

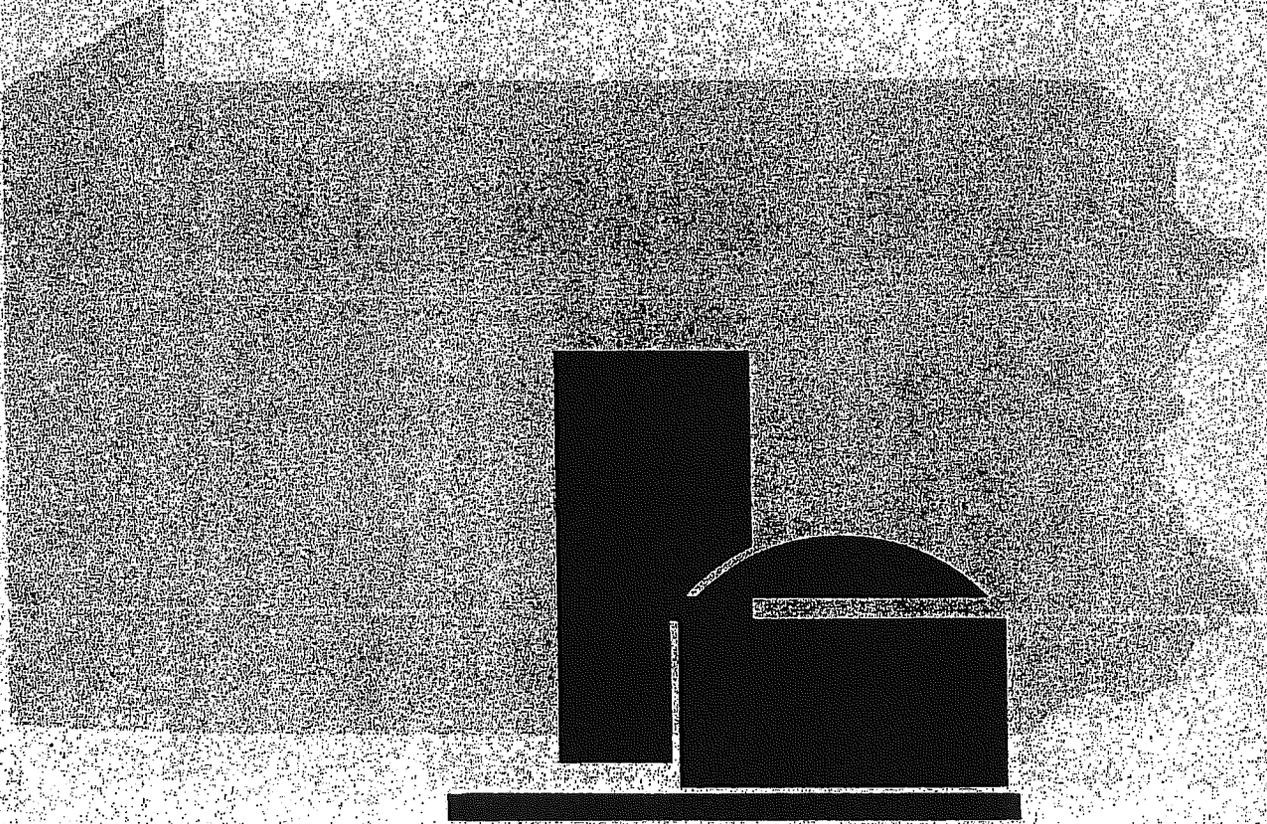
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IRA F. SMITH, III  
WILLIAM PENN MEMORIAL MUSEUM  
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# EARLY AND MIDDLE WOODLAND CAMPSITES ON THREE MILE ISLAND, DAUPHIN COUNTY, PENNSYLVANIA



by Ira F. Smith III

PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION  
WILLIAM PENN MEMORIAL MUSEUM

EARLY AND MIDDLE WOODLAND CAMPSITES  
ON THREE MILE ISLAND, DAUPHIN COUNTY, PENNSYLVANIA

by

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## ABSTRACT

Archaeological investigation in 1967 at Three Mile Island, Dauphin County, Pennsylvania revealed in situ evidence of Early and Middle Woodland occupation in the Lower Susquehanna River Valley. A number of sites on the island were tested. Site 36 Da 50 was excavated and produced a rich inventory of lithic and ceramic artifacts.

Eight types of pottery, 8 categories of projectile points, 10 types of flake tools, and 4 classes of bifacially prepared knives are described. The vertical distribution of projectile points and ceramics within a confined stratigraphic context provides some information regarding temporal relationships. The types and relative quantities of lithic artifacts, as well as, the horizontal distribution of ceramic artifacts suggests that Three Mile Island was occupied intermittently by small groups of Early and Middle Woodland peoples utilizing a local fish or animal resource.

The Three Mile Island site (36 Da 50) is indicative of open floodplain or island campsites. Other Early and Middle Woodland sites located throughout the Susquehanna Valley are grouped into five categories--rock shelters (unmodified), rock shelters (modified), open sites, cremation site, and possible semisubterranean houses --and described in the final section of this report.

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## THREE MILE ISLAND SITE (36 Da 50)

### Introduction

The skyline at Three Mile Island is today dominated by gracefully engineered steel and concrete cooling towers associated with a massive nuclear power facility. Controversy continues to rage over the possibility of radiation leakage with its threat to human life and property, and over the effects of the formation of vapor clouds on the visibility of jet pilots as they maneuver for their final approach to the Harrisburg International Airport.

This was not always the case. No controversy existed two or three thousand years ago when the hunters and fishermen of the Early and Middle Woodland cultures established temporary camps at the head of the island. There were no sounds of speeding motorboats, clanking machinery, or the blare of loudspeakers, only the peaceful sounds of nature.

The Metropolitan Edison Company in developing and creating the Three Mile Island complex made every effort to cooperate with concerned environmental and historical groups. Long before the establishment of State Offices of Historic Preservation or the need for Environmental Impact Statements, the Pennsylvania Historical and Museum Commission requested and received from the electric company a grant to examine prehistoric remains on the island and to obtain a sample sufficient to be able to reconstruct its culture history (Kent 1967).

Prior to the acquisition of the land by the electric company, the once intensively cultivated island fields were permitted to lie fallow. Quickly the wild vegetation began to encroach upon these idle fields. When

the Pennsylvania Historical and Museum Commission became aware of the project, the land had already become so dense with vegetation that visual surface survey was impossible.

This condition required the project personnel to rely upon the amateur archaeologist to define areas where prehistoric cultural material had been collected in the past. It was significant and gratifying that the various informants specified the same areas. The remains of early occupations were concentrated in eight "hot spots" on the central ridges and along the edges of the island. Trenches were bulldozed in five areas; two areas remained unexplored; and one area was trenched by the Susquehanna Chapter of the Society for Pennsylvania Archaeology, Inc.

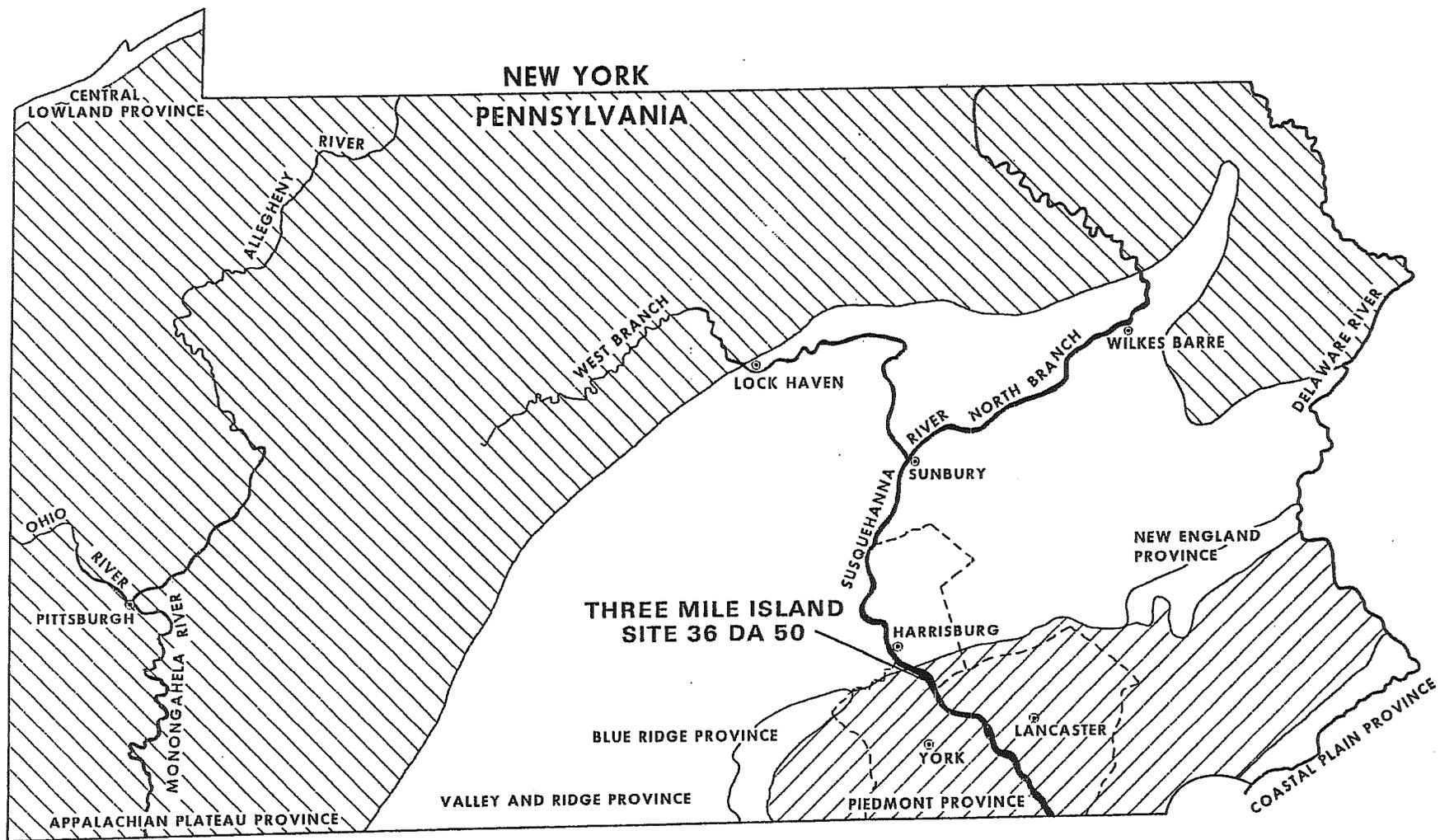
Preliminary explorations in these areas proved unproductive. Erosion had eliminated most of the habitation zones leaving only disturbed and mixed surface debris. Easily differentiated natural stratigraphy and features were practically nonexistent. One site, the Three Mile Island site (36 Da 50), finally provided sufficient evidence to be selected as the most likely candidate to produce enough information upon excavation to permit the reconstruction of a local culture sequence.

#### Location and Geology

Three Mile Island is a low relief land mass in the Lower Susquehanna River Valley situated approximately 10 miles southeast of Harrisburg in Londonderry Township, Dauphin County, Pennsylvania. The island is only 2.5 miles north of the southern tip of Dauphin County where Dauphin, Lancaster, and York Counties converge. It is about 300 yards from the east bank of the river and over one mile from the western York County shore (Fig. 1).

Figure 1. Project Area in Relation to the Physiographic Provinces of Pennsylvania.

The Physiographic Provinces of Pennsylvania from west to east include: Central Lowland Province, Appalachian Plateau Province, Valley and Ridge Province, Blue Ridge Province, Piedmont Province, New England Province, and Coastal Plain Province.



Presently the island is surrounded by a man-made pond created by the impounded waters behind the York Haven Hydroelectric Dam. This pond provides one of the many focal points for aquatic recreation in the lower valley that has so altered the physical, cultural, and biotic environments of that part of Pennsylvania. Curiously, though, the physical conditions immediately surrounding Three Mile Island are in all likelihood not much different from what they were in prehistoric times. Long before human penetration into this region an intrusive diabase dike pierced the surface of the earth in the area of the southern part of the island. This igneous formation formed a natural dam which, like the York Haven Dam today, would have caused slow moving deep water conditions along the western periphery of the island. The river waters flowing over the diabase outcrop to the east probably formed a series of shallow, easily fished rapids (Fig. 2).

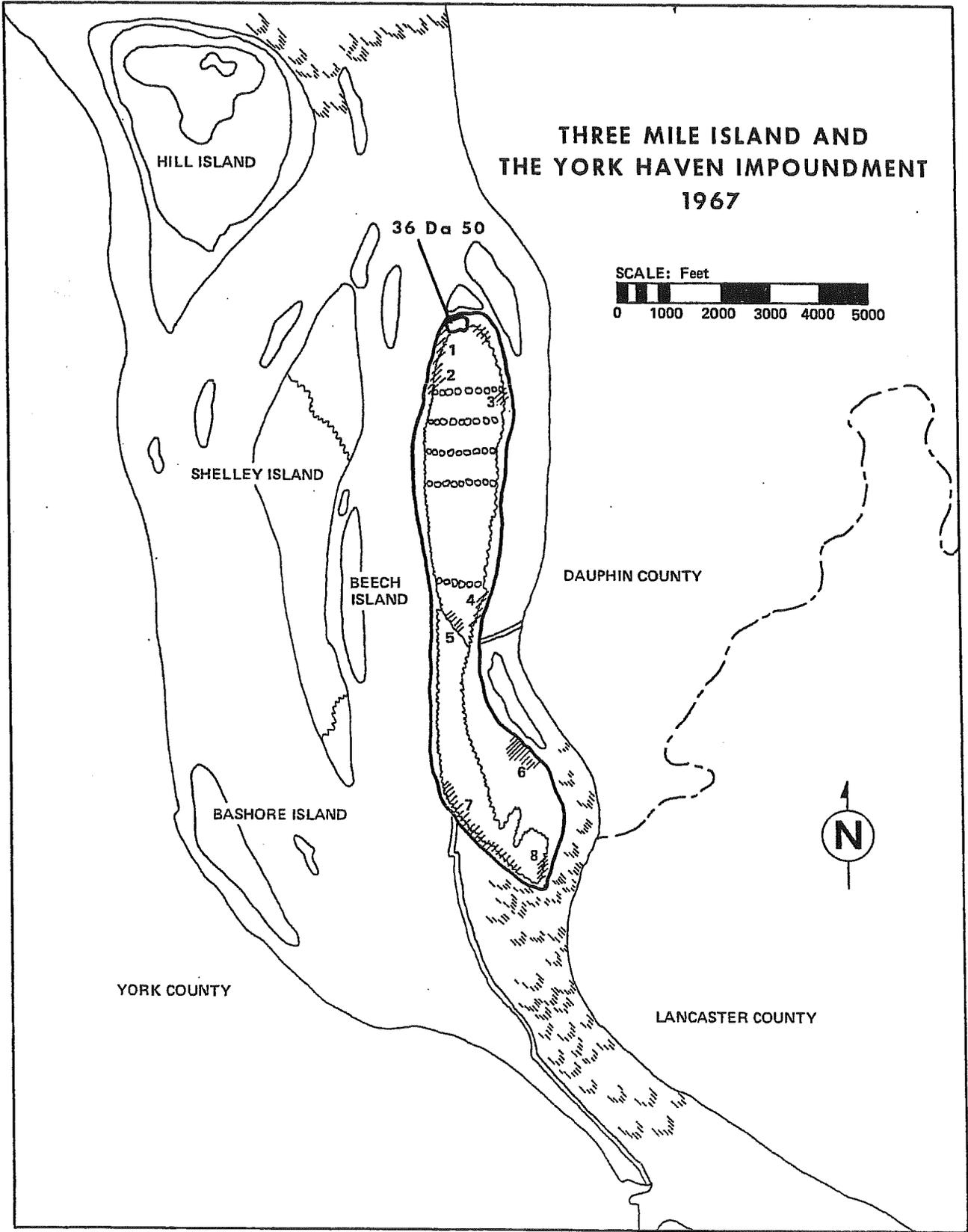
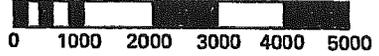
Three Mile Island is composed chiefly of water deposited sands and gravels resting on extensive deposits of sedimentary sandstones, siltstones, and clays of Triassic Age. The island, which has undergone extensive erosion in the last 10,000 years, has a soil covering varying from six feet to 30 feet.

