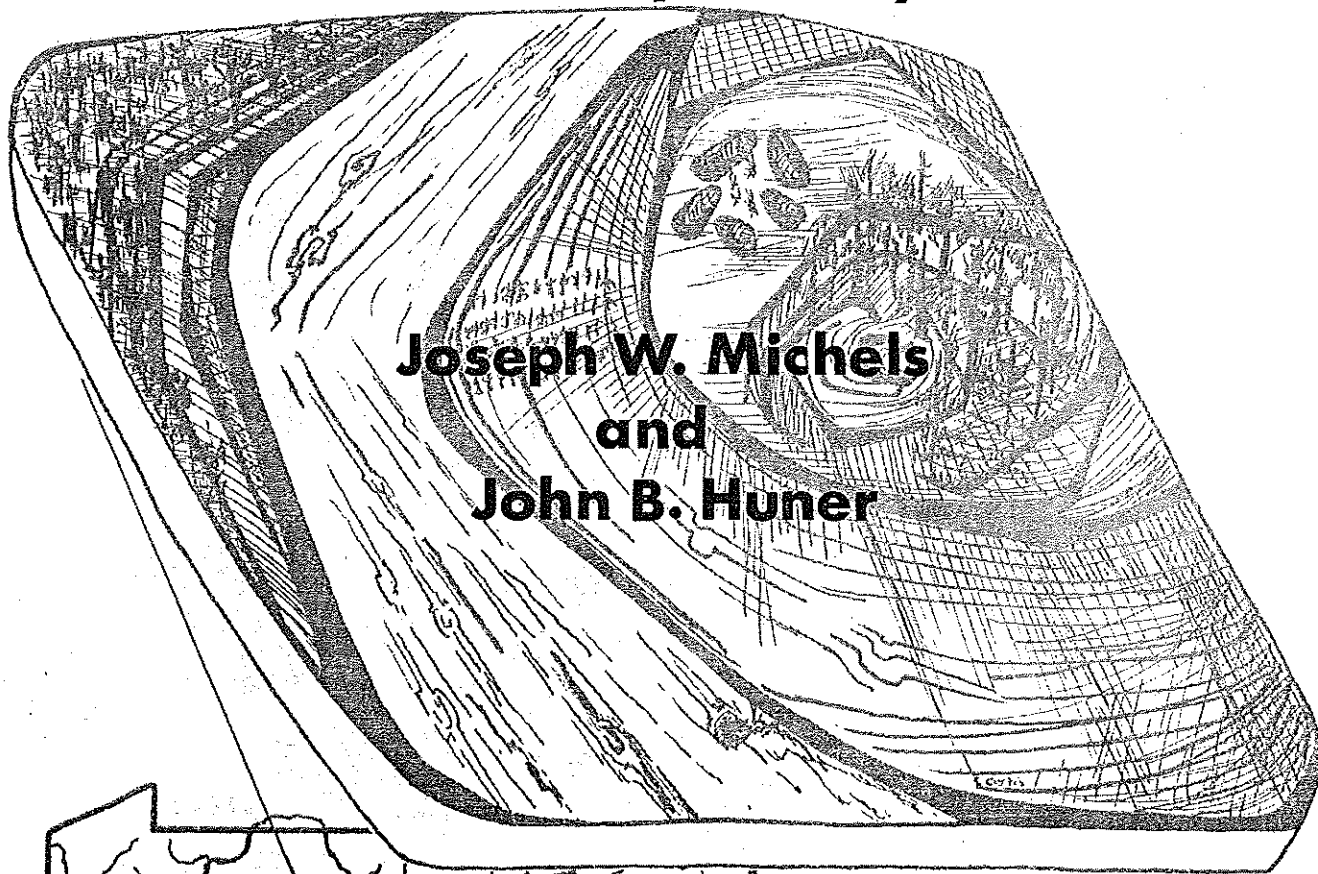
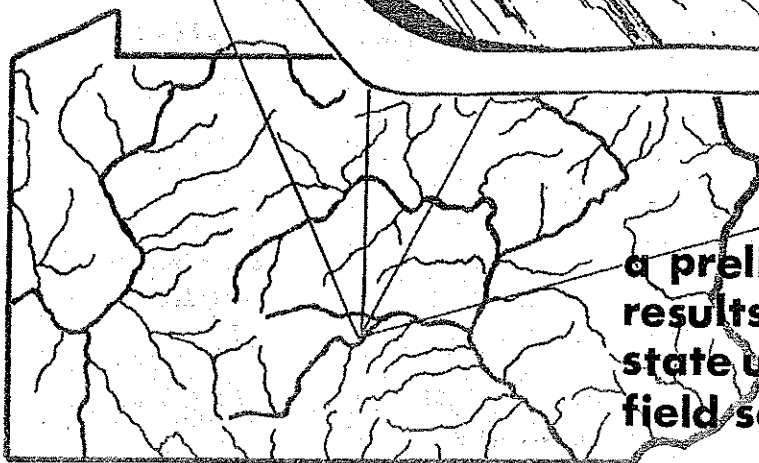


Archaeological Investigations of **THE WORKMAN SITE**

Bedford County, Pennsylvania



**Joseph W. Michels
and
John B. Huner**



**a preliminary report of the
results of the 1967 pennsylvania
state university-juniata college
field school in archaeology**

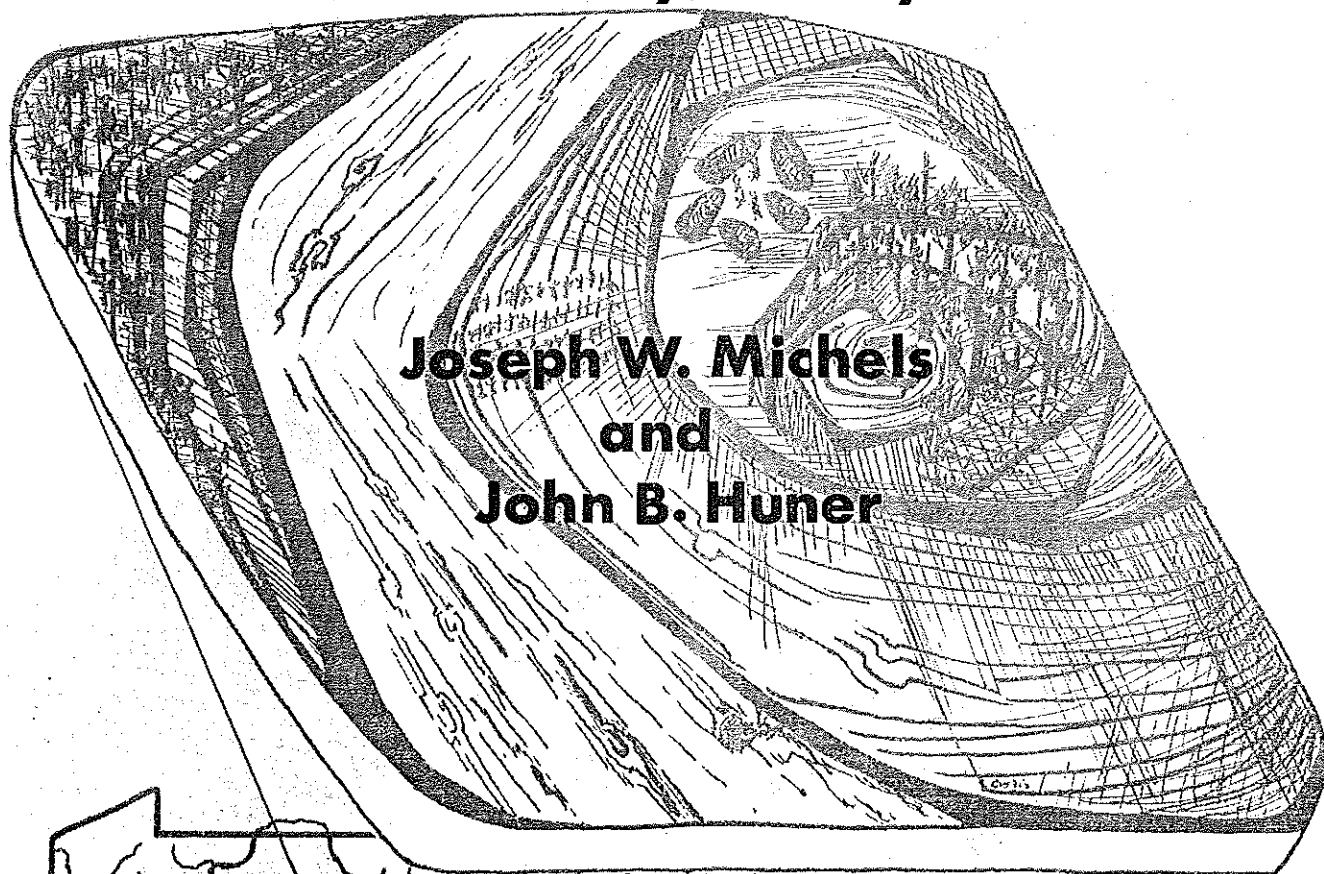
**department of anthropology,
pennsylvania state university**

OCCASIONAL PAPER NO.4

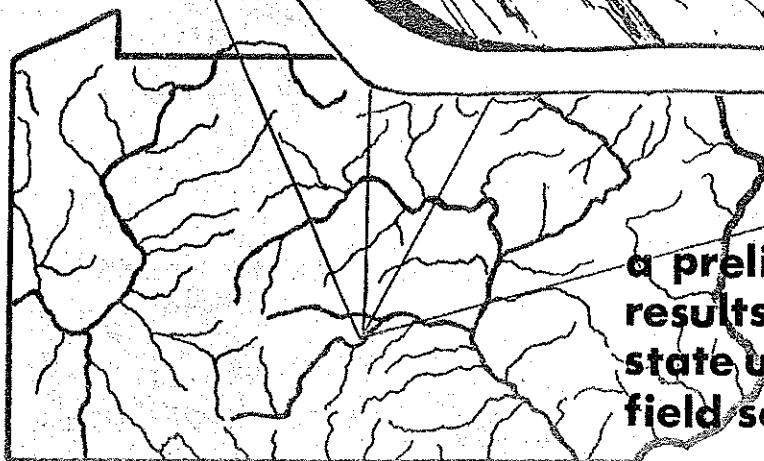
may, 1968

Archaeological Investigations of **THE WORKMAN SITE**

Bedford County, Pennsylvania



**Joseph W. Michels
and
John B. Huner**



**a preliminary report of the
results of the 1967 pennsylvania
state university-juniata college
field school in archaeology**

**department of anthropology,
pennsylvania state university**

OCCASIONAL PAPER NO.4

may, 1968

A PRELIMINARY REPORT
OF
ARCHAEOLOGICAL INVESTIGATIONS
OF THE
WORKMAN SITE (36 Bd 36)
Bedford County, Pennsylvania

Editors

Joseph W. Michels

and

John B. Huner

Assistant Editor

Lorraine M. Willey

Department of Anthropology
The Pennsylvania State University
University Park, Pennsylvania

OCCASIONAL PAPER NO.4

May 1968

TABLE OF CONTENTS

	<u>Page</u>
PARTICIPANTS OF THE 1967 PENNSYLVANIA STATE UNIVERSITY- JUNIATA COLLEGE FIELD SCHOOL	iv
FOREWORD	
Joseph W. Michels	1
SITE DESCRIPTION AND METHOD OF EXCAVATION	
John B. Huner	9
A PHYSICAL GEOGRAPHY OF THE RAYSTOWN RIVER VALLEY	
Russell Turner and John B. Huner	25
THE HUMAN SKELETAL REMAINS FROM THE WORKMAN SITE	
Donald M. Austin and John A. Brown	49
A PRELIMINARY REPORT ON THE STEATITE AND CERAMICS OF THE WORKMAN SITE	
John B. Huner and Pamela K. Smith	69
INITIAL ANALYSIS OF CHARCOAL MATERIALS AT THE WORKMAN SITE	
George Drobnock	127
FEATURES AND POSTMOLD PATTERNS OF THE WORKMAN SITE	
Charles C. Kolb and John B. Huner	143
HISTORIC PERIOD ARTIFACTS OF THE WORKMAN SITE	
Carla Lindeman Tiling	175
A PRELIMINARY REPORT ON THE LITHIC ARTIFACTS FROM THE WORKMAN SITE (36 Bd 36), BEDFORD COUNTY	
Carl A. Bebrich and Thomas Morgan III	193
SUMMARY OF THE INVESTIGATION OF SITES IN THE RAYSTOWN RESERVOIR	
John B. Huner	283
BIBLIOGRAPHY	301

