclosed.
Several of the artifacts are of Kanahwa black flint from West Virginia and one from Flint Ridge, Ohio. One point is of basalt. Comparative X-ray defraction of the steatite sherd demonstrated that its point of origin was the St. Lawrence River valley. The beveled adze proved to be of porphytic rhyolite; a mineral not found in western Pennsylvania. However, this particular specimen was of a type of porphytic rhyolite common in the Finger Lakes district of New York State. The Plano-convex adze and ungrooved axe were of "greenstone" of local origin.

RADIO-CARBON DATING:

Regretfully, radio-carbon dates are not available for the site. Charcoal samples were acquired, under sterile conditions, at each of the major firepits and forwarded to a reputable laboratory for processing. Unfortunately, due to the careless error of a laboratory technician, the samples became contaminated and unusable.

ANALYSIS:

The relative scarcity of corroborative information on the Archaic period in this area makes generalized analysis difficult. And the date from the Tobin Site does not yield itself readily to quick interpretation.

The existence of specific assemblages of artifact types appears to demonstrate the presence of at least two separate cultural stimuli.

There is positive evidence of the BREWERTON complex, as demonstrated by the corner-notched, side-notched and eared-notched points and the plano-convex adze. However, in addition, there are the stemmed and expanded base points and the beveled adze, which strongly indicate LAMOKA influence as well. This is strengthened by the results of the mineralogical analysis, which points to definite connections with central and western New York State. (Several artifacts, such as Iroquois triangular points, found at the site, may be regarded as intrusive.) It is to be regretted that conditions prevented the recovery of artifacts of bone, which play such an important role in the Brewerton and Lamoka cultures.

The random distribution of artifacts of all types throughout the site and the fact that there is only one major occupation level would seem to preclude the possibility of occupation of
Therefore, let us consider the following theoretical possibilities:

1. Since the predominant artifacts of the site appear to be those of the Brewerton focus, it would appear likely that the Brewerton culture was the major cultural emphasis in this area during the late Archaic period. The Lamoka elements may be purely intrusive, due simply to the geographical proximity of New York State. However, the idea that both cultures independently occupied the same small location by sheer coincidence seems highly unlikely.

2. A second possibility remains that this represents, in itself, a separate, localized manifestation or phase. It is entirely possible, in that such localized manifestations, drawing cultural items from a variety of sources, were a definitive aspect of the eastern Archaic period, in general.

As Ritchie has stated, "Far from uniform, the northeastern Archaic, like its counterparts in the southeast and the upper Mississippi Valley, displays a surprising variability in its content, reflecting in part, local ecological adaptations, and probably also the inherent dissimilarities of the severally historically diverse traditions involved in its composition, as well as the varying interactions which took place between cultures within and, to a lesser extent, outside this area. This variety, although less well marked among the manifestations of the Laurentian Archaic, imparts a distinctly regional flavor from area to area . . . suggesting territorial distributions of tribal (?) units, analogous with the historic picture of tribal arrangements in the Northeast, although not, of course, directly corresponding thereto." (Ritchie 1969:32)

3. A final and more direct possibility is that the Tobin Site represents a fusion of Lamoka-Brewerton elements, similar to that demonstrated by Ritchie at Frontenac Island. However, the Frontenac phase is of such limited distribution that one hesitates to project such cultural connections. If that possibility were true, it would greatly expand the scope of the Frontenac phase from a highly localized development to a major culture pattern.

However, in a personal communication, Dr. Dolores Elliott of SUNY-Binghamton has informed me that a similar Lamoka-Brewerton fusion appears to have occurred at the Castle Garden Site,
near Binghamton, New York and at the Englebert Site, near Athens, Pennsylvania. Therefore, if such a fusion has occurred at least three times, there is no reason to preclude that it could not happen again.

Obviously, much more data will be required, for northwest Pennsylvania, especially in the matter of comparative assemblages of features, artifacts and time differentials. A limited amount of Brewerton material was uncovered at the Crowe Site, mentioned above and at the Sonnerheim Site, on the shores of Lake Erie. However, neither assemblage has been fully analyzed.

CONCLUSIONS:

Abstract theorizing apart, we can make certain firm statements concerning the specific findings of the Tobin Site:

1. The Tobin Site corroborates the general patterns of Archaic culture in the Northeast: Nomadic hunting and gathering, small band organization, stone boiling, lack of ceramics and horticulture, etc.

2. The evidence of Brewerton occupation in northwestern Pennsylvania is unquestioned at the Tobin Site and has been corroborated by subsequent excavation in nearby localities.

3. The evidence at the Tobin Site also validates the existence of Lamoka cultural occupation without question.

4. This would indicate that there were definite cultural relationships between central and western New York and northwest Pennsylvania during the Late Archaic period. Western New York was not culturally isolated, as has been suggested. The relationships between northwestern Pennsylvania and other geographical areas, such as West Virginia, during this period are more tenuous.

5. It is strongly suggested that the western Pennsylvania Archaic represented a completely different tradition from its counterpart in the eastern portion of the state. The scarcity of steatite and the general artifact patterns seem to indicate few contacts with the east. (Excavations at the O'Connor Site 36Cw60 - have demonstrated a large Susquehanna Broad Point cultural intrusion in the area but the full impact of this material remains to be analyzed. In any event, it has no
connection with the Tobin Site.) It is probable that, in general, the central mountain areas served as a very effective barrier to most communication between east and west, whereas contacts with New York were more easily established.

6. Since the house pattern at the Tobin Site, does not conform to the house patterns, uncovered by Ritchie at Lamoka Lake, the logical inference is that this is a house pattern of the Brewerton focus. Since, to the writer's knowledge, no house pattern of the Brewerton people has been recorded to date, this discovery should add to our knowledge of the settlement patterns of these people.

7. Since no house patterns were uncovered at Frontenac Island, the alternative suggestion is that this is the style of the Frontenac house. However, Ritchie does not feel that the Frontenac Islanders were well housed. "Probably flimsy bark or rush covered shelters were sufficient." (Ritchie: 1969:113)

To summarize, the Tobin Site represents a summer camp site of a small band or extended family group of the Brewerton or closely related culture of the Late Archaic period. (Figure 8).

BIBLIOGRAPHY

Ritchie, William A.
1969 THE ARCHAEOLOGY OF NEW YORK STATE. Natural History Press
FEATURE DATA MAP - Tobin Site - 36CW27
Stratigraphic Level 2-45.75m E. Jenkins

- Filled Area with Charcoal
- Surface Fire
- Lake Boundary
- Pit
- Shallow Filled Basin
- Post Hole

Fig. 1.
Figure 4

Recorded by: Recorder

Horizontal Floor Plan

Vertical X-section - On East Hall

Free Area - Grid 45C

Feature No. 55A

1851 Site (36 C37)

August 1, 1967
Feature No: 44 A8
Tobin Site 136 (W27)
July 25, 1969

Fig. 5(a)
5(b)
Post Hole Series
Tobin Site (66 CH 27)
July - September 1967

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Fig. 7