Since Triassic deposition, the whole area of the Lower Susquehanna Valley has undergone a general period of erosion with little significant tectonic activity, interrupted only by very brief periods of intrusive igneous activity. It wasn't until Pleistocene times that the area was again subjected to a depositional history of any importance. It was, in fact, the glacial-fluvial deposition of the Pleistocene that was responsible for the creation of Three Mile Island even though no glaciers reached that far to the south.



# THREE MILE ISLAND AND THE YORK HAVEN IMPOUNDMENT 1967

SCALE: Feet



The slowing of the debris-choked river waters by an east-west diabase dike at Hill Island north of Three Mile Island, a change in direction of flow at that point, and subsequent widening of the basin as the waters cut into the soft Triassic sediments below the dike created an environment in which the suspended debris of the glacial outwash river was deposited. Large boulders were the first items to be left behind in the low velocity area below the dike. These, in turn, became the nuclei for the deposition of smaller particles. Three Mile Island grew out of two such boulder nuclei that had collected increasing amounts of suspended debris. A low velocity area formed between the two growing masses of land. Smaller materials accumulated in this area causing the independent masses to join into a single island mass. (A more detailed discussion of the geology of the area and the depositional history of the island can be found in Appendix 2A-3, "Engineering Geology and Foundation Considerations", Preliminary Safety Analysis Report, Metropolitan Edison Company).

#### Problem and Objectives

The announcement by the Metropolitan Edison Company of its intent to disrupt nature's ecological balances at Three Mile Island was the impetus for the Pennsylvania Historical and Museum Commission to become involved. At first, the Company indicated that it would excavate the central portion of the island to create a holding pond for hot water produced by the proposed nuclear reactors. Later this plan was abandoned in favor of erecting several large above ground cooling towers.

The purpose of the investigation was quite simply to define the archaeological resources at Three Mile Island before they were destroyed. It was already established that prehistoric cultural materials had been recovered from the plowed fields, but no sites were recorded and no professional excavations had been conducted.

The primary archaeological objectives were (1) to find and record the locations of archaeological sites, particularly in the central portion of the island; (2) to test these sites to determine their nature and importance; and (3) to locate at least one site that could be extensively excavated and that would provide information on the deposits, cultural associations, and generally the culture history of the area.

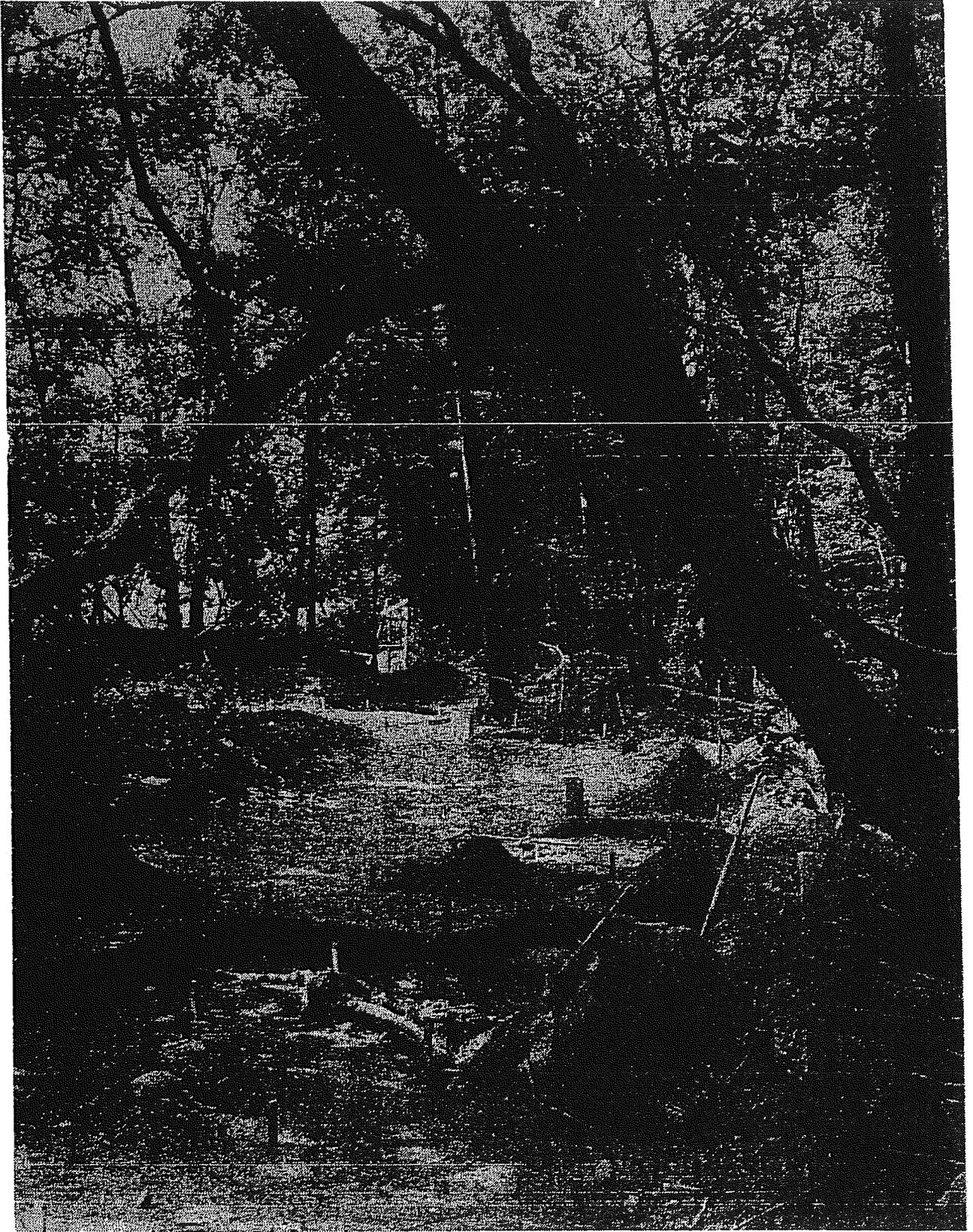
#### Methods

The Three Mile Island site located at the northwest corner of the island was the most productive site discovered while surveying and excavating for six weeks in 1967.

A bulldozer was used to clear three trenches through the secondary tree growth, dense underbrush, and shoulder high poison ivy (Fig. 3). The recent humus accumulation was removed and three college students cleaned and flatshovelled the exposed subsoil surface. The cleared area was surveyed into five foot square units each of which was identified by the southwest corner stake. Forty-nine squares or approximately 1225 square feet were excavated by the more conventional hand methods. The squares were stripped in six inch arbitrary levels to an average depth of 25 inches below the ground surface.

Datum was marked by a nail embedded in concrete and established on the retaining wall of the eastern extension of the York Haven Dam. From





this point a true north-south line with an eight degree declination was surveyed 5080 feet to Station 20, designated by a metal pipe that is presently under the main power complex. Station 25 (Square N10E340) was located 1011 feet north of Station 20 and 340 feet east of the north-south line.

### Artifacts

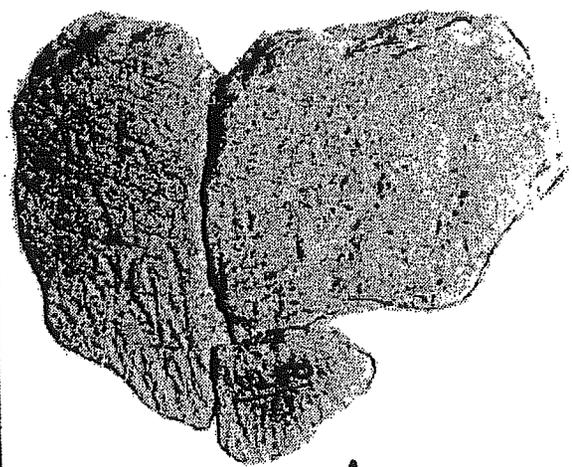
#### Ceramics

It should be mentioned by way of introduction to this section that the ceramic sample from the Three Mile Island site is not impressive. Much of the collection is highly fragmented and there is a noticeable absence of instructive rim and neck sherds.

It should also be pointed out that the sample has been both mechanically and statistically manipulated to yield the most significant results, and that this was done to clarify not to invent a meaningful cultural sequence for the island. The sample was segregated into eight major pottery groups based upon the common visual sorting criteria of temper, form, and decoration (Fig. 4). These groups were then sorted for both vertical and horizontal interpretation within the site.

Sorting along a vertical axis first by relative sherd count, and supplemented by percent popularity distributions between levels, permitted the construction of a preliminary temporal sequence (Fig. 5). The various groups in the following section are arranged from earliest to latest as shown by this sorting. The positioning of certain of the lesser groups (e.g. Susquehanna Cordmarked-like Groups) is not particularly significant and may not represent a true picture. Type names associated with the different

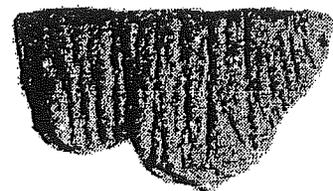




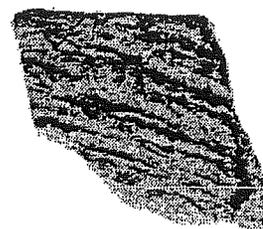
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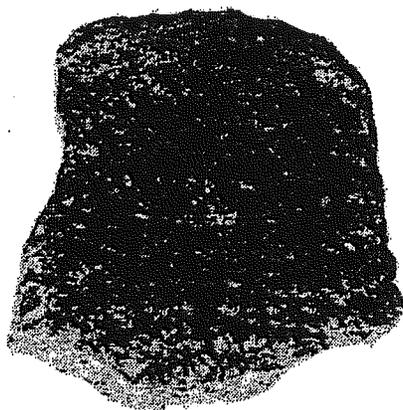
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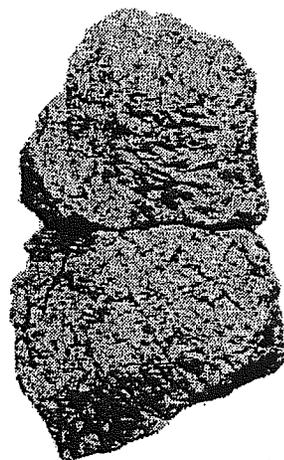
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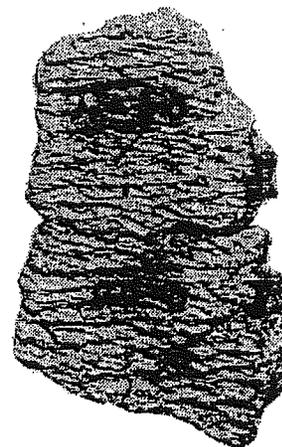
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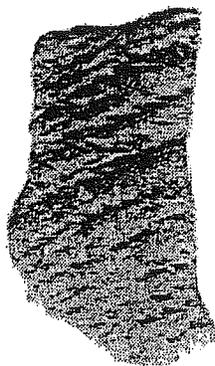
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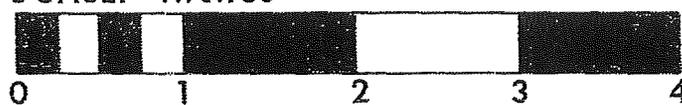


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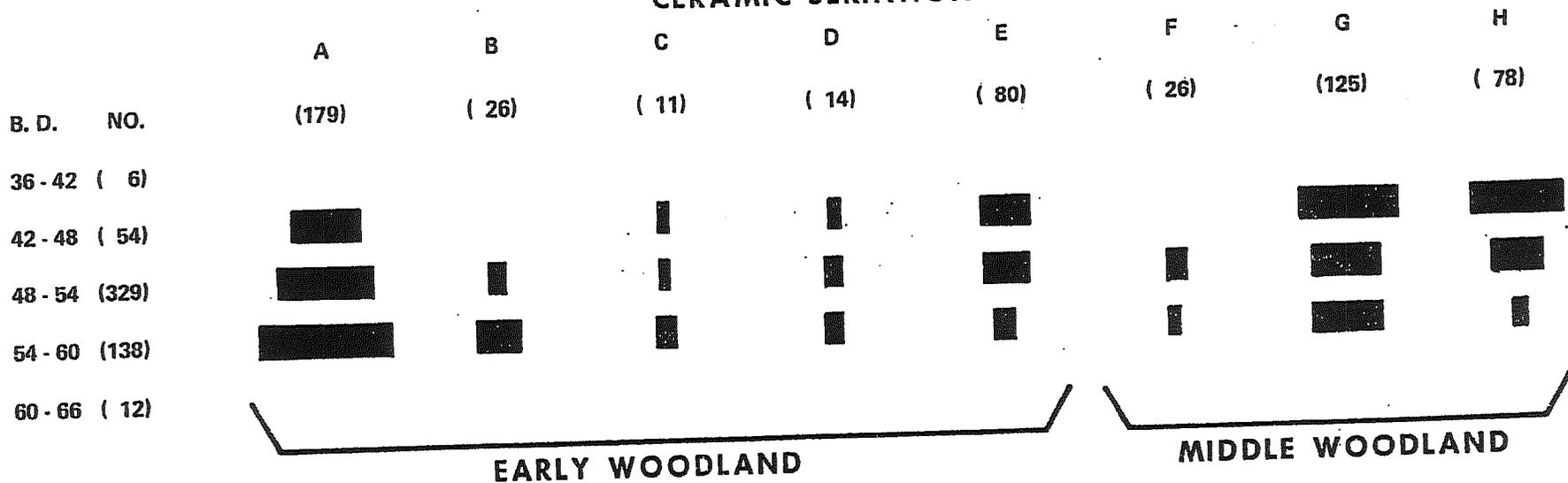
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SCALE: Inches