PARTICIPANTS OF THE
1967 PENNSYLVANIA STATE UNIVERSITY-JUNIATA COLLEGE
FIELD SCHOOL IN ARCHAEOLOGY

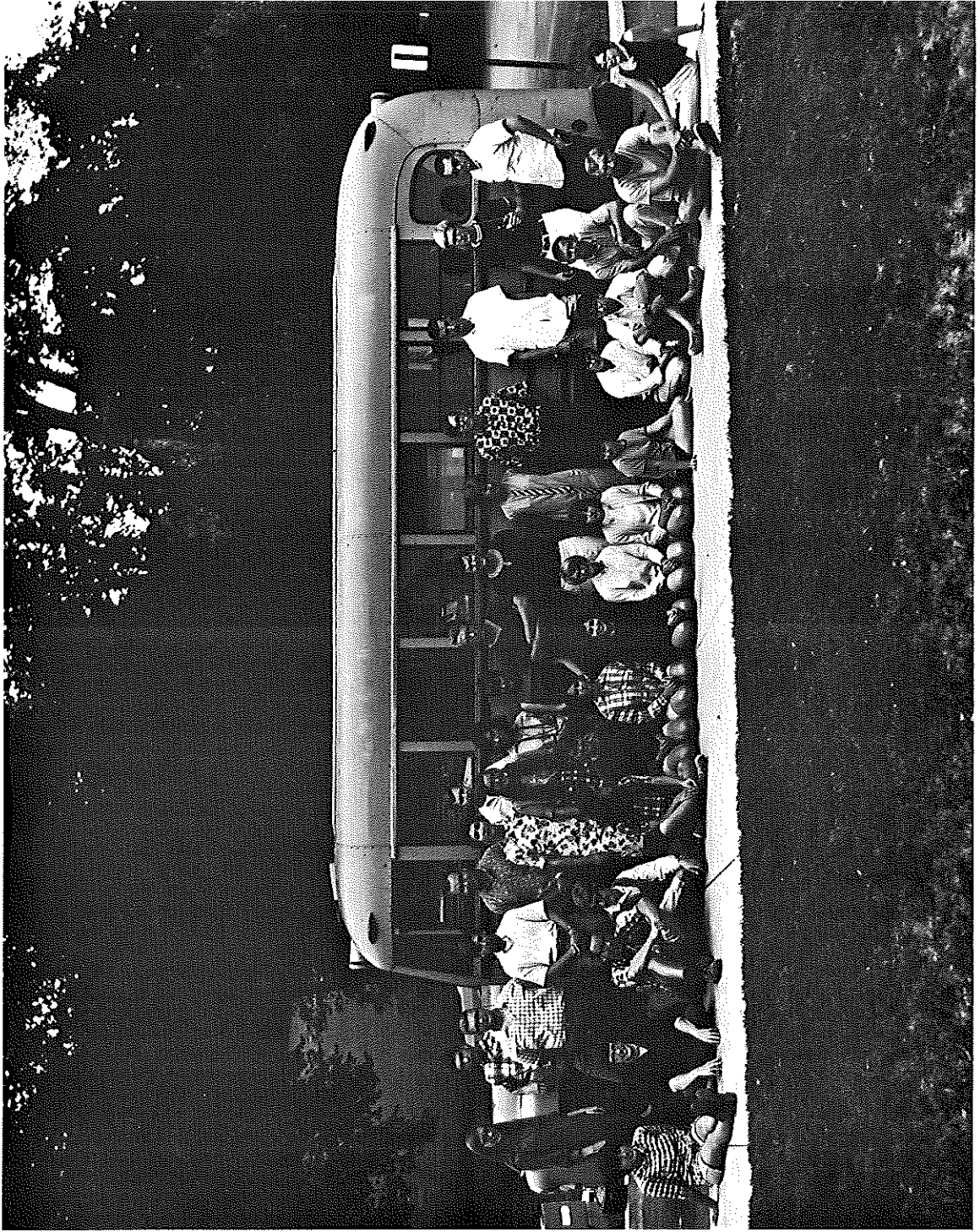
Joseph W. Michels, Director
John B. Huner, Field Director
James S. Dutt, Associate Field Director:
Sheep Rock Shelter Excavation
Paul Heberling, Associate Field Director:
Juniata College Section

Graduate Assistants

Donna L. Conway	Charles Kolb
Ralph Garruto	Lorraine M. Willey

Students

Cornelius B. Abelsma	Karen K. Kelley
Manuella Adrian	Robert R. McConnell
Donald M. Austin	William N. McGrath
Nona Berman	Joanna Myszkiewicz-Niesiolowski
Barbara L. Best	Janet N. Rehm
Joe P. Bowser	Laurie A. Rohde
John A. Brown II	Paul D. Ruskin
Sybil M. Calabro	Bruce Russell
Diane B. Cohen	Muriel A. Ryan
Susan Conway	Bette Salmon
Lynn E. Dixon	Harvey M. Smith
George Drobnock	Pamela K Smith
Terry L. Gamber	Betsy Taylor
Rachel A. Green	Russell T. Turner
Judith A. Heberling	Jeanne Wolfe
Edward Herrick	Bonnie D. Zahniser



Participants of the 1967 Pennsylvania State University - Juniata College Field School

EDITOR'S NOTE

Due to unforeseen difficulties this report was not published until May, 1970; two years later than expected. A few of the chapters, including the Foreword, had already been printed and assembled when we made the decision to postpone completion. There have been a few changes in content and authorship as a result of the delay. The chapter on lithic artifacts was ultimately written by Carl Bebrich and Thomas Morgan III. The chapter entitled "Observations on the Culture History of the Workman Site" has not been included owing to the fact that critical supporting chapters were not completed until press time. One unexpected chapter, on the historic artifacts of the Workman site, has been included thanks to the efforts of Carla Tiling. Notes on documentation and data processing can be found in Volume Three of "Archaeological Investigations of the Sheep Rock Shelter Site". We have tried to minimize the effect of this delay, and the associated revisions, on the chapters already printed. We regret the delay and hope that the considerable quantity of new information will compensate the readers who have been patient so long waiting for this 1968 report.

FOREWORD

by

Joseph W. Michels

INTRODUCTION

During the summer of 1965, Ira F. Smith conducted a site survey of the Raystown Reservoir for the National Park Service (Smith 1966). He located thirty-five sites and recommended that several be given high priority when planning future excavations connected with the recovery of the archaeological resources of the Raystown Flood Basin. The Workman Site (36Bd36) is one of these high priority sites, and this report describes the preliminary findings of the 1967 excavation season.

The Workman Site Report is the second in what we hope will be a series of reports on the archaeology of the Raystown Flood Basin. The first report, issued in three volumes, describes the archaeology of Sheep Rock Shelter (36Hul) (Michels and Smith 1967; Michels and Dutt 1968). Sheep Rock Shelter is a deeply stratified site containing nine recognizable components ranging from Early Archaic to Historic Susquehannock. Amply dated by radiocarbon dating and stratigraphy, Sheep Rock Shelter has become the "Rosetta Stone" for the identification of archaeological components in the Raystown Flood Basin. The Workman Site, and other sites recommended for excavation by Ira Smith, can be periodized and culturally defined in relation to the component-assemblages of Sheep Rock Shelter.

This, of course, offers archaeologists of this region the opportunity to conduct a highly fruitful settlement pattern study. The Raystown Branch of the Juniata River forms a natural interaction sphere within the Ridge and Valley Province. Its system of community settlements and the economic behavior and socio-political organization of its local population can be studied diachronically with a high probability of success. We are hopeful that the National Park Service will be able to continue its support of the salvage archaeology of this area during the few years that remains before the new dam is completed and the basin begins to flood.

This report is not a final report. It presents the preliminary findings of one season of excavation (including initial testing conducted during 1966) and one academic year of laboratory analysis by the students and staff of the Pennsylvania State University-Juniata College Field School in Archaeology. Juniata College plans to conduct further excavations at the site during the summer of 1968 under the supervision of Professor Paul Heberling. Their work will shed additional light on the size of the Woodland community at the site.

In the first chapter of this preliminary report, John Huner describes the Workman Site and discusses the method of its excavation. The following chapter on the physical geography of the Raystown Branch of the Juniata River by Russell Turner draws our attention to the topography of this region. The general pattern of site distribution along the river in this region is described and

illustrated, and several factors of human settlement are discussed in connection with this distribution.

In the third chapter, Donald Austin and John Brown provide a full osteological description of the human skeletal remains recovered from the Workman Site during the 1967 season. Comparable data is available in the Sheep Rock Shelter report. A number of interesting developments with respect to ceramic classification and interpretation are reported by John Huner and Pamela Smith in their chapter on the pottery of the Workman Site. Carl Bebrich and Ewa Niesiolowski have collaborated on an extensive description and preliminary analysis of the lithic artifacts recovered at the Workman Site. It is largely through their work that we can appreciate the pronounced Late Archaic utilization of this site. Again, by reference to the Sheep Rock Shelter findings, component identification was efficiently and reliably achieved.

Post mold patterns, features, and the distribution of diagnostic artifacts, all play a role in the reconstruction of the community patterning of the Workman Site. A preliminary evaluation of the data is provided by John Huner and Charles Kolb in the sixth chapter of this report.

The settlement pattern of prehistoric populations along the Raystown Branch of the Juniata River is a primary research objective of our long-term archaeological program in this area. John Huner discusses the evidence collected by Ira Smith during 1965, by Michels and Smith in 1966, and by Michels and Huner in 1967. A second site survey is needed, and the excavation or testing of a number of additional key sites is required before an adequate picture of the settlement pattern of this region is achieved. However, John Huner does review our present state of knowledge and suggests useful hypotheses regarding this topic.

A preliminary synthesis of the data reported in the chapters already described is provided in a chapter entitled "Observations on the Culture History of the Workman Site" written by John Huner and myself. The primary task of such a synthesis is to generate hypotheses that can be used to guide future investigations of the site and the region. Although no radiocarbon dates have been processed from the Workman Site, the charcoal samples are reported so that the reader will be aware of this potential for chronometric dating at the site. Notes on documentation and data processing are included for a similar reason. Since much of our primary data has been coded on IBM keypunch cards, efficient retrieval and manipulation of the data is possible, and offers considerable research potential.

THE PENN STATE-JUNIATA FIELD SCHOOL IN ARCHAEOLOGY

One of the very gratifying aspects of an archaeological program such as this is the extent of cooperation among individuals and institutions that is achieved in making the program a success. This past season of field work was undertaken jointly with Juniata College, Huntingdon, Pennsylvania. The Penn State-Juniata Field School in Archaeology was the first experiment in co-sponsored archaeological instruction for Central Pennsylvania, and we all felt that it was a great success. Juniata College provided one member of the field school staff, Professor Paul Heberling, physical facilities (laboratory, dormitory and dining accommodations), some field equipment, and one expedition vehicle. Penn State provided six members of the teaching staff, the bulk of the field equipment, two expedition vehicles, and an archaeological reference library. Both institutions supplied students, who enrolled for the course at either Juniata College or Penn State at their option.

There are several important aspects to such institutional cooperation. First, such arrangements augment the capability of both institutions. Penn State needs a host institution for large-scale archaeological field work when it is to be located at some distance from University Park. Without adequate physical plant facilities and services the logistics of such field work become extremely burdensome, and the size of the program usually has to be reduced.

Juniata College, and other institutions which do not have a developed anthropology program, also benefit by such co-sponsorship in important ways. Members of their teaching staff are given an opportunity to develop the necessary skills and background for conducting local archaeological programs in the future. The student body of the college is given an opportunity to enroll in a course which would not otherwise be offered by the institution. Tuition generated by the course goes directly to the college, rather than to some distant university. Similarly, the college's physical plant can be more efficiently utilized during the summer months by the presence of such a program.