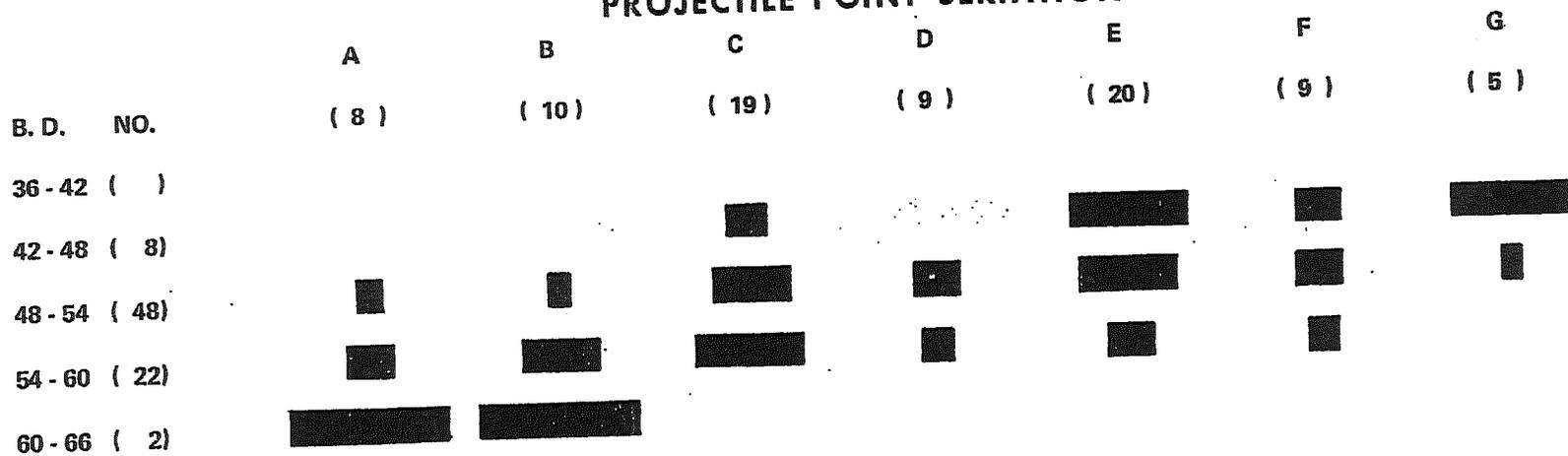




### CERAMIC SERIATION



### PROJECTILE POINT SERIATION



groups have previously been established in the literature (Smith 1970a, 1971, 1974).

The earliest pottery at the site is steatite-tempered Marcey Creek Plain (Manson 1948: 225), a type traditionally considered to date to the Transitional period (2000 B.C. - 1000 B.C.). Only three sherds representing a minor occurrence were recovered, and each had a small amount of pulverized gneiss mixed with the steatite temper.

#### Light Plain

This pottery type has a wide distribution throughout the Lower Susquehanna Valley south of the Juniata River and was represented at the Three Mile Island site by approximately 200 sherds. Its closest relative seems to be the type "Ware Plain" described from the Ware site, Salem County, New Jersey (McCann 1950: 316-317).

Light Plain is a thick, crudely constructed pottery which when held in the hand feels rough and dirty, but not particularly sandy. It is manufactured from local clays mixed with crushed rock other than steatite. In this case, the temper is composed of irregular and protruding particles of gneiss accompanied by occasional fragments of biotite mica. The density of temper gives the sherds a distinctive speckled appearance. The exterior surfaces are unevenly smoothed; the interiors are always smoothed and sometimes wiped. One variation at the site exhibits faint exterior cordmarking and has been previously described as Light Plain var. Exterior Cordmarked (Smith 1970a: 30-32, 1974: 10-11). Tans, buffs, and occasional light reds are common exterior colors, while the interiors range from the buffs through dark grays to black.

The sherds are associated with a flat-bottomed, straight-sided, lug-handled form of vessel. A restorable example of this type was discovered by Frank Mishenko at the Light site (36 Da 4) on the Dauphin County shore opposite the northern end of Three Mile Island (Fig. 6). Eighty percent of the sample of Light Plain from the Three Mile Island site was confined to Section A of the excavation. The remaining 20 percent was widely distributed throughout the area.

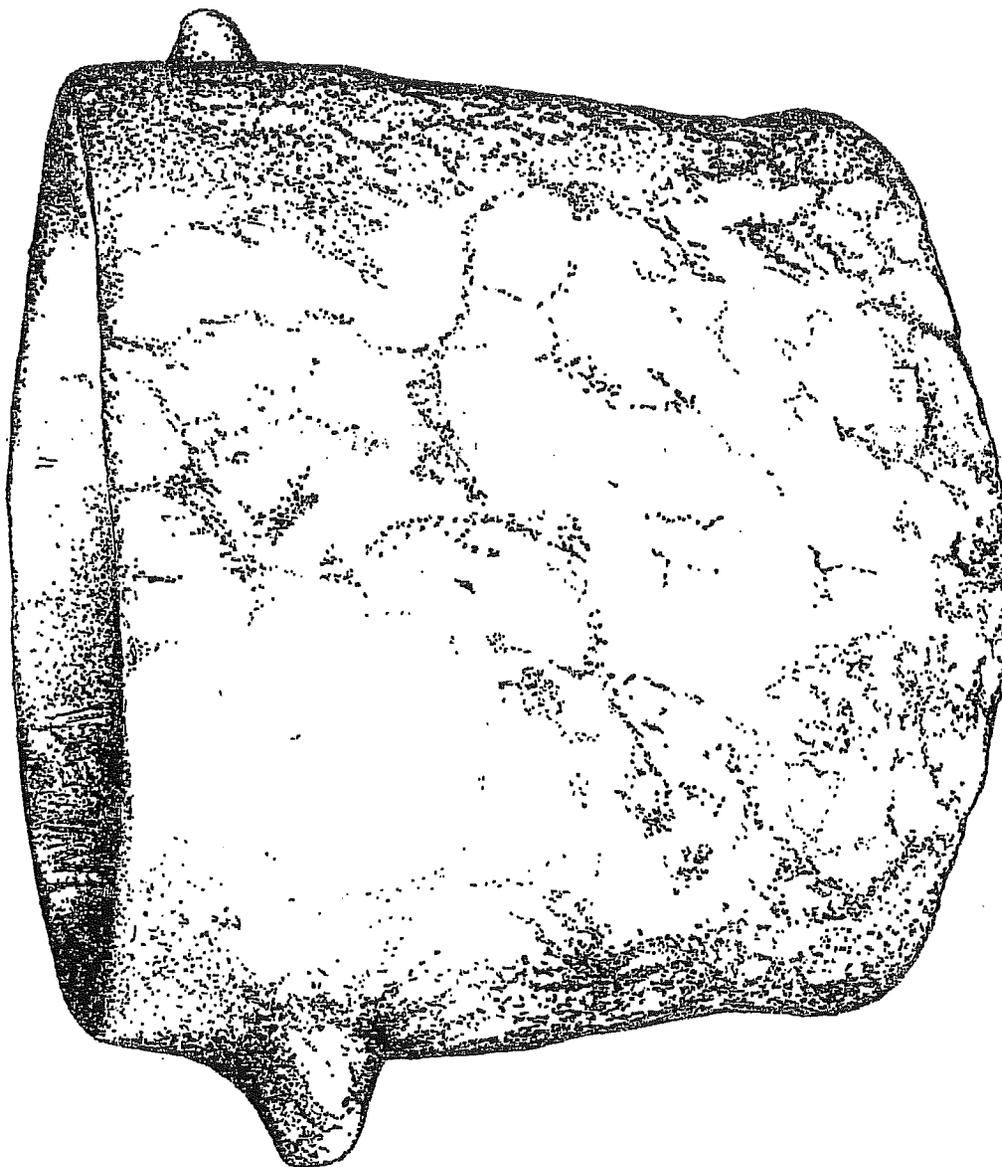
#### Susquehanna Cordmarked-like A

This sample is composed of 26 pottery sherds representing two different vessels. At first glance the sherds exhibit a marked similarity to Susquehanna Cordmarked (Smith 1970a: 42-44, 1974: 17-19). The fact that they resemble what is believed to be a Middle Woodland type, but appear to be ordered between two pottery groups thought to bracket the Early Woodland period at the Three Mile Island site, suggests one of several alternatives: (1) that the positioning of the sample with relationship to the other pottery groups has been affected by the fact that the sample is small and tightly clustered spatially; (2) that Pope's Creek Net Impressed (to be discussed) occurs in the Middle Woodland period rather than the Early Woodland period at this site, and that these sherds represent a Middle Woodland type; or (3) that certain varieties of Susquehanna Cordmarked had their incipient developmental stages in the Early Woodland period.

The pottery is relatively thin and light weight, coiled, and well-malleated. Temper consists of fine particles of a brown iron-like substance and other admixed materials such as gneiss and sand. The exterior is distinctly and deeply cordmarked with widely spaced cords. The interior is also cordmarked. However, the clay between the cords is characteristically

Figure 6. Restored Light Plain Pottery Vessel.

This pottery vessel was found by Frank Mishenko at the Light site (36 Da 4), Dauphin County, Pennsylvania. It was donated to the William Penn Memorial Museum where it was restored. The lug handles are hypothetical. Height 9 1/4", diameter 10 1/2" by 8 3/4". One-half actual size.



squashed flat. The color of the entire sherd ranges from tan to light red with an occasional gray interior surface. With the exception of one specimen, the sample was confined to an area measuring 10 feet by 15 feet in Section A of the excavation (Fig. 7).

#### Susquehanna Cordmarked-like B

There are 11 sherds representing two pots in this sample. The most comparable examples in the literature are Stephenson's Miscellaneous Group D (Stephenson, Ferguson, and Ferguson 1963: 127) and Susquehanna Cordmarked (Smith 1970a: 42-44). Once again the specimens resemble a Middle Woodland type but occur at the Three Mile Island site in what appears to be an Early Woodland context. The pottery has partially obliterated, occasionally completely obliterated, interior cordmarking and has regular exterior cordmarking.

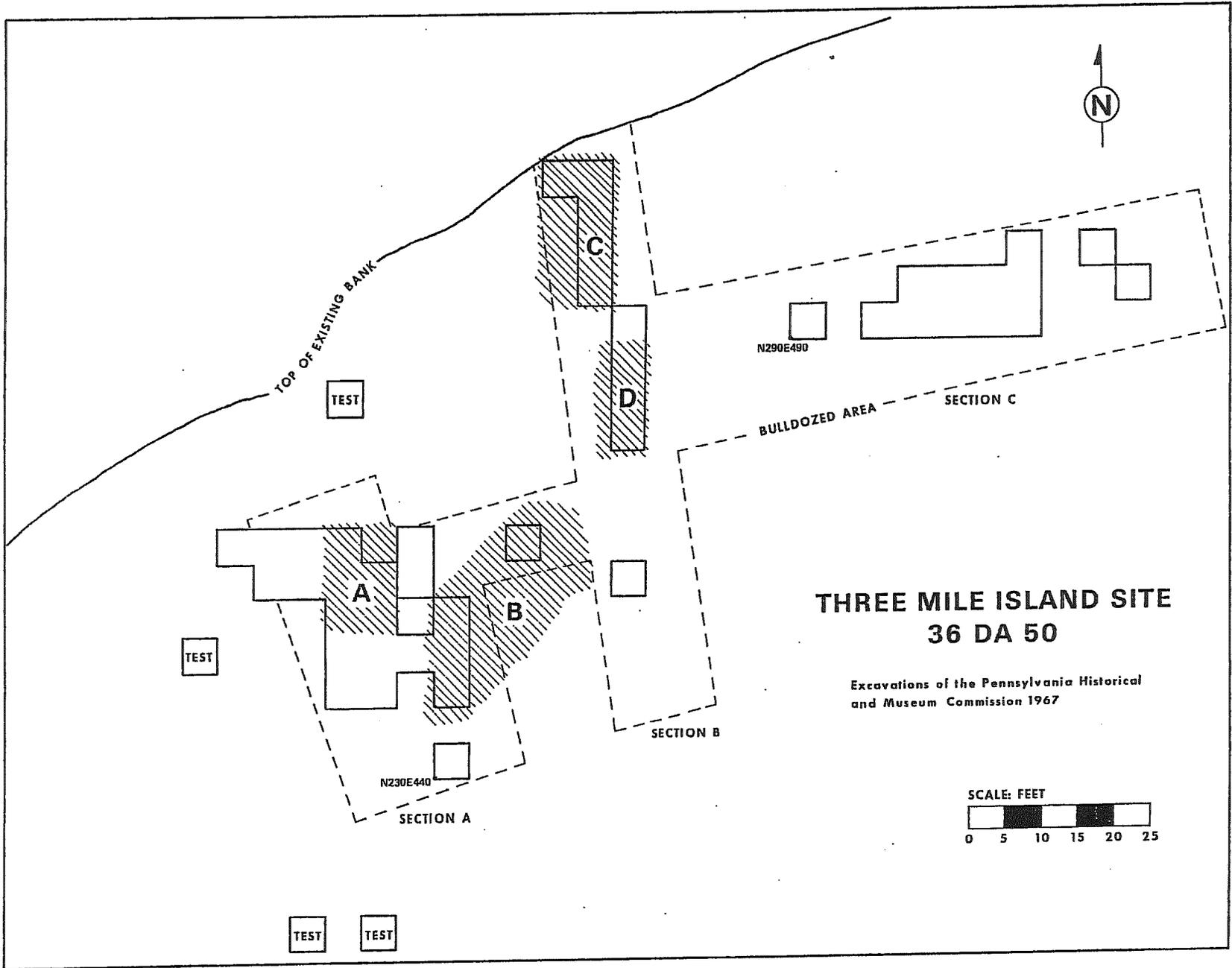
The sample consists of fairly well-malleated and coiled pottery. Specimens are characterized by a glittering appearance given them by temper consisting of mica and small amounts of angular quartz and sand. A sandy texture is characteristic. The exterior is cordmarked vertically or slightly obliquely to the rim with evenly spaced two strand cord. The interior is horizontally cordmarked with the clay ridges between the cord impressions squashed flat. Both the interior and the exterior are buff or gray to yellow in color. Approximately 90 percent of the sample was located in a 25 foot by 15 foot area in Section A of the excavation.