ACKNOWLEDGMENTS

We are very much indebted to Dr. John L. Cotter, Chief of Archaeological Research for the Northeast Region, National Park Service, for his continued financial support of our survey and salvage programs within the Raystown Dam Flood Basin, of which the Workman Site excavation forms a part. We are similarly in debt to Dr. S. K. Stevens, Executive Director of the Pennsylvania

State Historical and Museum Commission, and to the other members of the commission, for their continuing financial support of the Sheep Rock Shelter excavation and related activities that substantially benefits our investigations of the Workman Site.

Mr. and Mrs. Robert Workman, Bedford County, Pennsylvania, deserve our many thanks for the assistance they have rendered the project. As property owners of the Workman Site, they have continually welcomed our presence; taking a keen interest in the day-to-day developments connected with the excavation. Their hospitality, and the inconvenience they tolerated, will always be appreciated by us. Mr. Ralph Ross, a neighbor of Mr. and Mrs. Workman, also deserves our sincere thanks for his many acts of thoughtful assistance throughout the eight weeks of our stay on the Workman farm. We also wish to thank Mr. Everett Baker and the Johnstown YMCA for granting us permission to examine the archaeological resources on their land.

Professor Paul Heberling, of Juniata College, deserves our very warm appreciation for all he did on behalf of the program. As the official representative of Juniata College, he expertly coordinated the needs of the project with the facilities of the Juniata campus. Long before the field school arrived on the Juniata campus, Professor Heberling had stimulated great interest in the program among the students and faculty of the college, providing for an atmosphere of genuine enthusiasm and hospitality that lasted all summer. Furthermore, Professor Heberling contributed his impressive teaching skills to the program as a member of the field school teaching staff. We look forward to further collaboration between Professor Heberling and the Penn State anthropology faculty in the archaeological investigation of the Raystown River Basin.

This report would not have been produced in such a short time and in so well-organized a form without the efforts of our Assistant Editor, Lorraine Willey. She coordinated the activities of the many student volunteers. The task of encouraging and assisting authors to complete their manuscripts on deadline was handled with considerable skill. In addition, she assumed responsibility for keeping track of line drawings, half-tone plates, manuscripts, bibliographies, proofreading, stencil correction, and collation; handling them all with a professional air and good spirits. I speak for all the authors when I extend to her my warmest thanks for a job well done.

Lorraine was aided by four volunteer assistants who shared with her many of the editorial tasks: Pamela Smith, Carl Bebrich, Sally Frear, and Sybil Calabro. All have been involved with the editorial labors right from the beginning, giving aid in connection with virtually all of the editorial jobs. They were of great aid in connection with manuscript editing and proofreading. Proofing of mimeo stencils and the collation of the volumes required much work to accomplish it in such a short time. Practically everyone connected with the anthropology laboratory gave us a hand

at one time or another. However, some deserve special mention: Joyce Huner, Lynn Dixon, Kate Trout, Diane Cohen, Nona Berman, Janet Rehm, Don Austin, Charles Kolb, and Mike Steffy.

Christine Nelson deserves our thanks for volunteering to perform much of the keypunching in connection with converting the artifact catalogue to an electronic data processing form. Helen Taylor is warmly appreciated by all of us for operating the mimeograph machine with such skill. Similarly, we are indebted to Rennell Taylor for the fine multilith work that is to be found in this report.

I sincerely thank Kay McKinley for again doing such a splendid job in typing the manuscript stencils. She was responsible for the fine typing to be found in the Sheep Rock report, and we are delighted that she was available to type this manuscript.

Last, but certainly not least, I want to thank my wife, Gabriele A. Michels, for her many services in connection with data processing. Her outstanding skills as a computer programmer were placed at the authors' disposal; greatly facilitating their work. She exercised much patience and skill in instructing all of us in the use of the IBM equipment at the Penn State Computation Center, and in educating us in the range of computer applications connected with this archaeological investigation.

SITE DESCRIPTION AND METHOD OF EXCAVATION
OF THE
WORKMAN SITE

by

John B. Huner

ABSTRACT

The geographical location of the Workman Site and its proximity to historic communities and communication routes is examined. Several possible exploitations of the micro-environment by the pre-historic inhabitants are postulated. In addition, the grid system, methods of excavation and general field technique employed are discussed.

ACKNOWLEDGMENTS

The author expresses his gratitude and thanks to the many people who aided in the excavation of the Workman Site. First, I would like to thank Mr. and Mrs. Workman who extended their hospitality and help for the second year; Mr. Ralph Ross and other local residents whose interest in our endeavor aided us upon numerous occasions; the staff of Juniata College who made our stay most enjoyable; and last, but of prime importance, the 37 students and staff members whose blood, sweat, and tears made this report possible.

TABLE OF CONTENTS

	<u>Page</u>
ABSTRACT	11
ACKNOWLEDGMENTS.	12
TABLE OF CONTENTS	13
LIST OF ILLUSTRATIONS.	14
I. INTRODUCTION.	15
II. GEOGRAPHIC LOCATION	15
III. HISTORIC OCCUPATION	15
IV. LOCAL ECOLOGY	18
V. HISTORIC ARCHAEOLOGICAL INVESTIGATION	19
VI. METHOD OF EXCAVATION	19

LIST OF ILLUSTRATIONS

	<u>Page</u>
Figure 1. Map of Northeastern United States	16
Figure 2. Geographical Region of the Workman Site	17
Figure 3. Grid Layout and Contour Map of 36Bd36. . . .	20
Figure 4. Early Stage of Excavation of the Workman Site .	22
Figure 5. Completed Excavation at A, B, and C Rows. . . .	22

INTRODUCTION

As is true of any archaeological site, the Workman Site (36Bd36) is a complex of systems. This complex of systems includes not only the prehistoric inhabitants and the cultures that they bear, but also the European inhabitants, the geographic location of the site in respect to other settlements (both prehistoric and historic), its physiographic attributes, and the ecological niche it occupies.

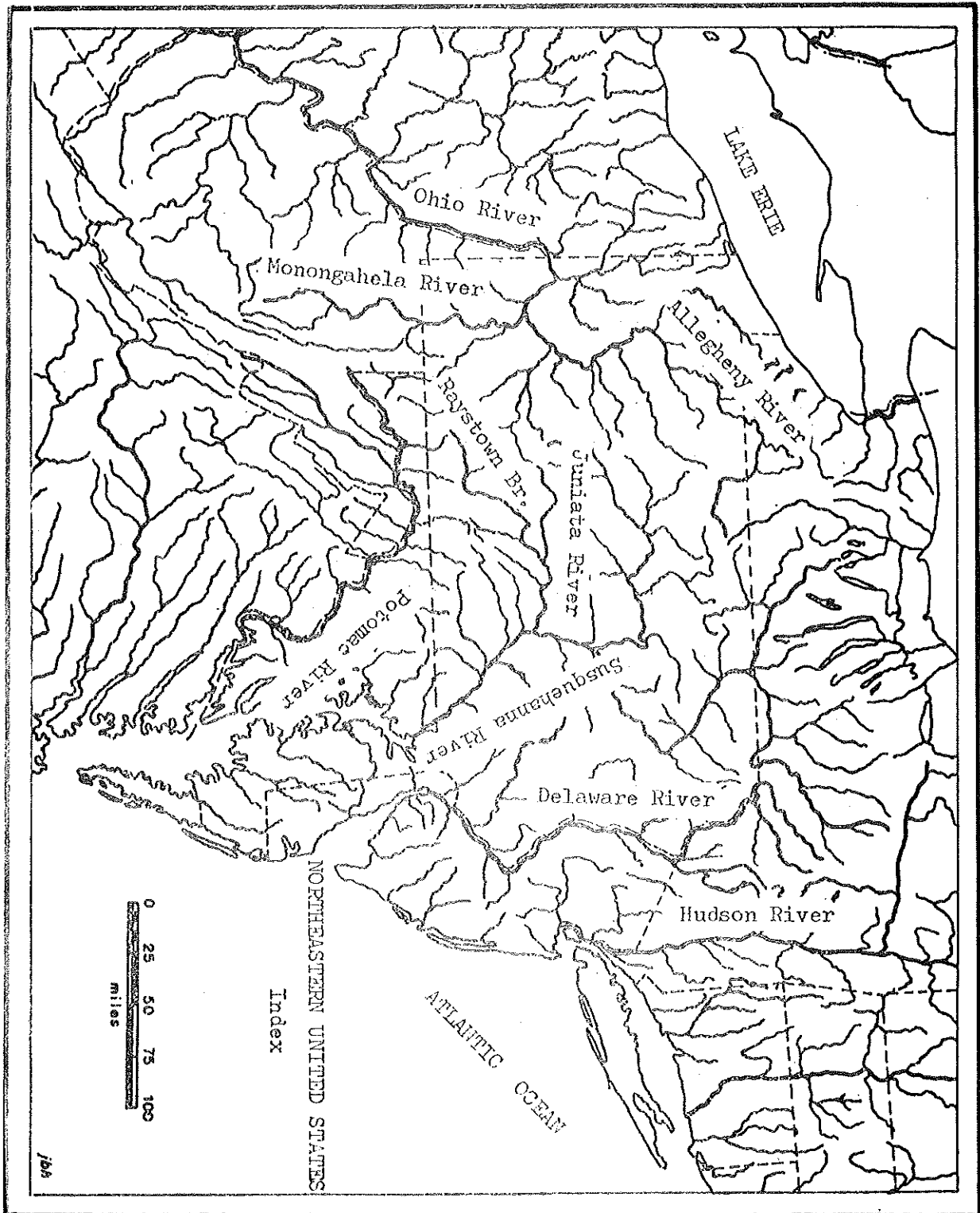
GEOGRAPHIC LOCATION

Adjacent to the town of Saxton, the Workman Site is located along the Raystown Branch of the Juniata River in the village of Stonerstown, Bedford County, Pennsylvania (U.S.G.S. 15' Quadrangle Everett - 78°15'W 40°13'N) (see Figs. 2 and 4). This location is approximately thirty miles up-stream from Sheep Rock Shelter (36Hul) and Standing Stone, the historic Indian village which is now the site of modern Huntingdon (see Fig. 1). The Workman Site is also approximately thirty miles downstream from Bedford (formerly Raystown), an early trading post. This accessible half-way location might render some plausibility to the local legend (related by several informants) that the Stonerstown area was an overnight camping spot when the Indians were traveling between Standing Stone and Raystown. In addition, the Workman Site is adjacent to the "Warrior's Path" which more or less follows the Raystown Branch of the Juniata River (Wallace 1965). This places the Workman Site in a favorable location for the reception and transmission of cultures.