#### Light Plain var. Interior-Exterior Cordmarked

There are 14 sherds from three pots in this sample. It is apparent that the pottery is a variation of Light Plain. Its distribution within the site was similar to that of Light Plain with about 71 percent of the

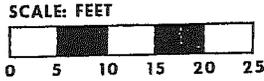
Figure 7. Horizontal Distribution of Certain Ceramic Types at the  
Three Mile Island Site.

A, Susquehanna Cordmarked-like A; B, Susquehanna Cordmarked-like B;  
C, Miscellaneous Interior-Exterior Cordmarked; D, Clemsons Island  
Cordmarked (59% of sample).



**THREE MILE ISLAND SITE  
36 DA 50**

Excavations of the Pennsylvania Historical  
and Museum Commission 1967



TEST TEST

sample confined to Section A. The only reason for making a distinction between the two is that the sherds of this type are of the interior-exterior cordmarked tradition and in this respect are similar to the two groups mentioned previously.

The temper is gneiss. Cordmarking on the exterior lies obliquely to a straight rim, while that on the interior is horizontal to the rim. The coloring approximates that of Light Plain with tans and reds predominating.

#### Pope's Creek Net Impressed

This group of ceramics closely resembles the pottery known as "Pope's Creek Net Impressed" which is thought to date to the Early Woodland period (Stephenson, Ferguson, and Ferguson 1963: 94-96; Gardner and McNett 1971: 45). Eighty fragments representing from three to five pots were recovered. The pottery is tempered with sand and small amounts of conglomerate quartz. The exteriors are characteristically brick red to brown and clearly impressed with a medium mesh net. The interiors are a darker red, sometimes black, and smoothed.

One variation differs from the principle type in that: (1) the exterior color is gray to almost black; (2) the interior surfaces show scoring; and (3) a double row of punctates decorates the lip of the vessel.

Sherds of this group exhibited less horizontal unity within the site than the previous types. Section A contained 50 percent of the sample and Section B contained 40 percent of the sample.

#### Miscellaneous Interior-Exterior Cordmarked

Twenty-six sherds in this group constitute one broken pot. This

pottery is fairly common on campsites in the Lower Susquehanna and belongs to the interior-exterior cordmarked tradition. As with the previously discussed groups, it is quite distinctive from the classic interior-exterior cordmarked Vinette 1 pottery. It even differs from the Vinette 1 variations found throughout southern Pennsylvania (Kinsey 1958: 5; Michels and Smith 1967: 468-469).

Pottery of this description has been found at the Erb Rock Shelter in Lancaster County where it was considered to date to the Middle Woodland period (Kent and Packard 1969: 37). It also resembles the miscellaneous interior-exterior cordmarked sherds from the Townsend site in Delaware (Blaker 1963: 23).

The thick pottery is made by coiling. No temper is visible. A few soft, white, lime-like inclusions suggest the possibility of crushed sherd temper. The clay is loosely packed with drying cracks visible on both surfaces. The exterior is light in color and gives the appearance of a highly weathered surface which suggests that there may have been distinct fabric or cord impressions at one time. The interior is black and distinctly and deeply cordmarked. The entire sample clustered in a 20 foot by 10 foot area in Section B.

#### Accokeek Cordmarked

This group is represented by 125 sherds from an undetermined number of vessels. There are six varieties which conform in most attributes to the "Accokeek Cordmarked" type (Stephenson, Ferguson, and Ferguson 1963: 98-100). Generally the variations exhibit the following basic Accokeek Cordmarked characteristics: coiled and paddle malleated, compact paste with sand temper combined or replaced with other local tempers, sandy

texture, exterior surface ranging in color from red, brown, to gray-brown and randomly cordmarked, interior color basically the same as the exterior while the surface is smoothed.

The first variation, tempered with sand and angular quartz fragments, conforms to Stephenson's criteria. The second variation is the same as the first except that the temper is sand with gneiss inclusions. Variation three is the same as variation two, except that anvil flattened cord impressions are visible on the interior surfaces. The next variation is the same as the first except that the temper contains brown iron-like inclusions and the sherds are more rusty-brown in color. The last variation conforms essentially to the first except that there is no visible temper.

Stephenson has defined a Miscellaneous Group B pottery which he indicates differs from classic Accokeek Cordmarked in that it is crudely made, poorly fired, and has a heterogeneous temper. The use of locally available tempers in a pottery, the concept of which was foreign to the area, is a common occurrence in the southern part of Pennsylvania. At the Erb Rock Shelter, for example, what was reported as Accokeek Cordmarked pottery was tempered with gneiss (Kent and Packard 1969: 35).

The horizontal distribution of the varieties throughout Sections A and B of the excavation is not instructive. However, the fact that there are numerous minor variations may be as important to the analysis of social units as the isolated concentrations of the various types of interior-exterior cordmarked pottery.

#### Clemsons Island Cordmarked

Five or six vessels are suggested by the 78 sherds in this sample. There is very little question that the pottery belongs to what has been

collectively called the "Clemsons Island" type (Jones 1931: 95; Michels and Smith 1967: 471-475; Lucy 1959: 32).

With the exception of one variation which is tempered with gray chert, the majority of the sample is tempered with conglomerate quartz. The pottery is coarse, rough, and friable. The exterior surface is cordmarked or fabric impressed, while the interior is smooth. The color ranges from gray to tan with an occasional black interior. Punctations from the exterior to form interior nodes occur just below a straight rim.

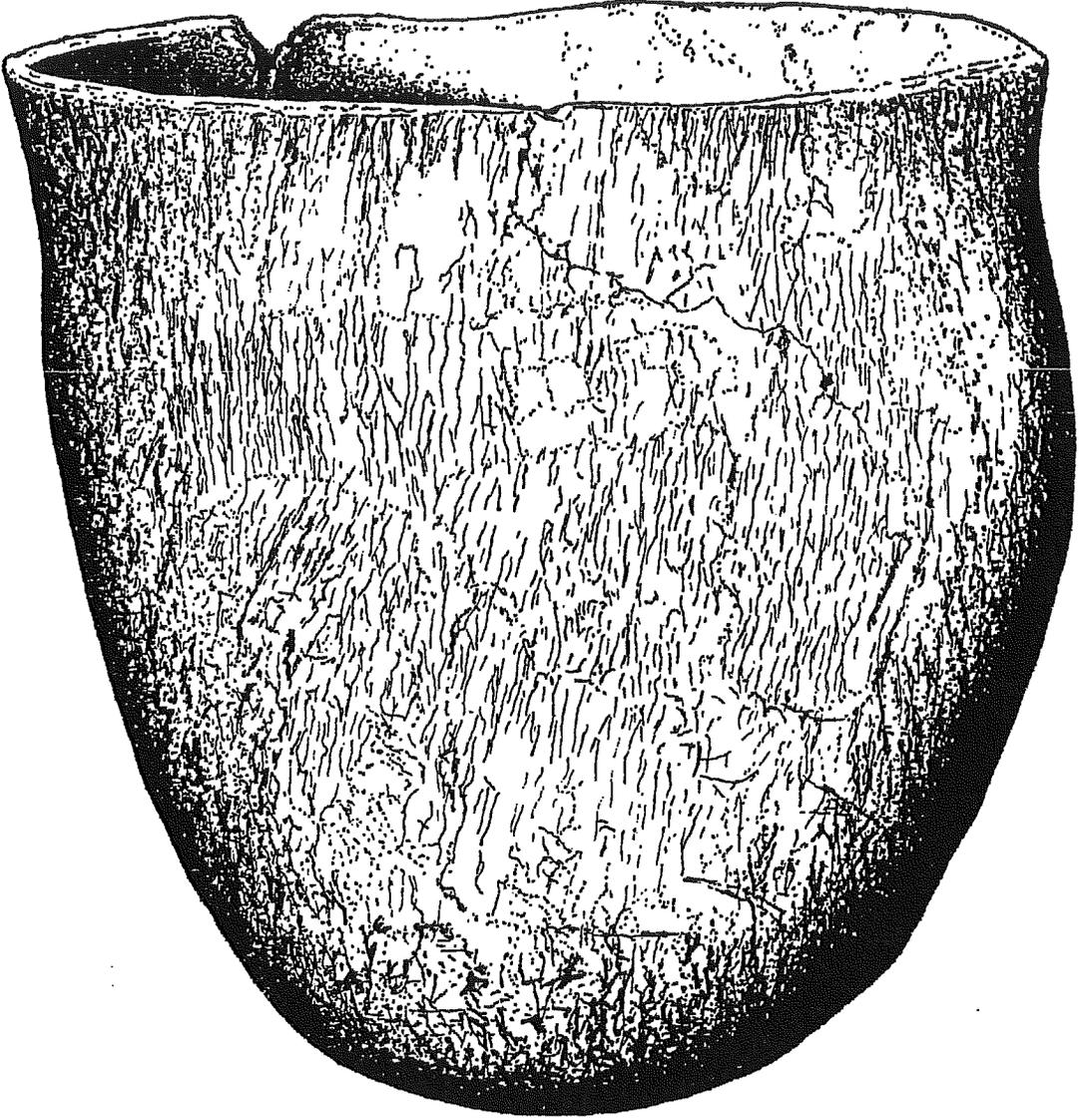
The pottery was scattered over much of the site suggesting that there were a number of small camps at different times. One camp was defined in Section B where 59 percent of the sample occurred in an area measuring 5 by 15 feet.

A single shattered pottery vessel found eroding out of the sediments at the southern end of the island exhibits Clemsons Island type characteristics except that it lacks the rim punctations (Fig. 8). It is difficult to distinguish this pot from many of the more simplistic Middle Woodland vessels found in Pennsylvania. If we were to consider some of the more elaborate everted rim varieties of Clemsons Island pottery found at the Sheep Rock Shelter (Michels and Smith 1967: 473-475), it is not difficult to picture the straight and/or slightly everted rim vessels, with or without punctations, as representing an early variety of the Clemsons Island type. Perhaps one could go so far as to project this variety into the latter part of the Middle Woodland period.

#### Miscellaneous

Due to the extremely fragmented nature of much of the pottery and the fact that most of the sherds are bodysherds, there are approximately 68 specimens which cannot be ascribed to any particular group.





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There are also 7 sherds of Shenks Ferry pottery; 2 small fiber-tempered bodysherds; 1 dentate-stamped neck sherd; and 3 miscellaneous net-impressed sherds that are neither Pope's Creek Net Impressed nor Middle Woodland Mockley Net Impressed.

Finally, there are 32 fragments that show a high proportion of small granular quartz temper and some very faint markings which may be drag punctates. It is possible that this material belongs to the Owasco tradition. The group exhibits no vertical or horizontal stratigraphic integrity.

#### Lithics: Projectile Points

A number of projectile points manufactured from argillite<sup>1</sup> and rhyolite were typologically identified as dating to the Archaic period. These consist of a small series of bifurcate base or notched base forms and stemmed forms. The latter generally have straight to convex bases, are large in size, and crudely fashioned. Most of the remaining points can, with a certain degree of validity, be attributed to periods more recent than the Archaic. These points have been classified into the

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<sup>1</sup>The material referred to as argillite in this paper is what most Pennsylvania archaeologists call argillite. However, according to J. Douglas Glaeser of the Pennsylvania Geological Survey, true argillite does not occur naturally in the Lower Susquehanna River Valley. What is found at Three Mile Island is metamorphosed silt. That is, a silt which has solidified after coming into contact with the heated intrusive dikes to the north and south of the island.

eight categories that are arranged in the following sections beginning with what is believed to represent the earliest type (Figs. 5, 9, 10).

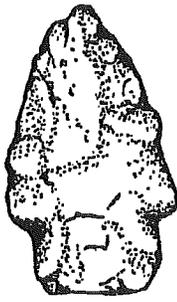
#### Calvert-like Points

The points in this group are stylistically similar to the "Calvert Points" found at the Accokeek Creek site in Maryland. Generally this type is considered to characterize the Archaic time period in the Lower Susquehanna Valley. However, since it is found at the Three Mile Island site associated with so many post-Archaic forms, and since Stephenson considers his Calvert point to be post-Archaic in date, the type should be mentioned in this context.

The specimens conform to Stephenson's criteria of "short, thick, wide, projectile points with rudimentary shoulders, parallel-sided or contracting stem, and straight or slightly rounded base" (Stephenson Ferguson, and Ferguson 1963: 143). The most important difference between the true Calvert point and those similar forms at Three Mile Island is that nearly 90 percent of the true forms are fashioned from quartz; whereas, the eight specimens from the Three Mile Island site are made from various other materials. It was this characteristic use of quartz that initially permitted Stephenson to separate the Calvert point from other Archaic types.

Stephenson reports that Calvert points are found at both the Marcey Creek and Seldon Island sites. They are also associated with his Marcey Creek component, as well as, with his Pope's Creek and later Middle Woodland components as the Accokeek Creek site. Perhaps the Calvert-like

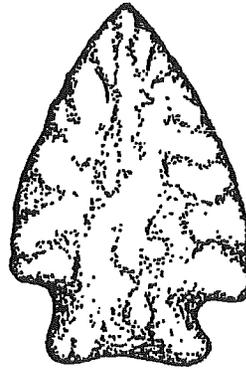




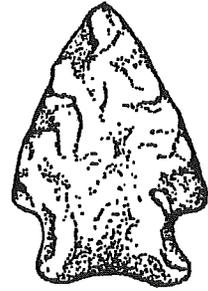
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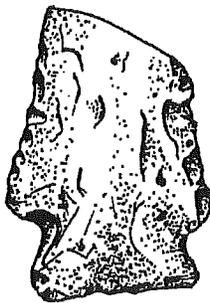
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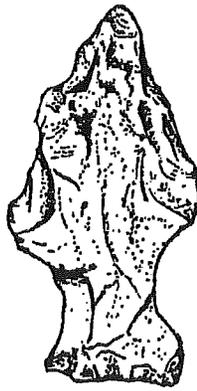
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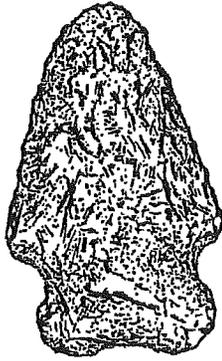
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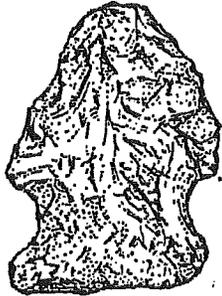
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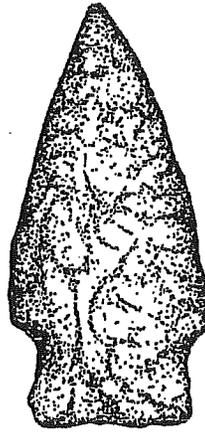




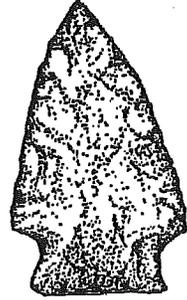
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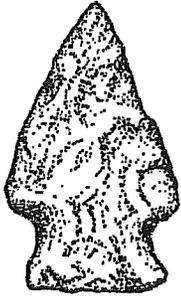
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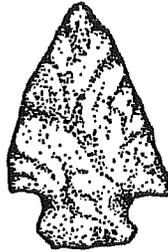
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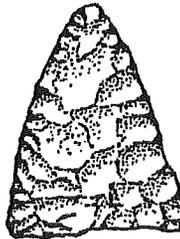
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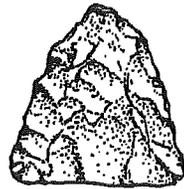
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point does date to the Archaic period. However, the possibility that it is associated with Light Plain or Pope's Creek pottery types in the Lower Susquehanna should not be ignored.

#### Vernon-like Points Variety A

Stephenson defines "Vernon Points" as being "short, wide projectile points with pronounced shoulders, constricted stem, and expanded, straight base" (Stephenson, Ferguson, and Ferguson 1963: 144). Later in the publication he indicates that the bases may be slightly concave or convex. The use of quartz is again a defining criteria. However, as with the Calvert points, a small number of specimens are manufactured from other materials.

Variety A and Variety B (to be discussed) of the Vernon-like points from Three Mile Island are differentiated only by their basal configurations. Variety A is characterized by a subconcave base. Two differences exist within this variety based on the distal medial point of juncture or geometric form of the shoulder. The shoulder may be either right angle circular or obtuse circular. Nine of the 10 examples are manufactured from argillite.

Vernon points are associated with Stephenson's Marcey Creek component and they probably also belong to the Pope's Creek and Middle Woodland components at Accokeek Creek. The type is further related to Holland's Type M - Side Notched of the Early Woodland period (Holland 1955: 171). Probably the type is associated with one or more of the Early Woodland pottery groups at the Three Mile Island site.

### Side-Notched Points

Statistically speaking (using distributions of actual numbers of points), the various side-notched specimens present essentially the same diagrammatic form (Fig. 5). Therefore, they have been lumped together in order to position the side-notched 'type' in relation to the other major types. The different variations are discussed to indicate their early position within the overall scheme.

Variation 1. This point has been called a "Hellgrammite Point" and is described by Kent (1966: 71) in a paper dealing with local Archaic cultures. Considered by many to be Archaic, Kinsey (1959: 117) has suggested that "possibly it is one of the local specialized point types associated with a Vinette 1 pottery." Although it is thicker and more crude in form, it resembles the Early Woodland Meadowood point in its small lateral notches and elongated blade.

Variation 2. These points more closely resemble the Meadowood points described by Ritchie (1961: 35). One example is a reworked Meadowood blade, while the other two examples could be local variations on that theme.

Variation 3. These three specimens are characterized by a subconcave base, lateral haft, and obtuse shoulder form. Two are manufactured from flint and one from quartz. No comparisons or dates are available in the literature.

Variation 4. This single example compares with those described by Stephenson under Group H (Stephenson, Ferguson, and Ferguson 1963: 150). He reports that the stems have constricted edges which give the specimen a fishtail appearance. The group probably dates to the Middle Woodland period, although Stephenson also feels that it could be a continuation from Early Woodland times.

Variation 5. Kinsey (1958: 4) calls this type, or a very similar type, a generalized side-notched point. Since his example was found in an Early Woodland context at the Heck Rock Shelter, it is possible that these specimens also have that date.

Variation 6. This is a catch-all group of side-notched forms variable in both shape and material of manufacture. Some of the materials are flint, jasper, rhyolite, and argillite. Generally the points have subconvex to straight bases, lateral hafts, and circular to obtuse shoulder forms. Some of the notches are quite wide and shallow. Six of the seven specimens can be compared to almost identical examples in the literature where the authors have attributed them to the Early Woodland period (Kent and Packard 1969: 33; Kinsey 1958: 4; Holland 1955, Pl. 30a).

#### Type R Side-Notched Points

This is a very distinctive point described by Kent (1966: 72) in an unpublished report on the Archaic cultures of the Northern Piedmont. Initially these points were considered to be Archaic. However, their relative abundance and apparent relationship to the other point types at Three Mile Island may suggest a somewhat later date.

The sample is characterized by the predominant use of rhyolite, straight to subconcave bases, lateral hafts, squat and wide blades, and circular to obtuse circular shoulder configurations.

#### Vernon-like Points Variety B

Vernon-like Variety B points have straight bases. The geometric form of the shoulder varies from right angle circular to obtuse circular to obtuse. Seventeen of the 20 specimens are made from argillite. A further difference from Variety A is the presence of more long-bladed forms. This

type is a cultural continuation of Variety A and is probably associated with some of the later pottery types at the site.

#### Corner-Notched Points

These points constitute a type in the same sense as the side-notched forms. Numerous varieties in either group could be distinguished if the samples were larger. The points are made from quartzite, jasper, rhyolite, argillite, and flint. There appears to be a definite affinity between this corner-notched group and the Vernon-like Variety B type. Two of the points fit easily into the latter group, except that they show finer workmanship. Corner-notched points have been found in a Middle Woodland context as the Erb Rock Shelter in Lancaster County (Kent and Packard 1969: 33).

#### Pentagonal Points

One point that is not included in the seriation chart is a rhyolite pentagonal form. It is not a true Jack's Reef point. It is, however, pentagonal and may date to the latter part of the Middle Woodland period, perhaps associated with or just prior to the appearance of Clemsons Island pottery.

#### Triangular Points

Only six triangular points were found. They are manufactured from a variety of materials as were the side and corner-notched points. They are probably associated with the Late Woodland Clemsons Island or Shenks Ferry components.

In conclusion, it should be mentioned that, although an attempt is made to suggest which point types could be Early or Middle Woodland types,

it is reasonable to assume that in some instances the various forms, or cultural traditions responsible for those forms, carry through the two time periods.

#### Lithics: Flake Tools

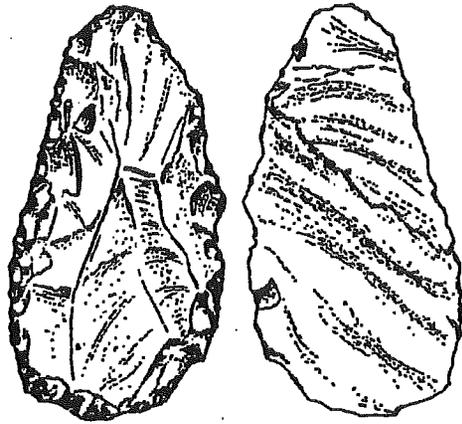
Increasingly the archaeologist has come to realize that flake tools are an integral part of the prehistoric tool kit. Microscopic analysis has progressively become more valuable as a technique for studying the use to which certain tools were subjected. Emphasis must now be placed upon determining the temporal and cultural affinity of these kinds of tools.

Certain types of flake tools probably received random utilization throughout time, and will, as some authors have suggested, make "poor cultural markers" (Leslie 1952: 75). This is certainly true of some classes of tools. However, one wishes to think that given larger samples and a more conscientious effort towards classification and determination of function, it will become possible to assign certain types a specific function and/or a specific time period.

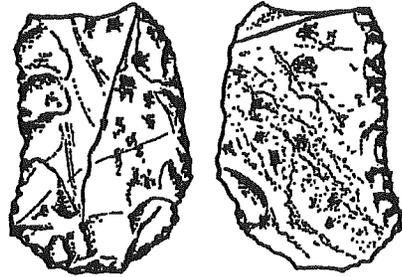
Ten groups of flake tools, represented by a collection of 120 specimens, have been recognized at the Three Mile Island site. These are of essentially two types: those that were intentionally modified and those that were unintentionally modified at the time that they were engaged in a specific activity (Figs. 11, 12).

A flake has two surfaces or faces. The outer face is considered to be that face exhibiting two or more flake scars. The inner face exhibits only one scar surface and the bulb of percussion that resulted from the removal of that particular flake from its parent core. The end of the flake

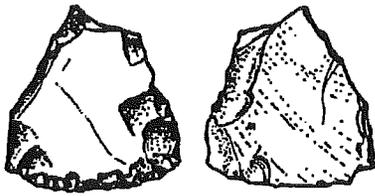




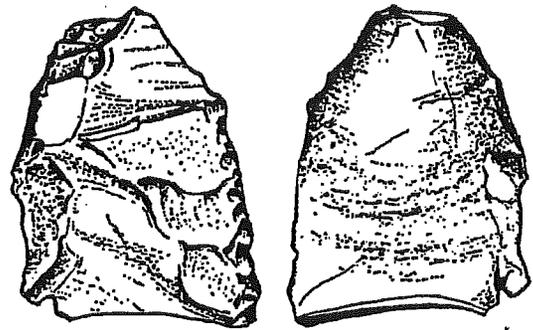
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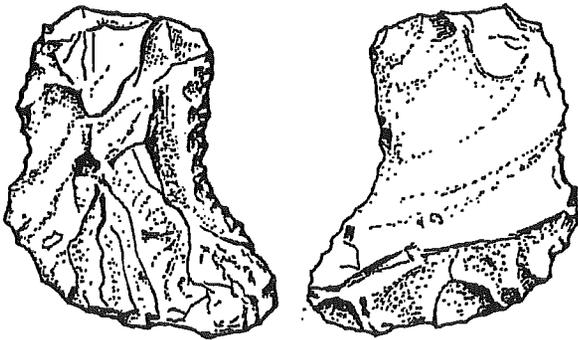
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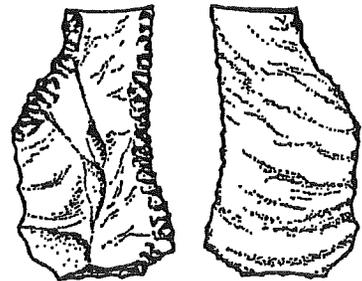
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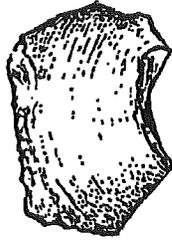
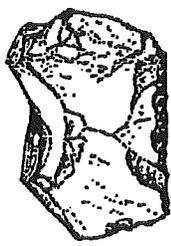


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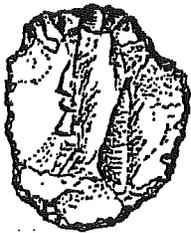




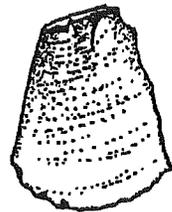
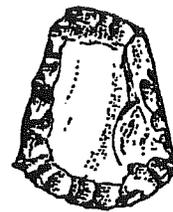
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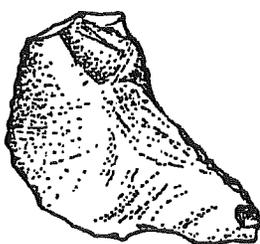
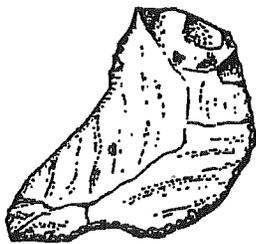
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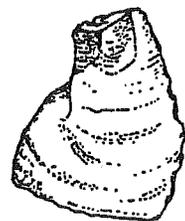
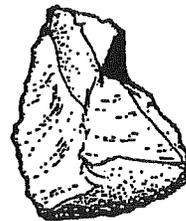
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is that part opposite the bulb of percussion, regardless of which face is being considered.

### Intentionally Modified Flakes

Group 1. Tools of this classification are characterized by modification of two or more edges of the outer face, with special emphasis on modification at the end of the tool. Although the linear edge of the flake was prepared for some function, the end appears to have been given more attention, either because it served a different function or because it functioned on the same material, but in a different way.

One variation, represented by a single specimen, probably had a slightly different use. In addition to the group characteristics, it exhibits modification of the same edge on both faces. Tools of this group have been called "elongated uniface end scrapers" (Jennings 1957: 155).

Material (Sample 9). Pennsylvania Jasper (4); Red Jasper (1); Quartz (2); Flint (2).

Group 2. These specimens are characteristically modified on the outer face at the end of the flake opposite the primary bulb of percussion. Flake tools of this variety are variously called "thumbnail scrapers" (Dragoo 1959: 168) or "ovate end scrapers" (Leslie 1952: 76). They probably represent a specialized version of the tools of the first group.

Material (Sample 16). Pennsylvania Jasper (4); Quartz (2); Flint (5); Chalcedony (3); Rhyolite (2).

Group 3. The group is characterized by modification on one edge of one face (usually the outer face), with special emphasis on modification of the long side. These pieces are sometimes called "side knives." Three examples, often referred to as "spokeshaves", conform to the group

criteria except that the linear modification occurs on an incurvate edge.

Material (Sample 27). Pennsylvania Jasper (8); Jasper (1); Flint (3); Quartzite (1); Chert (5); Rhyolite (8); Slate (1).

Group 4. Modification occurs on two or more edges of one face, usually the outer face. The specimens differ from those of Group 1 in that there is no emphasis on end modification; they are similar to Group 3 in that there is emphasis on side modification. Possibly a number of these pieces are broken tools of the first group.

Material (Sample 10). Pennsylvania Jasper (5); Jasper (2); Flint (2); Rhyolite (1).