HISTORIC OCCUPATION

It appears that the European or historic occupation of the Workman Site dates after 1906. A photograph taken in that year shows the site area under forest cover. (Photograph available at Miller's Gulf Station in Stonerstown or from Ralph Ross, a local resident.) After this time there was a series of five occupants on the land. The fifth and present owner is Mr. Robert H. Workman. Furthermore, it should be noted that the Raystown Basin has been settled since the 18th century and was heavily logged in the last part of the 19th century. It seems hard to believe that such a large stand of trees would have escaped the timber industry of that period. Apparently, the stand was second growth timber too

Figure 1. Map of Northeastern United States



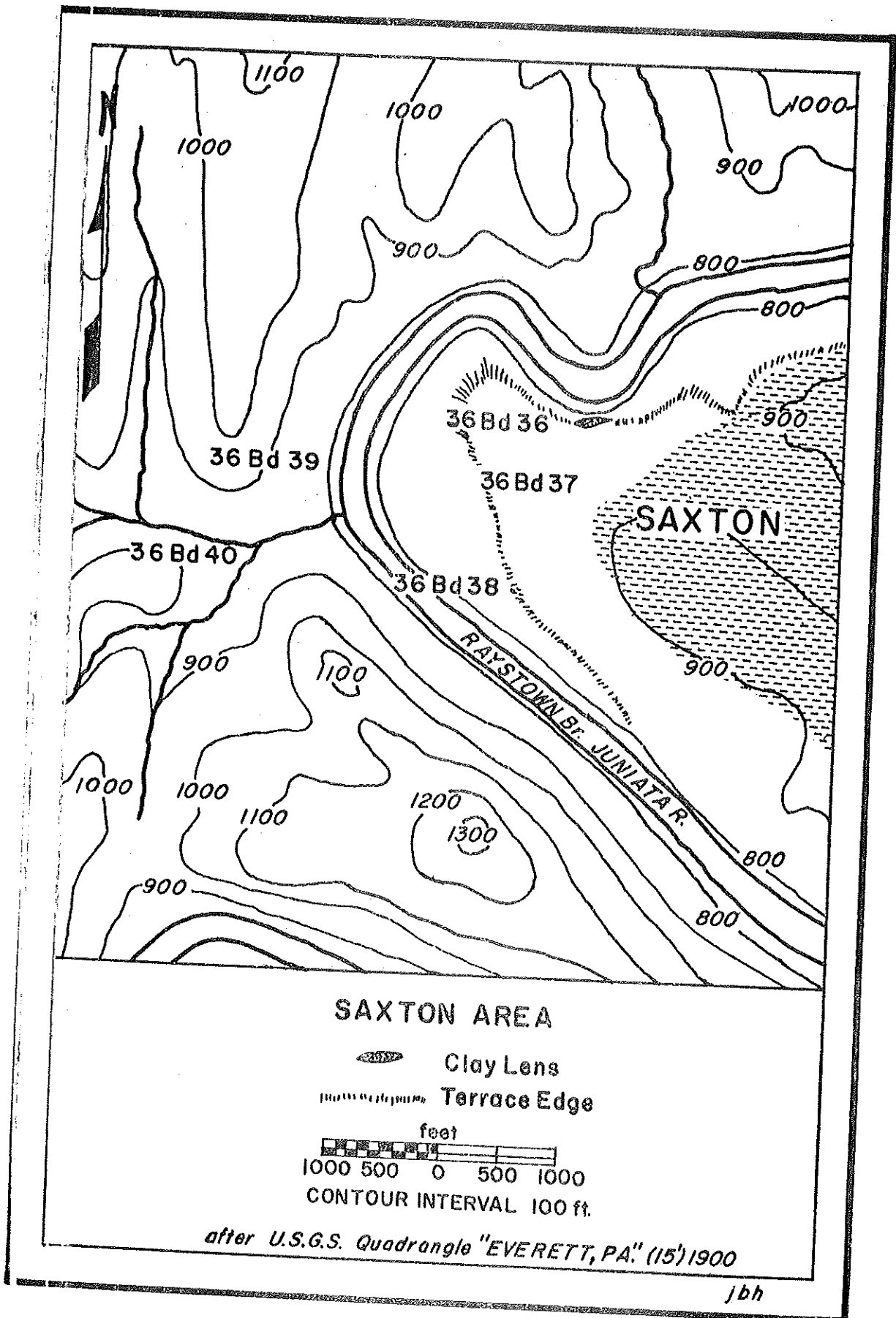


Figure 2. Saxton Area

small to be profitably logged during the 1800's, but which had become sizable during the early 20th century.

The Workman Site is located on a small terrace which, judging from the presence of large rounded cobbles, is of alluvial origin and probably of Pleistocene Age. This is highly significant, for the area of the site was not inundated during the "Flood of 1936" or the "Johnstown Flood of 1889" and since flooding is much more prevalent during historic times (due to a denuded watershed) it can be assumed that high water was never a problem during prehistoric times. The lack of recent alluvium on the site tends to bear this out.

LOCAL ECOLOGY

The location of the Workman Site provides easy access to three ecosystems - the uplands and the terrace proper; the flood plain or "bottoms"; and the river. This setting would provide many excellent and diversified food resources. In addition to the numerous food sources these ecosystems would provide, there were many raw materials which would add substantially to the material culture of the prehistoric inhabitants of the area.

The flood plain has an excellent alluvium on which to produce crops and would be especially beneficial during the horticultural or Woodland Period. The constant renewal of soil by flooding and the relatively high water table would provide for a comparatively abundant crop every year. For example, in 1966 there was a very poor corn crop in Central Pennsylvania because of drought, and one of the few fields which had normal production was the Workman's field. This field is located in the "bottoms" or flood plain and the sandy-silt which is deposited during the annual high water stage of the river acts as an aquifer, which when combined with the normal high water table of the flood plain produces excellent conditions for the growth of plants, even when the rest of the area is suffering from drought.

The river, on the other hand, provided the excellent and obvious resources of shell fish and fish as well as water, and firewood in the form of driftwood. River cobbles furnished the prehistoric inhabitants with some of their raw material for stone implements. A large number of the river stones examined this summer proved to be of a silicious nature and appear to be highly similar to those materials utilized in the manufacture of the stone implements recovered at the site. In addition, there were other mineral forms such as sandstone, conglomerate, etc. that would provide material for what is commonly called "ground stone tools". Furthermore, this same lithic material abounds in the soil of the site.

It seems hardly necessary to enumerate the resources supplied by the upland forest environment. Other than food, such things as firewood, fibers for cordage and cloth, raw hides, construction materials, etc. all abound in copious quantities in such an ecosystem.

It does not serve our purposes to delve too deeply into the micro-ecology of the Workman Site at this point in the report for man is not confined to small, spatially limited areas, but rather ranges over a large territory whether living in a permanent village or a temporary camp. The subject of environmental uses of the Raystown Basin by the prehistoric inhabitants will be more fully elucidated in a later chapter of this report.

HISTORY OF ARCHAEOLOGICAL INVESTIGATION

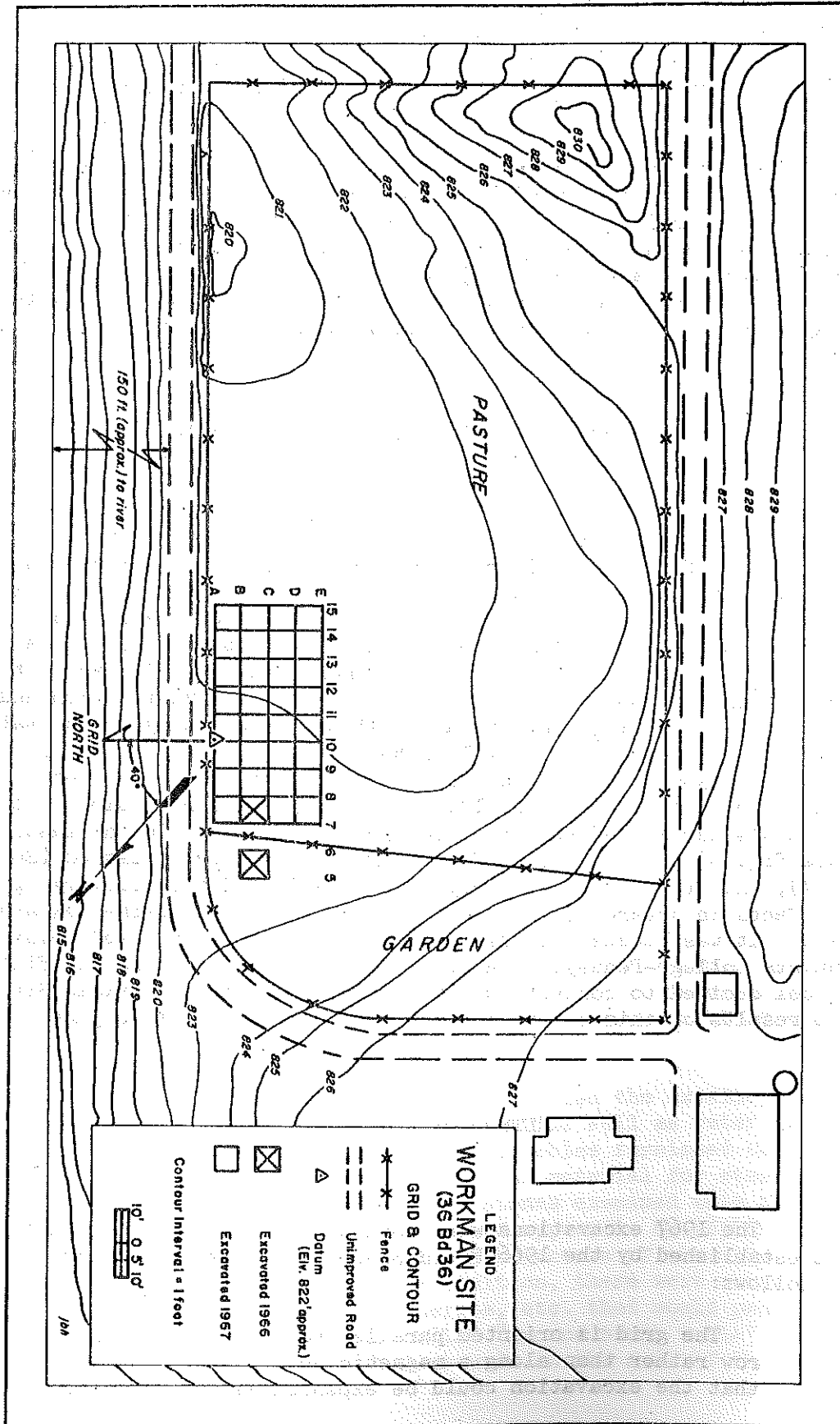
The Workman Site was first reported by Smith (1966:21) as the result of the initial archaeological survey of the Raystown Basin. Until that time there had been no scientific investigation of the site, although numerous collections had been made by amateurs in the area. Smith examined these collections and made a brief surface collection from the Workman's garden. It was in this report (Smith 1966) that he recommended further investigation and excavation be undertaken. As a result the 1966 Pennsylvania State University Archaeological Field School began excavation in the Summer of 1966. The excavation consisted of two 10 by 10 foot squares excavated to "subsoil", one in the Northern portion of the Workman's garden and the other ten feet to the East in the pasture (see Fig. 3). The results of this excavation were published (Smith 1967), and it was the discovery of a firepit and the recovery of artifacts in square B7 that led Smith to recommend further excavation. It was because of this recommendation that the 1967 joint Juniata College-Pennsylvania State University Archaeological Field School decided to conduct further excavations at the Workman Site. The results of this excavation are the subject of this report.

METHOD OF EXCAVATION

The 1967 excavations were conducted utilizing the grid layout established by the 1966 Field School. It has been described as follows:

The grid is oriented parallel to the pasture fence row rather than along a magnetic north-south line so that the excavation could be expanded either parallel

Figure 3. Grid Layout and Contour Map of the Workman Site



to or perpendicular to the river as the artifact concentration in either square might eventually dictate. The two base lines - the 'numerical' and the 'alphabetical' lines - are oriented perpendicular to one another through the primary datum which is a masonry nail embedded in the root of a nearby cherry tree. The alphabetic base line A corresponds to the fence row lying parallel to the river; line B is ten feet southwest from the fence row, etc. The numerical base line number '10' runs perpendicular to base line A through the datum with the numbers becoming progressively smaller as one nears the garden plot [mag. northwest] (Smith 1967:754).

It should be noted that the square was designated by the Northwest corner stake with the side of the grid closest to the river being considered North. Therefore, the 10 foot base line is 30° East of North (mag.). The area was staked numerically from "7" to "15" and alphabetically from "A" to "E", for it was felt that this was the area of site continuation and would require as little disturbance and inconvenience to the Workman family as possible by avoiding excavation in their vegetable garden (see Fig. 3). Excavations were begun along the "A" line retaining approximately one-foot balks on the edges of the grid squares thereby excavating an effective area in each "pit" or square of 9 by 9 feet. The bulk method was selected for it was felt that it would offer the most efficient method of excavation in as large an area as possible, maintain floor continuity, and also retain any stratigraphic distinctions which might appear. It provided the additional advantages of walkways over which wheelbarrows could be moved and a stable position for corner stakes. Excavation, at first, was in arbitrary 3 inch levels and each square was excavated to "subsoil" which was easily recognized by its red, oxidized state which differed markedly from the dark "top soil". The arbitrary 3 inch levels were abandoned when it was realized that the "top soil" was, in reality, a plow zone and no stratigraphy would be retained or recognized because of the constant overturning and mixture due to plowing. This was especially obvious when it came to the recognition of post molds which extended into the "subsoil" about 2 inches. They had, in fact been "cut off" by the plow. It should be noted, however, that there was a transitional zone between the "plow zone" and the "subsoil" which was approximately 1 inch thick, created by the tunneling of earthworms - creatures well known for their soil mixing habits and most numerous at the Workman Site. In addition, the lack of a well defined soil profile with exception of a very recent grass cover supported the position that it was not necessary to retain stratigraphic levels except for the distinction between the "plow zone" and the "subsoil". As the square was excavated to the "subsoil floor" the earth was screened and all artifacts were placed in level bags which were labeled as to square and depth below datum. At the completion of the excavation of the site, the balks were removed and the earth was troweled to recover artifacts which were then placed in level bags with the appropriate



Fig. 4 Early Stage of Excavation of the Workman Site

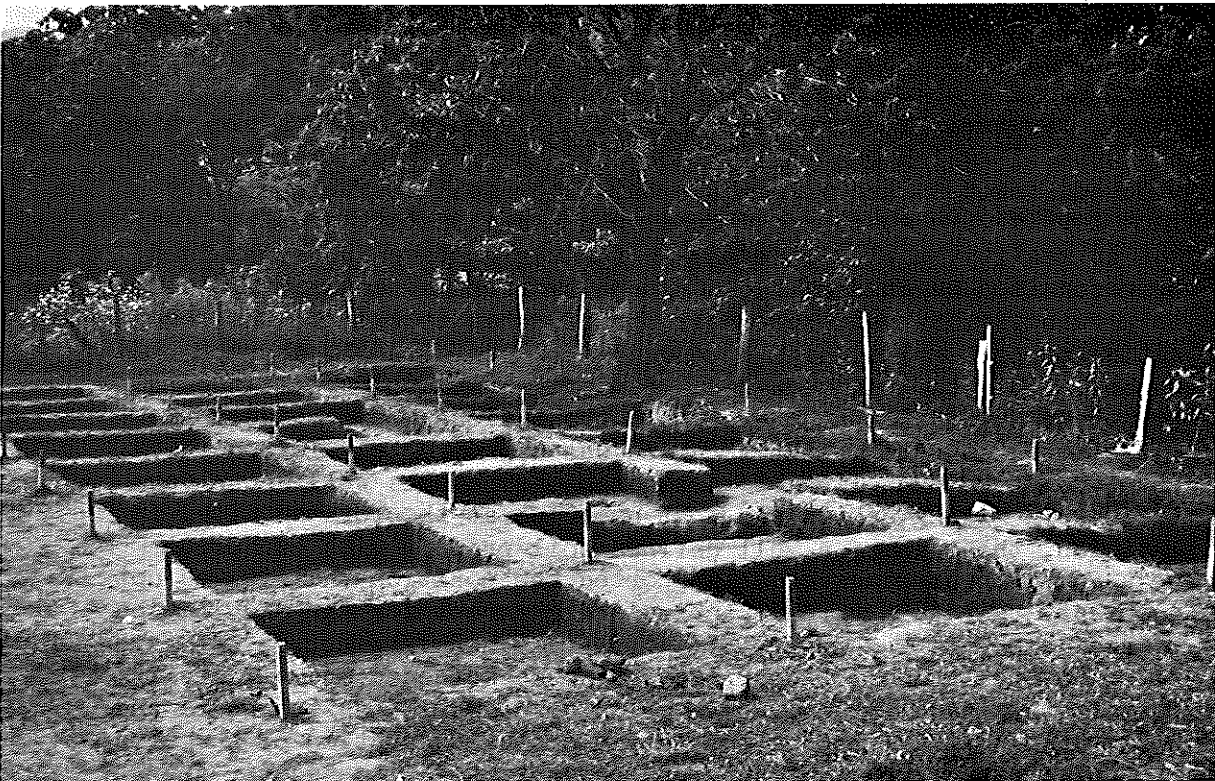


Fig. 5 Completed Excavation of A, B, and C Rows

provenience. The troweling accounted for approximately 67.4 cubic yards of processed earth whereas screening accounted for 288 cubic yards. While it was realized that troweling did not offer as fine a method of artifact recovery as screening, the field season was drawing to a close and expediency was necessary.

Having removed the "top soil" or "plow zone" and therefore exposing the "subsoil", the "floor" or top of the "subsoil" was scraped with trowels, brushed with wiskbrooms and dampened with a fine mist of water from a garden sprayer. During the drying process the "floor" was examined for any soil color and texture differentials which might indicate features and post molds. These were then outlined, plotted in three dimensions and a face drawing of the "floor" was made. Then the features and post molds were verified by cross-sectioning, and all artifacts recovered were kept separate. Cross-sectioning offers a method by which both profile and depth can be discerned. If the soil stain in question proved to be a feature, then it was assigned a feature number and artifacts were associated by this number. Features were numbered in the order of their uncovering with the prefix "67" added to distinguish them from those recovered in previous years or those that might be uncovered in the future. The same procedure was followed with burials which were given their own numerical sequence. It should be noted that while the cross-sectioning did present a vertical profile, care was taken to follow the outline of the feature by soil color changes which indicated the perimeter of the feature. After the profiles of the cross-section had been drawn, then the rest of the feature was removed and another profile was drawn which was perpendicular to the cross-section and the outline of the feature was sketched. After this was completed, a photograph was made of the exposed feature.

Excavations were conducted at the Workman Site from July 3 to August 11 with a five day week. During this period of time the soil from an area of 3200 square feet and approximately 1 foot in depth was removed. This required the processing of approximately 355.4 cubic yards or 125 tons of earth. The period of time was thirty days, however, approximately five days during this period were lost because of rain. Two crews of eight students each were utilized as laborers, yet at times only one crew of eight was working due to other commitments. Thus, an estimated total of 320 man days were utilized in excavation of the Workman Site. It was found that after the students became acquainted with digging procedures that the excavation of one pit (9 by 9 feet) could be completed in a day.

A PHYSICAL GEOGRAPHY OF THE RAYSTOWN RIVER VALLEY

by

Russell Turner
and
John B. Huner

ABSTRACT

The Raystown Branch of the Juniata River is situated within the most rugged portion of the Ridge and Valley Province. However, instead of being confined to the narrow water gaps or wind gaps which were cut by the action of streams through the ridges, the river flows through a rather broad valley providing spacious and relatively flat areas in which to live while having the benefit of east-west communication linkages. The alluvial plain of the river valley provides an excellent soil in which any of the crops known to Northeastern aboriginal inhabitants could be produced. Substantial erosion due to deforestation appears to date to the historic period. It is noted that by far the majority of sites are found on the down-river bend of a point bar meander. No correlation between soil productivity and subsistence pattern could be established on the basis of the location of archaeological sites dating to the Archaic and Woodland periods.

ACKNOWLEDGMENTS

The authors express appreciation for the aid and criticism given them by Charles C. Kolb and Miss Muriel Ryan whose assistance in the preparation of this report was invaluable.

Appreciation is also expressed to the Soil Conservation Agency of the Department of Agriculture, Huntingdon County, Pennsylvania, and especially to Tom Kraft, soil scientist on the staff, for his help in the understanding of soils and for making available as yet unpublished material; and to Jim Filson of Jim's Anchorage who made his boats available for river studies.

We also extend our thanks to Jim Vallentine, Huntingdon County Fish Warden, for answering our questions concerning the Raystown Branch of the Juniata River, and to Donna Conway who helped in the compilation of this report.

TABLE OF CONTENTS

	<u>Page</u>
ABSTRACT	95
ACKNOWLEDGMENTS.	96
TABLE OF CONTENTS	97
LIST OF ILLUSTRATIONS.	98
LIST OF TABLES	99
I. INTRODUCTION.	101
II. PHYSIOGRAPHY.	101
III. CHANGES IN THE PHYSIOGRAPHY.	104
IV. DESCRIPTION OF THE PRESENT DAY RIVER CONDITIONS .	105
V. LOCATION OF THE SITES.	105
VI. SOIL CORRELATIONS	114
VII. CONCLUSION	114
APPENDIX I. Identification and Provenience of Fish Scales Found at Sheep Rock Shelter.	117
APPENDIX II. An Analysis of the Mollusc Specimens of Sheep Rock Shelter	141

LIST OF ILLUSTRATIONS

	<u>Page</u>
Figure 1. The Raystown River Valley.	102
Figure 2. Location of Check Points in River Survey. . .	106
Figure 3. Reconstruction of Pre-Dam Conditions Along Area of Inundation.	111

LIST OF TABLES

	<u>Page</u>
Table 1. Description of the Raystown Branch of the Juniata River	107
Table 2. Topographical Distribution of Sites.	113
Table 3. Soil Type Correlation with Postulated Occupation- al Components	115

INTRODUCTION

Man has often been called a culture-bearing animal, and culture is certainly one method by which he adapts to his environment. It is necessary, therefore, to reconstruct the environment in order to study the lifeways of prehistoric groups. While this study is confined to the area of Huntingdon and Bedford Counties in Pennsylvania, it should be noted at the outset that human groups participating in an Archaic or Woodland subsistence pattern seldom remained in one given location. That is, although they may have tended to spend the majority of their life in one area, they can be expected to have ranged from area to area at certain times, thus traversing a variety of ecological niches. For example, steatite vessel fragments have been recovered from sites in the Raystown Reservoir Basin although the natural environment of this region does not contain steatite deposits. It was, therefore, necessary for the inhabitants of the Raystown locality to exploit the Piedmont of Lancaster County -- directly or indirectly -- to obtain this material. Many other such instances indicate that man knew of other areas in which he could have settled. It, therefore, becomes interesting to try and establish what factors appealed to him in a given area.

Several interesting correlations between site locations and geographic factors were found. Unfortunately, this study was somewhat hampered by the fact that the present Raystown Dam has inundated portions of the river valley, and it was necessary to reconstruct the prehistoric river conditions, or pre-dam conditions as the case may be. Although the river basin (and ultimate flood pool) is the prime theme around which this report, and in fact all the archaeological investigations in this area, revolves, it may not be the most important ecological factor. Competing with the river for ecological primacy is the vegetative cover of the region during prehistoric times. This topic is treated elsewhere in the report.

PHYSIOGRAPHY

Based on work of Smith (1966) and Michels and Smith (1967) the 1967 joint Pennsylvania State University-Juniata College Archaeological Field School conducted a series of excavations along and near the Raystown branch of the Juniata River. This river valley is situated within the most rugged portion of the Ridge and Valley Province, more commonly known as the Appalachian Mountains. This great folded mountain range is oriented in a northeast-southwest direction, and extends from New York to Georgia. In Pennsylvania the Ridge and Valley Province is bordered on the west by the Allegheny plateau and on the east by Blue Ridge and Piedmont Provinces. Long parallel mountain ridges separated by lowlands are

characteristic of the area. These ridges, which are composed of hard sandstone and quartzite, have an average elevation of approximately 2,000 feet. Two of these ridges -- Tussey Mountain and Terrace Mountain -- bound the Raystown River Valley to the northeast and southwest respectively. In the case of the Raystown Reservoir, the lowlands between the two ridges are composed of red, brown and yellow shales. These shales form "rolling hills" which lie some 300 to 500 feet above the alluvial plain of the valley (Higbee 1934).

The Raystown Reservoir can be considered as that portion of the Raystown Valley which is located between the towns of Saxton, in Bedford County, and Huntingdon, in Huntingdon County, Pennsylvania. In this area of the Raystown River Valley the stream flows in a northeasterly direction. The drainage pattern approximates a trellis or rectilinear pattern, with the Juniata River and its Frankstown and Raystown branches flowing at right angles to the mountain barriers, thus, forming natural east-west passages linking the adjacent valleys. The secondary streams flow within the valleys in a northeast or southwest direction, parallel to the ridges. Instead of being confined to the narrow water gaps or wind gaps which were cut by the action of streams through the ridges, the river flows through a rather broad valley providing spacious and relatively flat areas in which to live, while having the additional benefit of east-west communication linkages. In addition, both Huntingdon and Bedford Counties are well watered. There is an adequate rainfall and the majority of streams retain moderate rates of flow throughout the year; facilitating water transportation when water travel came into use.