Group 5. With the exception of the variation mentioned in Group 1, this is the first flake tool modified on one edge of two faces, characterized by little or no end modification. The modified edge is always the long side. These tools are referred to as "side" or "flake" knives.

Material (Sample 9). Pennsylvania Jasper (3); Quartz (1); Flint (2); Rhyolite (2); Unknown (1).

Group 6. Intentional modification of two or more edges of both flake faces characterize this group. Care should be taken not to confuse a flake modified in this fashion with a bifacially prepared tool.

Material (Sample 10). Pennsylvania Jasper (3); Flint (1); Rhyolite (3); Slate (1); Unknown (2).

Group 7. The tools of this group are chipped 360 degrees about the outer face and apparently represent a variation of Group 2. Generally there is no modification on the inner face. However, two specimens do show a minor amount of chipping on this face, perhaps indicating that the

tools had been used similarly to those in Group 1, but in the opposite direction. The tools appear to have been made to rotate in the hand as the edges dulled. They are variously described as "lunate scrapers", "round end scrapers", or "disc flake scrapers".

Material (Sample 6). Pennsylvania Jasper (1); Quartz (1); Flint (2); Chalcedony (1); Chert (1).

Group 8. These two specimens, modified on two or more edges of the outer face, are related to either Groups 1 or 2. In this case, the long side of the tool exhibits the most wear, while the end shows no use. It is possible that the sides were dulled for hafting and the end was freshly rechipped.

Material (Sample 2). Pennsylvania Jasper (1); Chert (1).

#### Unintentionally Modified Flakes

Group 9. These flakes, which are similar to those of Group 3, show unintentional chippage on one or more edges of one face (generally the outer face). Usually only one edge is modified, and it is almost always the longer side of the flake.

Material (Sample 25). Pennsylvania Jasper (8); Red Jasper (3); Flint (7); Chalcedony (2); Chert (1); Rhyolite (4).

Group 10. The last group of tools show modification on one edge of the outer face at the end opposite the bulb of percussion. Apparently these tools functioned in the same way as those of Group 2.

Material (Sample 7). Pennsylvania Jasper (2); Chalcedony (1); Flint (4).

It is interesting to note that flake tools constitute the major tool type at the site, outnumbering even the identifiable projectile point forms.

This is particularly remarkable when one considers the relative scarcity of rhyolite flake tools and the complete absence of argillite flake tools. This does not mean that they do not exist. It means that in all likelihood we cannot recognize them because the cutting edges on both materials are easily obliterated by a minor amount of weathering and decay.

Pennsylvania Jasper, which outcrops to the east of Three Mile Island in Berks and Lehigh Counties, was a preferred stone from which to fashion these tools. Flake tools of this material appear to be characteristic of the Middle Woodland period in Pennsylvania. Witthoft, in referring to the Middle Woodland period, has stated that "flake tools are abundant, and very late sites have little lithic material except flake tools and sparse Jack's Reef points" (Witthoft n.d.b: 2). A preference for a particular lithic resource together with the abundance of a certain tool type within a restricted time period at a site suggests a specialized activity pattern.

It is unfortunate that we are unable to pinpoint the cultural period or periods to which these tools belong. It is probable that most of the specimens are associated with either the Early or Middle Woodland periods. It is also probable that a higher percentage belong to the Middle Woodland rather than the Early Woodland period.

#### Lithics: Bifacial Tools

This section discusses the remaining chipped stone tool types found at the Three Mile Island site. There are 85 bifacial fragments which could not be sufficiently identified to be included in the analysis. These include 5 basal fragments and 61 tip fragments. It should be noted in this context that over half of the tip fragments are made from argillite and belong to either Vernon-like points or square-based knives. The remainder of the

specimens have been categorized in the following manner (Figs. 13, 14).

#### Lanceolate Bifacially Prepared Knives

Variation 1. Characteristically thick in cross-section, these pieces have straight bases and long, straight, parallel sides. They are nearly identical to "Type Q" knives from the Sheep Rock Shelter, where they were found throughout the Middle and Late Woodland strata (Bebrich 1967: 608). The type is probably associated with Vernon-like Variety B points. It is evident that these lanceolate-shaped objects, especially Steubenville-like points or knives, are finding greater acceptance among archaeologists as Early or Middle Woodland tools (Kaeser 1968: 8-26).

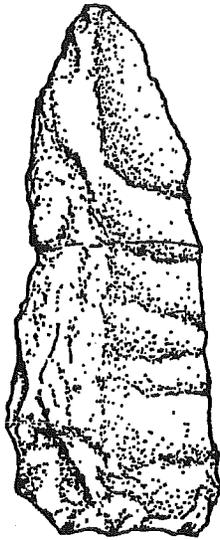
Material (Sample 4). Quartz (2); Rhyolite (1); Flint (1).

Variation 2. These specimens are probably a variation on the first variety. They are characterized by straight bases. However, the blade edges, rather than being parallel, have one excurvate margin. Most of the different Lanceolate Bifacially Prepared Knives from the Sheep Rock Shelter were found in Levels 1 and 2, Middle and Late Woodland strata. This sample is probably associated with Vernon-like Variety B points.

Material (Sample 7). Argillite (5); Quartz (2).

Variation 3. Although most of the objects in this category are basal fragments, they appear to belong to lanceolate type knives. They differ from the preceding groups in that the bases are convex and the sides are straight parallel to expanding. The specimens show evolution toward a more ovate form. Ovate knives are generally the earlier forms at the Sheep Rock Shelter. For this reason, and because the specimens are made primarily from argillite, they are probably associated with one or both of the Vernon-like point types.

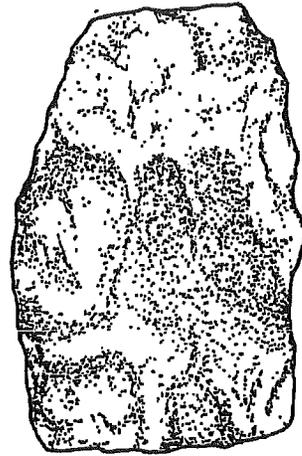




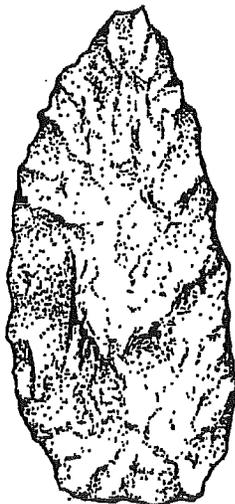
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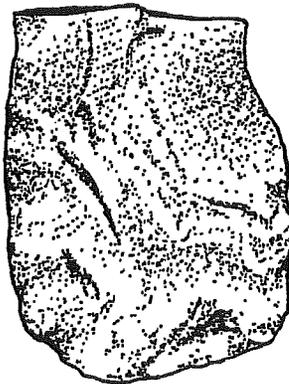
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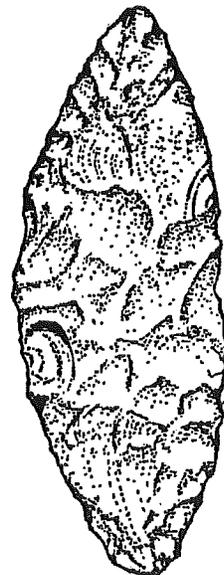
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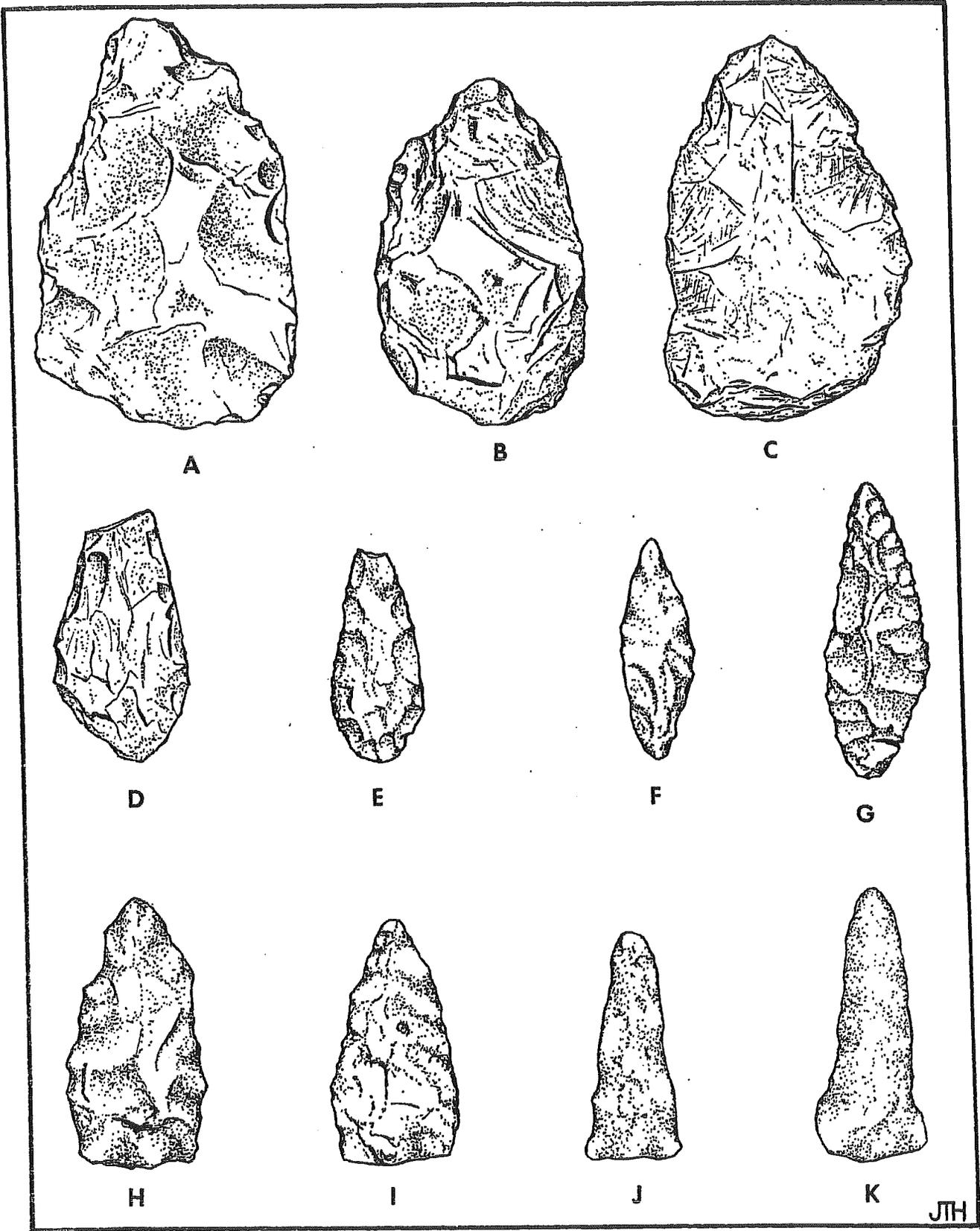


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Material (Sample 8). Argillite (6); Flint (2).

#### Triangular Bifacially Prepared Knives

These specimens range in length from one to four inches. They are crudely fashioned, thick in cross-section, and have straight to slightly concave bases. Some are possibly blanks for Vernon-like points, but generally the width is too narrow. Triangular knife forms at the Sheep Rock were confined to Levels 2 and 3, and as such date to either the Early or Middle Woodland periods. Once again the preference for argillite would suggest an association of this knife type with the Vernon-like points.

Material (Sample 13). Argillite (11); Other (2).

#### Pseudo-Ovate Knives

These are not classic ovate knives. They are large, irregular in form, and percussion flaked all around. Their temporal and artifactual relationships within the Three Mile Island site are unknown. Since most of the specimens are made from rhyolite, it is possible that the forms are associated with Type R projectile points.

Material (Sample 8). Rhyolite (7); Shale (1).

#### Incipient Stemmed Knives

Variation 1. These knives are shaped like teardrops. The base, which appears to be almost rounded, is an incipient stem. Cultural associations are unknown.

Material (Sample 6). Rhyolite (4); Quartz (1); Other (1).

Variation 2. These are simple elongated forms, narrow, and thick in cross-section. Function and provenience are not known.

Material (Sample 4). Rhyolite (1); Argillite (1); Quartzite (1); Jasper (1).

Twenty-two additional bifacially worked tools, which might be considered knives but which could not be classified, were recovered. Sixteen of these are made from argillite. Finally, there are 11 objects classified as drills. Their cultural association is unknown.

#### Lithics: Unmodified Flakes

Of the unmodified lithic flakes (4500) from the Three Mile Island site, nearly 58 percent are argillite. Such a high percentage is not unexpected, since the material can be found in large blocks scattered over the southern end of the island or in the nearby diabase dikes. At least one half of the bifacial tools and over 37 percent of the projectile points are manufactured from this stone.

Rhyolite and quartz are the next two most commonly used commodities. An additional 37 percent of the projectile points are made from rhyolite. Quartz flakes constitute approximately 10 percent of the unmodified sample. Quartz is not important as a material for point manufacture at this site. Rhyolite is available from the nearby South Mountain quarries. Quartz outcrops abundantly in the Lower Susquehanna Valley.

Pennsylvania Jasper represents only about two percent of the detritus sample. As the only material not available in the vicinity of the site, it is interesting to note its popularity for flake tools (35 percent) and its limited use in the manufacture of projectile points (2 percent). The few remaining exotic flints, chalcedonies, and cherts were collected in the nearby river gravels.

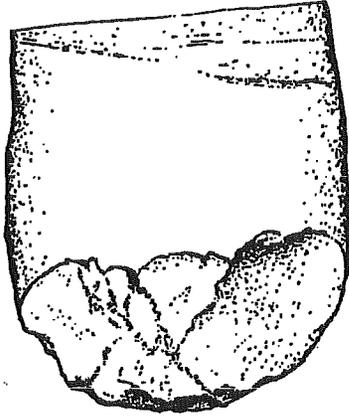
It is probably important to note the relative absence of heavy stone objects. Only three pitted hammerstones and two or three fractured hammers were recovered. There is one badly damaged celt bit, a portion of a mano, and about six river cobbles with flakes of varying number and size removed along the edges to form crude cleaver-like tools (Fig. 15). Additional artifacts include three small and pecked shale fragments, one small net sinker, a soapstone bead, fragment of a slate gorget, small portion of what might be a bannerstone, and a long rhyolite bladelet (Fig. 16). With the exception of the net sinker and the bead, the other specimens are characteristic of the Early and Middle Woodland periods.