The relief can be considered to be steep, with the majority of slopes being greater than 30%. The on-going process of erosion has prevented soil material from accumulating and forming deep, mature soils in this area. Thus, 98% of Huntingdon County contains relatively shallow soils. The upland soils are primarily derived from the weathering of shale and sandstone and are acidic in nature as a result of leeching in the humid climate. These mountain soils are found to be deficient in nitrogen, organic matter, lime and phosphorous, and are not well-suited for the growth of crops, such as corn. The Level land which is more suitable for farming represents only a small percentage of the relief of the county as a whole. Level land does occur extensively along the alluvial plain of the river valleys which are generally narrow and are bounded by the steep slopes of the rolling lowlands. This alluvium provides an excellent soil on which any of the crops known to Northeastern aboriginal inhabitants could be produced.

CHANGES IN THE PHYSIOGRAPHY

Although there has been some uplifting as evidenced by the fact that the Raystown Branch of the Juniata is entrenched (i.e. the meandering is confined by the geological structuring), this appears to have been gradual, not affecting the physiography of the region as far as human occupation is concerned. The only active physiographic factor in the area is the river. Due to the dynamic nature of fluvial and alluvial processes, and the affect of climatic change on these processes, the river is potentially susceptible to rather rapid change in relatively short periods of time. This obviously plays a prime role in the configuration of the environment and it is absolutely necessary to know the prehistoric river conditions to make meaningful assumptions.

The most obvious source of river flux would be increased rainfall or dehydration of the area. Climatic changes during the period of human occupation of the Raystown Reservoir (i.e. the geologically Recent Period) were certainly not of the same magnitude as changes during the Pleistocene, however, some fluctuation did occur. During the Early Archaic Culture Period the climate appears to have been cooler and damper. Kovar (1964:18; 1967:100) has reported that prior to 7000 B.C. the dominant vegetation was a coniferous forest throughout the region, as evidenced in the pollen columns of Sheep Rock and Bear Meadows. At approximately 7000 B.C., there was a shift to mixed hardwoods. This shift produced a more abundant and varied food resource such as mast, berries, etc. which, in turn, attracted numerous game animals including deer; making the region more amenable to an Archaic lifeway. The exact effect this change had on the river is not known.

Guilday and Parmalee (1955) have reported that there was a change in the relative frequency of rabbits and flying squirrels in the stratigraphic sequence of Sheep Rock. This change indicated to them that there was a clearing or removal of the forest cover (the natural habitat of the flying squirrel) and a consequent increase in the rabbit population due to the availability of an agricultural field ecology. Deforestation can effect the river since erosion would be greater, but ethnographic examples of northeastern aboriginal horticulture indicated that it was not the Indians' practice to clear vast areas of the watershed simultaneously, the effect would, therefore, be minor when compared to the major removal of the forest cover by European settlers.

As the forest cover was removed during the colonial and later periods, the rate of erosion increased. As a result, the sediment load became greater than the tractive capacity of the river (i.e. its ability to carry sediment) permitted and the sediment was dropped causing the river to silt up. The river as

it became shallower, became wider and spread over its narrow banks. This has undoubtedly had some effect on aquatic life, through changes in the bottom configurations, channel location and amount of sediment. In addition, the flood control projects of recent times have contributed further complications to the fluvial action of the Raystown Branch of the Juniata River.

DESCRIPTION OF THE PRESENT DAY RIVER CONDITIONS

Investigations of the present day river conditions were undertaken to answer several questions: does the ecology of the river vary significantly from place to place, and if it does, can study of the unaffected river be extrapolated into reconstructing the area inundated by the present dam and then how would these conditions affect the Indians living along its banks, the location of their settlements and their lifeways? The river was investigated from the Entriken Bridge to Jim's Anchorage downstream approximately 22 miles. To facilitate recording of the river's characteristics at given points, the area above the pool of the present Raystown Reservoir was divided into 22 sectors. Further subdivision was made when physical changes became apparent. Measurements consisting of approximation of depth and speed were taken at various checkpoints, using the velocity of the river below the Entriken Bridge as a point of comparison (arbitrarily defined as of "moderate" velocity). Thus, on a relative scale each subsequent measurement was referred to as "fast", "moderate" or "slow" relative to the speed of the river at Entriken Bridge. Observations were also made at the checkpoints regarding aquatic vegetation, mollusk concentrations, and type of river bottom. The checkpoints can be seen in Figure 2 and their description in Table 1. It was noted that the inclination of the river bed was greater on the north side with a corresponding decrease in depth and velocity, and an increase in water temperature and mollusk concentration. Certain other characteristics including depth, speed, type of bottom cover and mollusk concentration were observed to vary in a periodic manner. These changes along with attempted reconstruction of the region inundated by the affects of the Raystown Dam are plotted on Figure 3.

LOCATION OF THE SITES

During the investigation of the river it was noticed that a definite pattern of site location along the river could be observed. The majority of the sites were found to be within the alluvial valley proper, while a fewer number of sites were

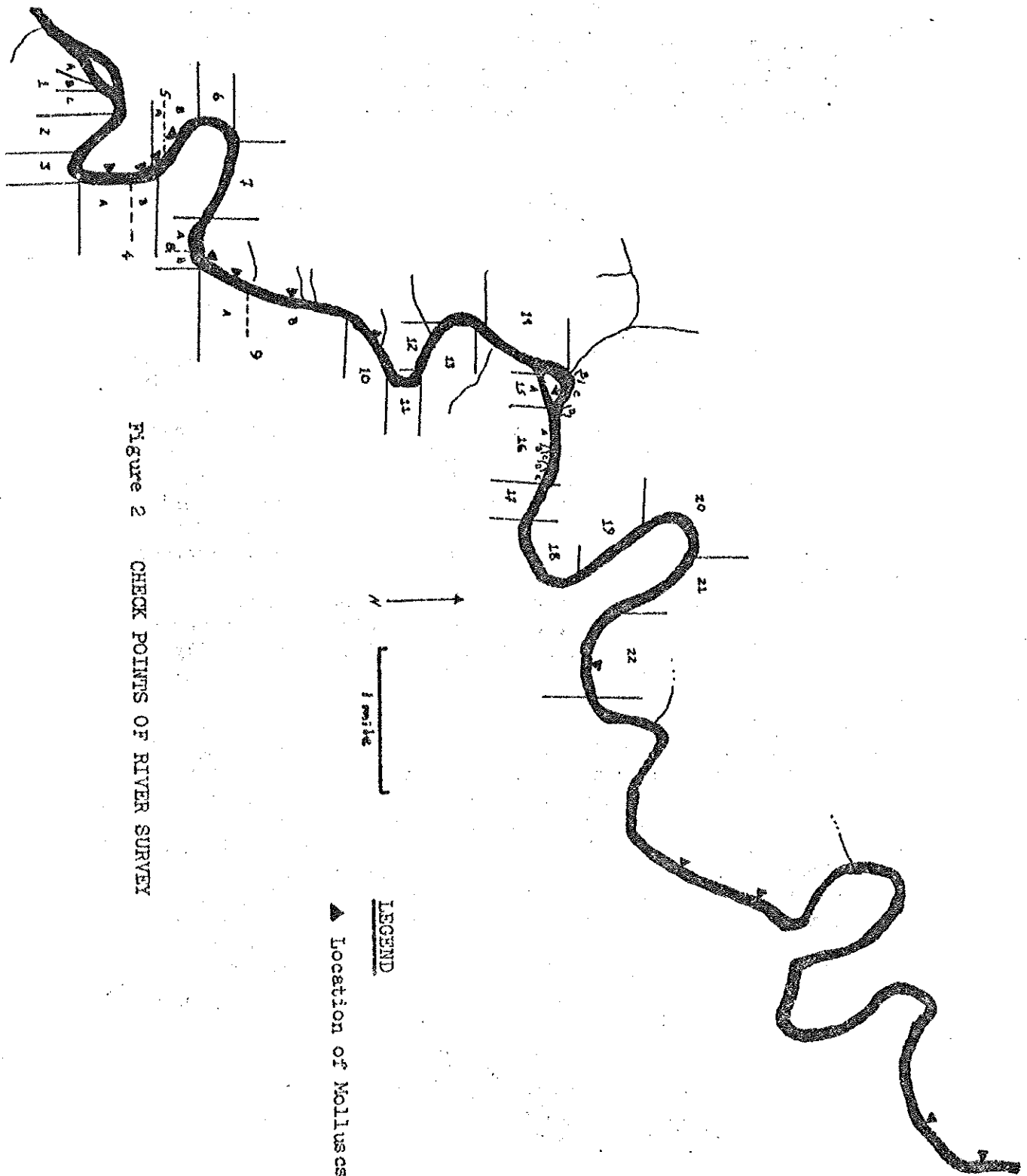


FIGURE 2 CHECK POINTS OF RIVER SURVEY

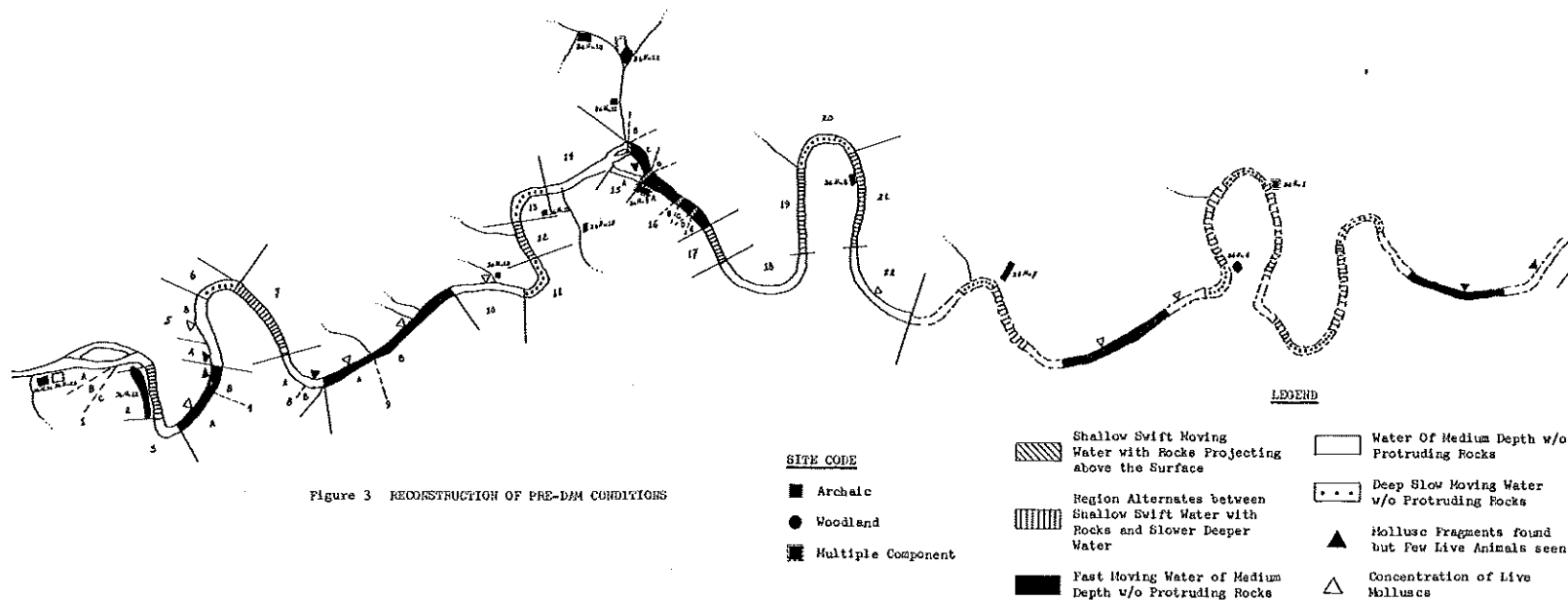
Sector	River Depth	Current Velocity	Description of River	Mollusk Occurrence
1a	3-4 feet deep	Moderate current	Grassy bottom	Several live mollusks were found approximately 15 feet off the northern bank where the river was only 9-18 inches deep and the current was slower than in mid-stream. No mollusks were found mid-stream. Shell fragments, but no live mollusks were found. Broken mollusk shells observed.
b	6 inches deep	Fast current	Rocks above surface	
c	2-3 feet deep	Moderate current	Grassy bottom	
2	1-2 feet deep	Fast current	Rock concentrations break surface	
3	3 feet deep	Slow current	Marsh grass grows on northern side of the river	
4a	1-2 feet deep	Fast current		
b	6-12 inches deep	Fast moving	Moss covering a rocky bottom	
5a	1 1/2 feet deep	Moderate current		
b	3 feet deep	Moderate current	Grassy bottom	
6	4-7 feet deep	Slow current	Grassy bottom, shallow silt floor	

THE RAYSTOWN BRANCH OF THE JUNIATA RIVER

Table 1

Sector	River Depth	Current Velocity	Description of River	Mollusk Occurrence
7	1-1 1/2 feet deep	Fast current	Rocks above surface	
8a	2-3 feet deep	Moderate current	Bottom sparsely covered with grass	
b	1-2 feet deep	Moderate current	Moss and other plant species occupy bottom	Mollusks observed.
9a	1-2 feet deep	Moderate current		Mollusk concentrations found in shallower and more slowly moving water off the northern bank. None were found in the center of the stream.
b	4-8 inches deep	Moderate current		Large mollusk concentrations found in slow moving water off northern bank.
10	2-3 feet deep	Moderate current	Light concentrations of grass and mollusk on bottom	
11	4-5 feet deep	Slow current	Smooth river bed with grass growing on silt and sand covered bottom	
12	1-1 1/2 feet deep		Areas of more shallow swift moving water where rocks break surface alternating with deeper and slower moving areas	
13	4-6 feet deep	Slow current	Silt covered bottom with grass	
14	1-2 feet deep	Moderate current		

Sector	River Depth	Current Velocity	Description of River	Mollusk Occurrence
15a	1-1 1/2 feet deep	Fast current	Protruding rocks made water quite swift and white	Large number of mollusk shells and a few live mollusks observed. Rabbits, deer, groundhog, ducks and racoons were observed in the area.
b	4 inches deep	Fast current		
c	1 foot deep	Moderate current		
d	1-1 1/2 feet deep	Fast current	Large number of rocks breaking the surface of the water	Large number of mollusk shells and a few live mollusks observed. Rabbits, deer, groundhog, ducks and racoons were observed in the area.
16a	2-2 1/2 feet deep	Fast current	Rocky bottom, large aquatic turtle seen on northern bank.	
b	1-1 1/2 feet deep	Fast current	Large rocks breaking surface	
c	Same as a			Large number of mollusk shells and a few live mollusks observed. Rabbits, deer, groundhog, ducks and racoons were observed in the area.
d	Same as b			
e	Same as a			
17	1-2 feet deep	Moderate current	Moss covered bottom	Large number of mollusk shells and a few live mollusks observed. Rabbits, deer, groundhog, ducks and racoons were observed in the area.
18	3 feet deep	Moderate current	Bottom covered with moss and grass	
19	1-2 feet deep	Moderate current	Moderate current, alternating with areas of more shallow and rapidly moving water with rocks breaking the surface.	
20	5-7 feet deep	Slow current	Grass covered silt bottom	



located up on the slopes of the ridges primarily at the junction of two streams (Table 2). This seems to indicate that settlements were located primarily along the Raystown River with satellite hunting stations located along the secondary streams up on the ridge slopes.

Settlements of the Archaic or Hunting and Gathering phase in the Raystown Reservoir Basin Area were widely dispersed. The majority of such components are found along the river, although some are found on the low rolling hills near streams. Smith (1966:8) cites Robinson who states that the Archaic sites of northwestern Pennsylvania are found predominantly in the hilly regions south of the lake plain bordering Lake Erie on the terraces overlooking valley lowlands, especially at the confluence of streams. In the Raystown, these sites would function as hunting stations with the main settlement focus in the alluvial valley. The riparian flora of the valley floor, and the fauna which it attracts, seem to have had a significant effect on prehistoric settlement pattern. Thus it would appear that the "seasonal round" of Archaic groups would include extensive utilization of the uplands during short periods of the year for hunting and specialized foraging but that the greatest number of subsistence activities were undertaken along the river, exploiting its more diverse resources.

The ties of the Transitional People to the riverine environment are well known (Witthoft 1953) although this period is not well established as of yet in the Raystown Reservoir. This pattern of concentration along the river during the Archaic and Transitional times continued into the Woodland Period. The advantages of living in contact with the river are numerous for horticulturists. Yet there is no doubt that Woodland groups utilized the upland and probably occupied many of the same sites as those of the Archaic hunters as well.

It is interesting to note that by far the majority of sites are found on the down-river bend of a point bar meander. This location would seem highly desirable. The alluvial flood plains are the widest at the meander bends and are seasonally replenished through the annual flooding which would benefit the early agriculturalists and also the hunter/gatherer by allowing a more abundant plant growth whether domestic or wild. In addition, the down-stream side would be the location of the slackest current, even during flood, which would allow mollusks to accumulate and where fishing would be successful. This is also the location of greatest silt deposition and hence the highest ground during periods of flooding.

While the river does have stretches of shallow, rapid moving water, which could create some difficulties in river transportation, the river forms a natural northeast-southwest communication route which joins the east-west oriented Juniata River.

Table 2

TOPOGRAPHICAL DISTRIBUTION OF SITES

Sites located at the confluence of two streams

36 Hu 10
36 Hu 11
36 Hu 12
36 Hu 13
36 Hu 14
36 Hu 15
36 Hu 16
36 Hu 27

Sites located in association with point bar meanders

36 Hu 9
36 Hu 36
36 Hu 39
36 Hu 25
36 Hu 26
36 Hu 27
36 Bd 40
36 Hu 2
36 Hu 3
36 Hu 4
36 Hu 7
36 Hu 19
36 Hu 22
36 Hu 24
36 Hu 28
36 Hu 29
36 Hu 31
36 Bd 37
36 Bd 38
36 Hu 8
36 Hu 17
36 Hu 18
36 Hu 20
36 Hu 21
36 Hu 23

Sites not associated with point bars or stream confluences

36 Hu 30
36 Hu 5
36 Hu 1
36 Hu 6

SOIL CORRELATIONS

It has already been noted that most of the sites have been found to be on alluvial soils. An attempt was made to determine whether there is any correlation between the type of soil on which a site is located and the cultural period of that site. A tabulation of sites, occupational components, and soil types was made. Sites have also been grouped according to soil types and the relative soil productivity gradings after Higbee (1944:108). This information is found in Tables 2 and 3. The productivity groups described in Table 2 were ranked from 1 to 6. In Table 2 the sites have been grouped both for soil type and kind of surrounding soils on an assumed agricultural utility to aboriginal horticulturalists. The soils mentioned are all listed according to the soil types as viewed on Pennsylvania soil maps (Soil Map Huntingdon Co. 1934 and Soil Map Bedford Co. 1913). Also listed are the productivity ratings for each of these soil types.

For the correlation of soil type and occupational component the sites have been listed in sequence: first, the multi-component sites, youngest to oldest, have been listed with those having continuous occupation; next, those having a broken occupational sequence; finally, single component sites were listed by component priority, followed by non-occupational sites and sites of undetermined cultural classification (see Table 3 for conclusions).

It was believed that there would be a relationship between soil productivity and occupational component, the Woodland horticulturalists being found on the more productive soils, while the sites of the non-agriculturalists would be more widely distributed. However, no such correlation was apparent. It is possible that the scanty data available was just not adequate enough to show such a correlation.

CONCLUSION

The effect that environment has had upon the cultural development of the populations occupying the Raystown River Valley can hardly be overemphasized. The availability of natural communication routes allowed some degree of contact with neighboring populations while at the same time the long rugged ridges bordering the valley encouraged isolation. The availability of only small areas of level land tended to limit the habitable area and forced the population to occupy the alluvial flood plains along the main streams. The availability of food limited the size of the population and tended to force the population to occupy regions where food was most easily obtained, primarily along the streams, if site concentration is any indication of this effect.

Table 3

SOIL TYPE CORRELATION WITH POSTULATED OCCUPATIONAL COMPONENTS

<u>Site Names</u>			<u>Occupation</u>		
			Archaic Woodland Historic		
36Hu 1	Sheep Rock	Calvin Shale Loam	X	X	X
36Hu26	Baker # 1	Moshannon Sandy Loam	X		X
36Hu25	Baker # 2	Moshannon Silt Loam	X		
36Bd39	Jack Rhodes Farm	Dekalb Shale Loam	X	X	X
36Hul1	"Potatoe Patch"	Philo Silt Loam	X		X
36Hul9		Moshannon Sandy Loam			X
36Hu22	Entriaken	Moshannon Silt Loam	X	X	X
36Hul3	James Creek # 2	Philo Silt Loam	X		X
36Hul2	James Creek # 1	Philo Silt Loam	X	X	
36Bd37		Huntingdon Loam	X	X	
36Bd38		Huntingdon Loam	X	X	
36Hu29		Moshannon Sandy Loam	X	X	
36Hu 9	Cunningham	Moshannon Sandy Loam	X	X	
36Hul8		Moshannon Sandy Loam	X		
36Hu30		Lehew Shale Loam	X		
36Hu 8		Moshannon Sandy Loam	X		
36Hu24	Entriaken Bridge	Moshannon Silt Loam	X		
36Hul7		Moshannon Sandy Loam	X		
36Hu31		Huntingdon Loam	X		
36Bd37		Huntingdon Loam	X		
36Hu 7		Moshannon Sandy Loam	X		
36Hu 2		Moshannon Sandy Loam	X		
36Bd40		Dekalb Shale Loam	X		
36Hu27	Shy Beaver	Philo Silt Loam	X		
36Hu 4		Rough Broken Land (Calvin Material)		X	
36Hu 6	Mussel Rock	Calvin Shale Loam		X	
36Hu36	Workman	Dekalb Shale and Huntingdon Loam	X	X	X
36Hu 5		Calvin Shale Loam		X	
36Hu 3		Moshannon Sandy Loam		X	

REFERENCES:

(Soil Map Hunt. Co.
1934
Soil Map Bedford Co.
1913)
(Smith 1966; 1967)

THE
HUMAN SKELETAL REMAINS
FROM THE
WORKMAN SITE

by

Donald M. Austin
and
John A. Brown

ABSTRACT

Two human burials were found at the Workman Site during the 1967 season of excavation. Soil conditions at this open site obviate the possibility of a great antiquity for the individuals. Furthermore, artifacts associated with them would seem to indicate that they were interred during the Late Woodland Period.

One burial is represented only by the crowns of the individual's teeth while the skeleton of the other individual, a young female, is nearly complete. Osteobiographical analysis has revealed the sex and age at death, clues to her health status, and activities which she pursued.

ACKNOWLEDGMENTS

The authors extend their appreciation to Mr. Frank P. Saul and Mr. Ralph Garruto, with whose aid and supervision this project was carried out. Their criticism and encouragement has been of great value.

TABLE OF CONTENTS

	<u>Page</u>
ABSTRACT	51
ACKNOWLEDGMENTS.	52
TABLE OF CONTENTS	53
LIST OF ILLUSTRATIONS.	54
LIST OF TABLES	55
I. INTRODUCTION.	57
II. BURIAL 67-1	57
Description	57
Osteobiographical Analysis	57
III. BURIAL 67-2	58
Description	58
Cranial Measurements	59
Post-Cranial Measurements	59
Materials Found Associated with the Burial.	61
Osteobiographical Analysis	61
Sex.	61
Stature	61
Age at Death.	62
Genetic Affinities.	63
Pathology.	64
Anomalies.	64
IV. CONCLUSION	64
APPENDIX I: Illustrations of Burial 67-2	65

LIST OF ILLUSTRATIONS

	<u>Page</u>
Figure 1. Burial in situ	65
Figure 2. Cranium Front.	66
Figure 3. Maxilla - Showing Tooth Crowding	66
Figure 4. Cranium Side	67
Figure 5. Cranium Back	67

LIST OF TABLES

	<u>Page</u>
Table 1. Cranial Measurements.	59
Table 2. Post-Cranial Measurements	60
Table 3. Maximum Living Stature Based on Regression Equations	62
Table 4. Criteria for Estimation of Age at Death . . .	62

INTRODUCTION

The function of this chapter is to supplement Frank P. Saul's description and osteobiographical analysis of the "Sheep Rock Shelter" Woman (1967). In this way it will serve to extend our knowledge of the pre-literate peoples of South-central Pennsylvania.