The types of tools and their relative abundance at this site would suggest a hunting station. The tool kit is a killing kit as indicated by the number of projectile points, and a meat and skin processing kit as suggested by the large numbers of flake tools, bifacials, and cleavers.

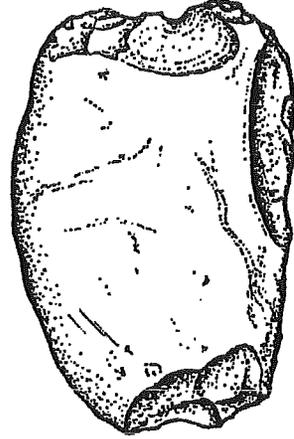
#### EARLY AND MIDDLE WOODLAND SITES IN THE SUSQUEHANNA VALLEY

Rudimentary knowledge and understanding about sites and the various modes of settlement for the cultures of the Early and Middle Woodland periods is best understood for areas outside of the Susquehanna Valley. This is partially the result of more intensive investigation, but perhaps more important is the fact that burial mounds and cemeteries, which are easier to discover than habitation sites, have until the last few years formed the basis for defining most of the phases and cultures in these outlying areas.

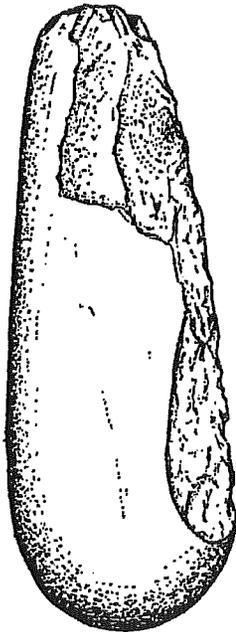




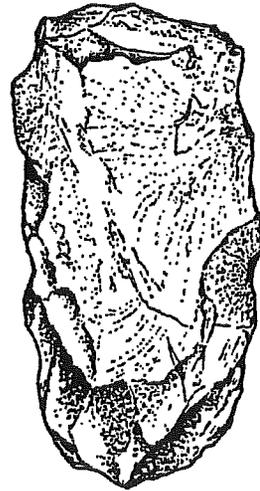
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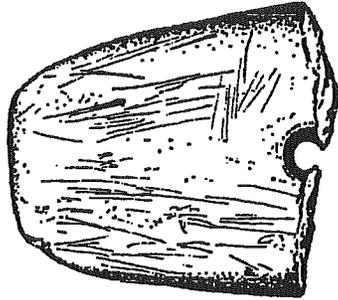


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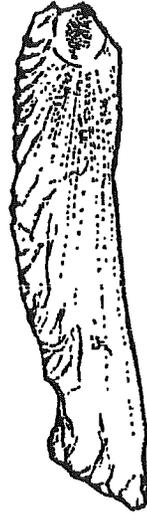


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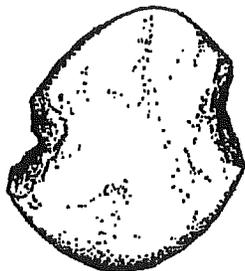




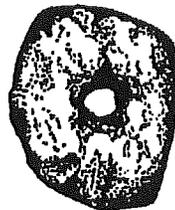
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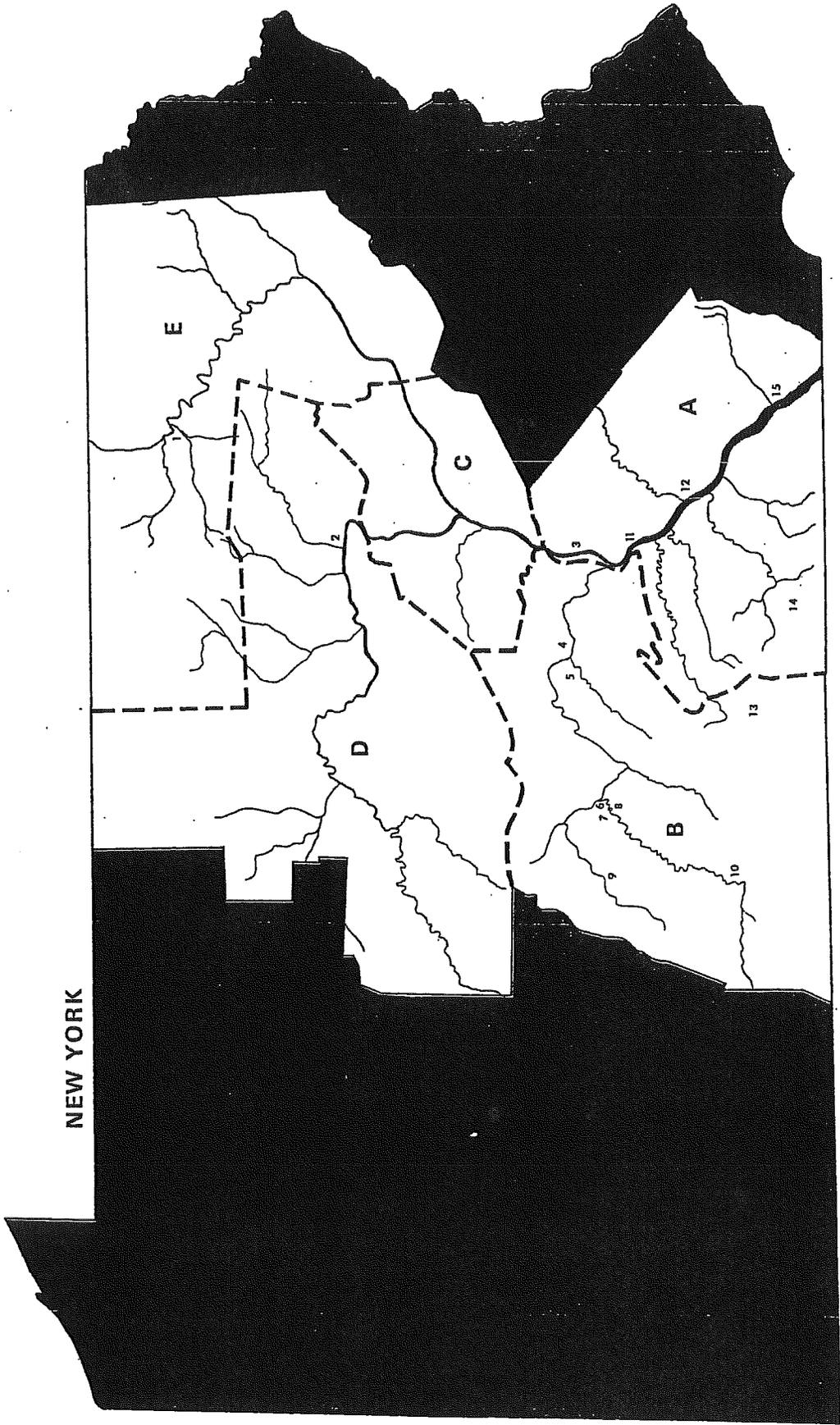
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Relatively little is known about these same early cultures in the Susquehanna Valley. No cemetery sites have been found and only four mounds are known to have existed. Two were discovered along the Juniata River near Academia and Mexico, a third on Clemsons Island in the main river, and a fourth at Halls Station on the West Branch. These mounds date to the Late Woodland Clemsons Island culture (Fig. 17). Only at the last site were there a few objects--"gorgets, pendant, platform pipe, cone, almost tubular elbow pipes, conical antler arrowpoints, single unilaterally barbed harpoons, . . ." known to characterize an earlier Point Peninsula culture (Carpenter 1949: 76-77). A fifth mound, supposedly located near Lewisburg, is mentioned by one of the early historical writers of the West Branch. He quotes a local farmer as saying:

An extensive Indian burying ground existed on the farm of Mr. Nesbit, opposite the mouth of Buffalo Creek. It consisted of a large mound, twenty-five or thirty feet in diameter. Mr. Nesbit remembers when it was opened, and states that in the bottom was a floor of flat stones, on which the bodies appeared to have been placed in a sitting position; which he inferred from the fact that the skulls were all on the top of the other bones. When exposed to the air they soon crumbled into dust. The mound contained no implements of war, only a few stone pipes; . . . .  
(Meginness 1857: 27)

The few sites that have been discovered along the Susquehanna could hardly be called anything more than camps, and from most of these little material culture has been recovered. The Three Mile Island site is the largest excavated site of Early and Middle Woodland affinity. Smaller sites have been explored, and those producing significant data about settlement pattern, population size, or artifact assemblages are discussed.





NEW YORK

### Rock Shelters (Unmodified)

Rock shelters, caves, and cliffs form naturally protected areas inviting utilization by both man and animal. In these places the early hunter, fisherman, or migrant family could take temporary refuge. As man became more settled, these natural houses functioned better as stations from which to gather food to supplement a domesticated economy.

Some shelters served as transient campsites where an individual or a family might stop for the night or devote a few days to the harvesting of a local resource. Practically any rock outcrop would do. An example of an early transient camp is 36 Hu 4 on the Raystown Branch of the Juniata River. This small site could hardly have been used by more than one person for a single night. The floor slopes steeply to the river, while the overhang is nearly insufficient to protect a seated man from the rain. Scattered about on the floor was the residue of such an occupation: a few flint chips, some charcoal, and a single sherd similar to the Early Woodland Juniata Thick varieties (Smith 1966: 28). This outcrop apparently provided a temporary windbreak for a mobile hunter.

Mussel Rock Shelter (36 Hu 6), located on the same river about a mile south of the Sheep Rock Shelter, is a somewhat larger overhang and was probably occupied during several periods of time. The cultural debris at the lowest level consisted of a single untyped Early or Middle Woodland limestone-tempered sherd, a few scraps of bone, and some mussel shell. At this depth, the protected living floor was sufficient to accommodate not only a single hunter but also a group of family size. Since mussel shell was the most abundant type of

garbage in all levels, it is not improbable that this shelter functioned as a transit camp for a family utilizing local mussel resources (Smith 1967: 767-773).

Gromiller Cave (36 Bl 1), five miles east of Hollidaysburg on the Frankstown Branch of the Juniata River, contained scattered evidence for Archaic and Late Woodland occupation, and a small Early or Middle Woodland hunting component. Two slate-tempered pottery sherds and a hematite ball were all that remained to attest to an early habitation. Guilday suggests a light, intermittent occupation and notes the lack of fish, aquatic turtle, and waterfowl remains (Stackhouse 1965: 105-117).

The Sheep Rock Shelter, Coon Rock Shelter, Erb Rock Shelter, and others, generally somewhat larger than those referred to above, often sustained repeated occupations not only by different groups but sometimes by the same group. These larger sites served both the individual or foraging family, but could also support several families or a small band. Many of the shelters were occupied for long periods, sometimes on a seasonal basis.

Heavy deposits of ash, charcoal, and other refuse give testimony to repeated Early and Middle Woodland habitation of the Sheep Rock Shelter. Michels (1967: 818) has proposed that this site may have functioned, during the Early Woodland period and perhaps during the Middle Woodland period, as a "central base camp" for a small band of hunters and gatherers. Sheep Rock is ideally suited to protect such a group throughout the colder fall and winter months when they move only between select satellite camps, until warm weather permits the

band to again break into family units and forage over wider areas. It was probably during this period of warm weather foraging that one or more family groups carried the Middle Woodland Sheep Rock Cord-marked pottery southward to the Coon Rock Shelter (Smith 1970a: 64-65).

The Heck Rock Shelter (36 Ad 1) has a living area of approximately 180 square feet and is entered by a narrow passageway between two large boulders. The cultural debris scattered within the upper 15 inches of deposit indicated that the shelter was inhabited numerous times during the same period. The excavated materials include 130 interior-exterior cordmarked sherds, 24 plain fiber-tempered sherds, 16 projectile points, most of which are crude, slender, side-notched varieties, over 100 spalls some of which were used as tools, "a broken cache blade used as a knife, a core-like block of rhyolite, a bifacially chipped chert tool of discoidal form, with planning bevels on one edge and deep scars on another, and several bone fragments, two of which showed tool marks" (Kinsey 1958: 3).

#### Rock Shelters (Modified)

Rock shelters were occasionally modified to provide increased protection and comfort. The only example of such alteration, thus far recognized, was found at the Erb Rock Shelter in Lancaster County where Kent and Packard (1969: 31) reported the existence, along the back wall, of a prehistorically dug trench 19 feet long and 20 inches deep. Careful examination of the fill and trench outline showed that it was not the natural depression that occurs along the inner margin of a drip line, but was, in fact, an artificially excavated feature. Side, corner, and basal-notched

projectile points were scattered throughout the bottom portion of the trench. Both a side and a corner-notched point were recovered on the bottom of the trench, while at a depth of 14 inches from the surface a basal-notched point lay six inches from several Middle Woodland Mockley Net Impressed sherds.

Time-consuming modification of the shelter suggests that it was used for extended periods and, as indicated by the authors, "may have served as a center of operations for hunting forays in that area" (Kent and Packard 1969: 33).

#### Open Sites

Rock shelters were not the only localities inhabited by early peoples. They settled anywhere, especially along rivers and stream, that water and food were readily available. It is not unreasonable to assume that many times they camped beneath the stars, nor is it unreasonable to say that, while there is no direct evidence for it on the Susquehanna, they often lived in poled, bark-covered, circular structures.

There is indication for two types of open sites: those transient camps where a few people resided for short periods of time, and those prolonged camps used by several families or a small band for longer, perhaps spring-summer, duration.

At the Sick Farm site (36 Br 50), located on the South Towanda Flats in Bradford County and excavated over 20 years ago by John Witthoft, examples of both forms of open settlement were discovered. Their excavation constituted the first stratigraphic evidence for the Susquehanna Valley. The Sick Farm site is one of several extensive overlapping Late Woodland sites. The living floors of these late sites, however, were all apparently

located within the plow zone. Deeper soundings in different areas exposed earlier occupation floors representing camps of shorter duration. Witthoft said that "to judge by our deep soundings, the whole body of the floodplain beneath the levee must be filled with such tiny campsites. The whole human history of recent times must be recorded within the floodplain as innumerable components of the smallest possible time units in a refined stratigraphy . . . , (but) there is no practical way to explore it" (Witthoft n.d.a: 5). Most of these living floors were defined by charcoal stained zones of trodden earth, with perhaps a hammerstone and a few chips scattered about, and a burned red area representing a central surface fire.

The best example of an early living floor was located outside of the area of Late Woodland occupation and described by Witthoft as follows:

The deeply buried feature consisted of a stained soil zone, less than an eighth of an inch thick, which included charcoal crumbs and which had a diameter of about fifteen feet. This thin film of char and stained soil was twenty-four to twenty-six inches below the present ground surface. In the middle . . . we found two shallow pits which had been scooped below ground level; they were saucers three inches deep at parts and about three feet in diameter; . . . . These saucers were apparently hearths and one pit contained a fair amount of . . . charcoal. The only artifact found at this level was a single sherd of Vinette 1 pottery, which lay on the bottom of one hearth in charcoal and loam (Witthoft n.d.a: 12-13).

A second and larger buried campsite was also discovered and according to Witthoft:

It consisted of a nine-inch thick layer of grey stained sand with included charcoal grains, over thirty feet in diameter, with the top surface eighteen inches below the present ground surface, and nine inches of completely sterile loam above it. At its top was a heavy red seepage zone . . . . The stained area was apparently an area within a buried topsoil which was charcoal stained. This

layer contained no flint chips but yielded a side-notched projectile point of Onondaga chert and about two hundred Indian potsherds and crumbs of pottery which had come from four different pots . . . . The excavated sample represents less than a quarter of the area of the stained soil (Witthoft n.d.a: 11).

While there were no recognizable stained or trodden living floors at the Three Mile Island site, the horizontal and vertical distribution of pottery suggests the same sort of micro-settlement within a more shallow and confined stratigraphic profile. The amount of debris discarded at both the last mentioned component at Sick, and at some of the recognizable camps on Three Mile Island, would seem to indicate their popularity over an extended period of time.

### Cremation Site

Nearly 20 years ago, Leslie and Harry Kunkle of Marysville, Pennsylvania and Frank Mishenko excavated a portion of a small camp-site on an island in the Susquehanna River along the shore east of Perdix, Cumberland County (36 Da 21). The site was examined by John Witthoft several times during the excavation, and the following discussion is taken from his unpublished manuscript in the files of the William Penn Memorial Museum (Witthoft n.d.b.).

The island is approximately 800 feet long, 50 feet wide, and 10 feet above normal water level. Like most of the Susquehanna islands, it is rapidly being eaten away by erosion. The soil is acid and bone and humus are not well preserved. Natural stratigraphy, as was the case at Three Mile Island, is nearly impossible to define. Witthoft indicates, however, that the artifacts in undisturbed areas are generally found at depths proportional to their age.

A single stratigraphic cut was made in 1955. Specimens from this excavation are still available in the collection of Leslie Kunkle, although they are now mixed with objects from other parts of the island. Three and one-half feet below ground surface the excavators encountered a "thin horizontal film of char-colored soil" (Witthoft n.d.b: 6). No hearth was discovered, but numerous burned river cobbles were scattered about the living surface. Corner-notched projectile points, knives, and "Middle Woodland pottery" were found both above and below the stained zone.

A large pile of burned, friable river cobbles, 3 1/2 feet in diameter by 1 1/2 feet high was found resting upon the old land surface.

No ash or charcoal was preserved, but upon removing the rocks, Witthoft recovered a few fragments of calcined bone and some "sponge-like masses of organic char." These he interpreted as representing the residue from a cremation. A short distance from this pyre was a small pit, two feet deep and two feet in diameter, which had been dug from the living surface.

According to Witthoft:

It contained calcined bone fragments from a young adult male . . . .Large sections of the maxillae, the teeth, fragments of the mandible, other facial fragments, and small pieces of the frontal, temporals, and parietals were in their proper anatomical relationship. They represent the whole head from a cremation, . . . . Fragments of vertebral spines, long bone fragments from joint areas, phalanges, rib fragments, and other near-surface bone segments are present in almost normal anatomical relationship, . . . .(Witthoft n.d.b: 7)

The only additional objects recovered from this surface were 13 crudely chipped pieces of shale cached in a pile several feet from the cremation pyre (McCann 1972: 22). Although the specimens were associated with the living zone, Witthoft feels that they were probably not directly related to the cremation. The stone is a soft, fine-grained Martinsburg shale that can be obtained in the immediate vicinity; apparently points of this material are found near the site. These particular specimens represent blanks from which tools were to be manufactured.

#### Possible Semisubterranean Houses

There is a growing body of evidence, although it is not conclusive, that one of the typical house forms of both the Early and Middle Woodland peoples was a circular poled structure with a floor dug below ground surface.

The first suggestion of this type of house was uncovered by Witthoft

at the Overpeck site (36 Bu 5), near Kintnersville, on the western shore of the Lower Delaware River. Although this is somewhat removed from the primary area of study, its importance to understanding early settlement types warrants its inclusion in this paper. The site is described by Witthoft (n.d.c: 12-16) in an unpublished manuscript in the files of the William Penn Memorial Museum, and the following report is paraphrased from his research.

The disturbance, which was buried within the floodplain sediments, consisted of a large, shallow, saucer-shaped pit about one foot deep and encompassing a 10 by 12 foot area. Apparently it was entirely distinctive from any other feature belonging to either earlier or later occupations. "Within the south edge of the pit was an arc of six postholes, each about six inches in diameter (Witthoft n.d.c: 2). Remnants of additional postmolds may have been present along the other sides, but this is not certain since that area was excavated by inexperienced help who may have inadvertently destroyed the evidence. Two feet inside the southern arc of postmolds was a small, roundbottomed pit one foot in diameter and excavated to about one foot below the house floor. This feature, interpreted as a firepit, was solidly packed with what Witthoft called "bog-iron deposit." North of this, toward the center of the house pit, lay "six large burned river boulders, the largest weighing forty pounds, two unpitted thin cobbles used as hammerstones, and a rectangular grinding stone . . . .Scattered over the pit bottom were eight sherds of Vinette 1 pottery, several jasper chips, and a crude small scraper of jasper (Witthoft n.d.c: 13). The pottery is described as being typical Early Woodland Vinette 1 and not one of the related types.

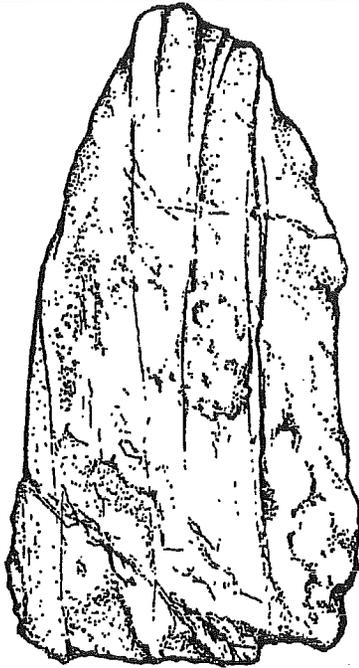
A second feature, which might be interpreted to be a semi-subterranean house, was accidentally discovered by the author, Barry Kent, and an amateur archaeologist while searching for evidence of 18th century Fort Loudon along the Conococheague Creek in Franklin County, Pennsylvania (36 Fr 31).

A bulldozer had been utilized to explore large sections of the property where the fort was reported to be located. Most of the effort was in vain, until just before dusk when a portion of a large, dark stain was discovered near the creek's edge. Rapid inspection showed the stain to be an isolated prehistoric feature rather than part of the fort complex. It consisted of a saucer-shaped pit about eight feet in diameter and 36 inches from ground surface to the deepest point. Two-thirds of the pit, and probably the entire pit, was lined with rocks carried from the nearby stream. Some of the cobbles were burned and cracked, but seem not to have been part of a firepit.

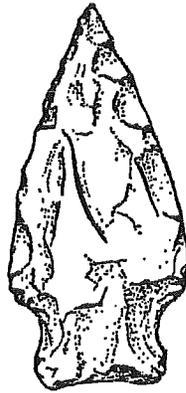
The feature was filled with loosely packed, black, greasy soil containing bits of charcoal. No postmolds were noted, although they may have been present, since there was not time before dark to properly explore the disturbance.

Several artifacts and a few large rocks were scattered within the fill, but most of the cultural debris lay near the bottom and lower sides of the pit. The materials included 1 badly decayed section of an animal skull, 13 unmodified rhyolite flakes, 2 fragments of stone possibly used as hammers, 10 small pottery sherds, a chipped limestone knife, a flaked shale object, a jasper drill, 7 modified rhyolite artifacts including 5 complete projectile points and two fragments, and 3 modified flint objects (Fig. 18).

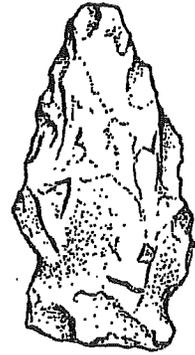




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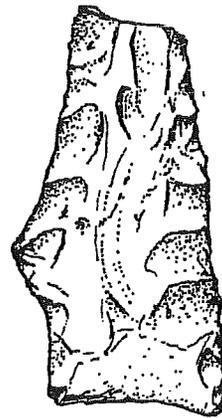
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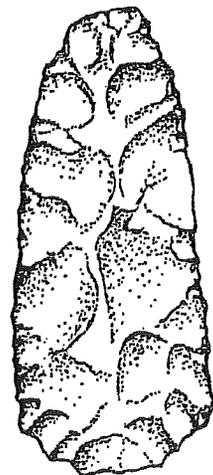
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Two of the pottery specimens were thick, coarse-tempered bodysherds with cordmarked exterior and plain interior; three were thinner, sand and grit-tempered with fabric-impressed exterior and smooth interior; and two were limestone-tempered with cordmarked exterior and plain interior.

Three projectile points could be identified. Two, although manufactured from rhyolite instead of argillite, resemble the Vernon-like Variety B points from Three Mile Island. A third point is crude, made from rhyolite, and has long shallow side-notches and a short, reworked blade.

One expects the principal material in Franklin and Adams Counties to be rhyolite since the South Mountain quarries are not too distant. Another interesting rhyolite specimen was a knife fashioned on a large flake. Its haft element is the same as Vernon-like Variety B points, but the blade is off center and extremely elongated. Its relationship, however, is fairly obvious. Finally, two drills were recovered. One is produced from jasper, while the second, which is not so obviously a drill, but which exhibits a basal configuration similar to the jasper specimen, is made from rhyolite. Two flint projectile points were also found that are perhaps Archaic pieces intruded into the fill.

#### Summary

Numerous types of sites in the Susquehanna River Valley, inhabited by people of either the Early or Middle Woodland cultures, have been reviewed. They include rock shelters, cliffs, or caves used for short term shelter or for extended periods as central base camps; rock shelters physically modified to provide increased comfort or protection over long winter months; trodden, transient camp floors buried within floodplain or

island sediment, or enlarged areas with considerable refuse indicating prolonged occupation; a cremation site; and isolated semisubterranean houses. To this list will surely be added someday the description of small, semipermanent band communities, and specific statistics about poled, bark or skin covered surface structures.

#### DISCUSSION

The Three Mile Island site remains to this day the largest Early and Middle Woodland site excavated in the Susquehanna River Valley of Pennsylvania. Most of what we knew at the time of the excavation about these early cultures was derived from several small riverine camps excavated in Bradford County and from a few rock shelters. A single article devoted to the Early Woodland period in eastern Pennsylvania had been published (Kinsey 1958). Several other papers contained references to the period, but none of them was devoted entirely to the subject (Witthoft 1948, Lucy 1959, Michels and Smith 1967). There were no articles that dealt exclusively with the Middle Woodland period; only sporadic references to scattered finds could be located in the literature (Kinsey and Kent 1965).

The Three Mile Island project encouraged this author to organize and conduct for the Pennsylvania Historical and Museum Commission an intensive collection survey of Early and Middle Woodland artifacts and sites in the Susquehanna Valley (Smith 1970a). The scope of the project involved a time span of from 1500 to 2000 years, while the geographic range incorporated the entire Susquehanna River drainage system in Pennsylvania. For convenience of survey, analysis, and classification,

the research area was divided into five work regions that corresponded to various subdrainage systems: the Lower Susquehanna region, the Juniata region, the Middle Susquehanna region, the West Branch region, and the North Branch Susquehanna region.

Early and Middle Woodland ceramics were described and classified on a regional basis; stone tools and ornaments from excavated deposits were typed and identified; diagnostic objects of known Early and Middle Woodland association--blocked-end tubular pipes, platform pipes, birdstones, banded slate gorgets, "exotic" caches, Adena and Hopewell-like artifacts of Flint Ridge chalcedony, etc.--were identified in the collections and recorded; and rock shelters, floodplain sites, cremation sites, and semisubterranean structures of Early and Middle Woodland affinity were discussed (Smith 1970b, 1972).

Papers on the subject were read before the Eastern States Archaeological Federation (1970), the Middle Atlantic Archaeological Conference (1971), and the Maryland Archaeological Society, Inc. (1971). Other researchers became interested in the problem and began to ask questions and discover answers. Funk, Rippeteau, and Houck (1974) developed long temporal sequences for the Upper Susquehanna Valley in New York State; Kinsey (1972, 1975) published his work on the Tock's Island Reservoir project and later examined the deeply stratified Byram site in the Lower Delaware Valley; Kraft (1975) studied Early and Middle Woodland ceramics on the east bank of the Delaware River in New Jersey; Wise (1974) prepared a pottery sequence for the Delmarva Peninsula; and Handsman and McNett (1974) excavated Early and Middle Woodland sites in the Potomac River Basin. Today our understanding of the Early and Middle

Woodland cultures in the Middle Atlantic and Northeast portions of the United States is greatly expanded.

The Three Mile Island site is still the largest Early and Middle Woodland site excavated in the Susquehanna Valley of Pennsylvania. Examination of the ceramics from this site, from other sites in the Lower Susquehanna region, and from the other four regions clearly shows that during the Early and Middle Woodland periods the entire Susquehanna Valley was within the spheres of influence of at least three different culture areas: one to the north, another to the south, and a third to the west-southwest. Much of the time, however, the Valley appears to have been marginal to developments occurring at the centers of these areas.

The Three Mile Island site is in the southern sphere of cultural influence or stated in another way, within the northern part of the Middle Atlantic Culture Province (Kinsey 1971). Most of the ceramic examples and some of the projectile points show a close affinity to types common in Maryland and Virginia.

The large numbers of projectile points, flake tools, bifacials, and cleavers recovered at the Three Mile Island site suggest some kind of faunal food securing and processing station. The restricted vertical and horizontal distribution of the various types of pottery suggests small units of people occupying different spaces at different times. The wider distribution of some ceramic types (e.g. Clemsons Island) is indicative of either a larger unit of people occupying a large area at one time or the same unit of people occupying different parts of the area at different times. Most of the pottery, however, was found in small quantities in restricted areas and hence the title of this paper "Early and Middle Woodland Campsites."

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