This study is two-fold in its structure. The human remains are first described and then analyzed from an osteobiographical point of view.

BURIAL 67-1

Description

On July 14, 1967 a burial was discovered in pit B9 at 16 inches to 24 inches BD. The only skeletal remains surviving disintegration by the acid content of the soil were the hard enamel crowns of 27 teeth. Nineteen of these are intact, the rest are damaged to various degrees.

The excavation of this burial revealed, by an elongated oval of darkened soil, that the individual lay nearly parallel to the East-West axis of the grid. The teeth were located at the eastern end of this area, and their orientation indicates that the individual was facing toward the South. The burial appeared to have been extended, since the darkened area of soil left by the decay of the rest of the body was 6 feet 10 inches in length.

Found in association with the burial were about 40 lithic chips; 45 sherds, some of which have been identified by John B. Huner as Clemson's Island; and a stone celt. The pottery type is diagnostic of the Late Woodland Period and dates between 700 A.D. and 1200 A.D.

Osteobiographical Analysis

Any attempt at osteobiographical analysis is severely limited by the scanty remains.

It does not appear that the third molars have developed yet, but all of the permanent teeth seem to have appeared. This indicates that the individual was roughly between ten and thirty years of age at the time of death. The molars exhibit varying degrees of wear from virtually none to marked flattening of the cusps.

Although shovel-shaped incisors are common among the Amerindians, this phenomenon is not present in the individual in question.

BURIAL 67-2

Description

Burial 67-2 was discovered on July 20, 1967 at a depth of 39 inches to 48 inches BD and excavated on July 21 and 22.

The individual was lying on her back in an extended position with the arms at the sides. She was oriented parallel to the North-South grid lines. The skull was pointing South and facing grid East, while the feet were overlapped and pointed grid Northwest.

Except for marked deterioration of many of the bones of the right side (including the clavicle, humerus, radius, ulna, carpals, metacarpals and phalanges) the skeleton is in remarkably good condition compared to Burial 67-1 which lay only yards away. The burial seems to have been disturbed by ground pressures as is evidenced by skull warpage and a slight displacement of the upper three lumbar vertebrae to a point about an inch to the right (from the individual's point of reference) of their proper position. The right patella was displaced to the outside of the fibula and about midway between the ends.

A brief description of the skull and mandible follows. The cranium shows moderate root damage. This has taken place on the outside of the skull in the form of a flaking off of much of the outer table of bone due to roots matted underneath it. A root passing through the area posterior to the right mandibular cavity and into the facial region was probably the cause of the destruction of most of this area. Only the robust part of the maxilla and part of the left zygomatic bone have been preserved in pieces large enough to identify. The frontal bone above the supraorbital ridges, the parietalia and the occipital bone have been reconstructed for the most part. The right temporal region has been partially reconstructed and it may be seen that it is warped inward. The left temporal bone is represented only by the mastoid process, auditory regions, and a small finger of bone projecting anteriorly from the posterior part of the parieto-temporal suture.

The mandible lacks the coronoid processes and the right mandibular head. The mandibular head has been tentatively reconstructed from its one surviving piece so that it may be articulated with the mandibular cavity. Flaking of bone has produced some damage in the alveolar region and body surrounding the symphysis.

The incisors exhibit shovel-shaping, and pronounced crowding is present in the maxilla (see Fig. 3).

The post-cranial skeleton is nearly complete. The missing bones include: four thoracic vertebrae, five cervical vertebrae, the right hand and wrist, most of the phalanges of the feet, the right clavicle and the xiphoid process of the sternum.

Metrical data could not be taken on the scapulae, radii, right ulna, and clavicles due to their deteriorated condition.

The following metrical data for the cranial and post-cranial remains are available at this time.

Cranial Measurements

Because of the poor condition of the cranium only the following measurements have been taken. The results are not absolutely accurate due to the warpage and flaking of the bone and the reconstruction of the materials.

Table 1

CRANIAL MEASUREMENTS

Cranium

Glabella - occipital	18.2 cm
Opisthion - forehead	17.4 cm
Basion - bregma	14.1 cm
Bregma - lambda	10.6 cm
Lambda - opisthion	10.2 cm
Lambda - inion	5.4 cm
Inion - opisthion	6.5 cm
Basion - opisthion	3.6 cm
Foramen magnum breadth	3.1 cm

Mandible

Symphysial height	2.9 cm	
Corpus height M_1 M_2	L 2.9 cm	R 2.6 cm
Corpus thickness M_1 M_2	L 1.7 cm	R 1.7 cm
Foramen mentalia breadth	5.1 cm	

Post-Cranial Measurements

The following measurements and indices have been obtained from the post-cranial skeleton. It should be noted that many measurements (e.g. the lengths of the humeri) are not available because of damage to various parts of the bones.

Table 2

POST-CRANIAL MEASUREMENTS

<u>Humeri</u>	<u>Left</u>	<u>Right</u>
Midshaft diameter, maximum	1.77 cm	1.80 cm
Midshaft diameter, minimum	1.33 cm	1.40 cm
Biepicondylar breadth		5.40 cm
Least circumference	5.40 cm	
Middle index, 1/2	.751	.777
<u>Ulna</u>		
Length, maximum	25.50 cm	
<u>Femora</u>		
Length, maximum	42.05 cm	41.90 cm
Length, bicondylar	41.25 cm	41.70 cm
Head diameter, maximum	4.08 cm	4.08 cm
Subtrochlear diameter, anterior-posterior	2.35 cm	2.37 cm
Subtrochlear diameter, lateral	3.20 cm	3.00 cm
Midshaft diameter, anterior-posterior	2.42 cm	2.40 cm
Midshaft diameter, lateral	2.35 cm	2.31 cm
Bicondylar breadth	7.00 cm	6.65 cm
Midshaft circumference	7.50 cm	7.50 cm
Platymetric index, 4/5	.73	.79
Middle index, 7/6	.97	.96
Robusticity index, 6+7/2	.115	.112
Pilastric index, 6/7	1.02	1.03
<u>Tibiae</u>		
Length, maximum	34.20 cm	34.30 cm
Upper epiphyseal breadth	5.80 cm	6.06 cm
Midshaft diameter, anterior-posterior	2.55 cm	2.80 cm
Midshaft diameter, lateral	1.90 cm	1.90 cm
Nutrient foramen diameter, anterior-posterior	3.00 cm	3.15 cm
Nutrient foramen diameter, lateral	2.00 cm	1.95 cm
Lower epiphyseal breadth	4.00 cm	4.00 cm
Least circumference	3.25 cm	3.25 cm
Platycnemic index, 6/5	66.67	61.91
Middle index, 4/3	74.51	67.86
Tibio-femoral index, 1/2	81.33	81.86
<u>Fibulae</u>		
Length, maximum	33.40 cm	33.10 cm
<u>Patellae</u>		
Height	3.70 cm	3.65 cm
Breadth	3.35 cm	3.35 cm
Thickness	1.70 cm	1.75 cm
Patellar index	110.40	108.95

Materials Found Associated with the Burial

Found in association with Burial 67-2 were artifactual and non-artifactual materials. The former include one complete projectile point, approximately 100 lithic chips, and more than 30 potsherds. The point and sherds have been assigned, by Carl A. Bebrich and John B. Huner, respectively, as belonging to the Late Woodland Period which extends from 700 A.D. to 1200 A.D. Non-artifactual materials include over one dozen fragments of burned bone, and the sacrum of an animal, possibly a dog, which was found just to the left of the feet of the individual.

Osteobiographical Analysis

Sex. The very well defined pre-auricular sulcus on the left ilium, the triangular shape of the obturator foramen, the width of the sciatic notch, the wide sub-pubic angle and the general construction of the pelvis when articulated with the sacrum have led the authors to believe the individual was a female. This belief has been confirmed by Frank P. Saul of The Pennsylvania State University. It may be noted here that the sulcus need not be present on both ilia to indicate a female individual (Brothwell 1965:55).

Previously, confusion as to the sex of the individual arose because of the robusticity of the mandible, and the size of the left mastoid process which appeared relatively and absolutely large to the excavators. However, this process was partially destroyed during disinterment, and its original size is difficult to judge. Regardless of these traits, the pelvis indicates that we are dealing with a female individual.

Stature. The skeleton as it lay in situ may have given the impression that the individual's height may have been near 173 cm (about 68 inches). However, this is due to the separation of the bones of the skeleton as the flesh holding them together disintegrated. Living stature may be more accurately estimated by the use of regression equations which have been formulated from skeletal individuals of known height. When using Trotter and Gleser's equations for the estimation of maximum living stature of white American females (1952, 1958), the height of the individual seems more likely to be about 160 cm (63 inches). Table 3 gives the particulars of this information.

The criteria listed in the table are given in a rough order of preference for accuracy. The references used for estimating the age were Brothwell (1965), McKern and Stewart (1957), and Howells and Elliot (personal communication).

As Table 4 demonstrates, epiphyseal union of the long bones, which is complete, iliac crests, and ischial epiphyses, which are not completely fused, indicates an age range of twenty to twenty-four years of age and this estimation is probably most accurate. Fusion of the sacral units three and four seems complete but units two and three, and one and two are not completely fused. This is indicative of an individual less than twenty-nine years old.

Age estimation involving the condition of the public symphysis has yet to be worked out for a large documented series of females. Changes of the symphyseal face seem to be accelerated in females (Stewart 1957). Perhaps this is due to the processes at work before and during childbirth. The age range presented is based on McKern's and Stewart's set of plastic model symphyseal casts. Although only a part of the left symphyseal face was recovered there is no apparent breakdown of simple billows and furrows and no borders are present. In connection with a male this would indicate an age of seventeen to eighteen. The age estimate might be lowered since a female individual is the subject of this analysis, but, the authors are stating a range of 17-19 because of the lack of documentation of a female series and because only a portion of the symphysis is available for study.

All four third molars had erupted previous to death, but, the upper right one has not been recovered, apparently, because its root was not completely formed. This is suggested by the shallow, cup-shaped socket. Tooth eruption is, at best, a supplementary indicator of age and the authors used one of the broader ranges available, seventeen to twenty-five years.

Cranial suture closure is also not an accurate age indicator. No trace of closure was noted, however, and this indicates that the individual was under twenty-nine to thirty-nine years of age.

As a relative indicator of age, the molar wear of the Workman Woman is much slighter than that of the Sheep Rock Woman whose age has been estimated at about thirty years (range twenty to forty years) by Frank P. Saul (1967).

Finally, considering all of the criteria used, an age range of seventeen to twenty-five can be postulated for the age of the Workman Woman, Burial 67-2.

Genetic Affinities. The skull appears to be dolichocranic based on a very rough estimate of its maximum breadth. The incisors exhibit marked shoveling. Squatting facets are present anteriorly on the distal ends of the tibiae. All three of these traits are common in American Indian populations and, together with the

artifacts associated with the burial, lead the authors to conclude that the individual belonged to the aboriginal population.

Pathology. Little evidence of pathology has been found. Calculus is found in moderate amounts on the lower incisors. It is difficult to say whether these deposits resulted in alveolar damage, since deterioration of the region between the incisors has occurred. However, no alveolar destruction seem to be present between the lower canines and lateral incisors, and we might infer from this that any alveolar damage that may have occurred was probably slight.

No calculus, alveolar damage or absorption of bone appears to be present in the upper teeth. However, severe crowding has resulted in the displacement of the first premolar. This tooth has erupted to the lingual side of the canine tooth, which, in turn, has been pushed slightly outward. The left canine has also been displaced outward (buccally) to a slight degree.

Caries are not extensive, though a few are present in the fissures of the molars.

Anomalies. An extra cusp is present on the buccal side of the left lower third molar.

CONCLUSION

Burials 67-1 and 67-2 have been described and analyzed for an osteobiographical view point. Both are assumed to be aboriginal burials.

Burial 67-1 is represented only by the enamel of about 27 teeth. Third molars seem to be lacking, indicating that the individual was possibly between ten and thirty years of age.

Burial 67-2, was a female whose age has been judged to be between seventeen and twenty-five years of age, based on evidence from the rather well preserved skeleton.



Figure 1. BURIAL IN SITU

Figure 2. CRANIUM FRONT

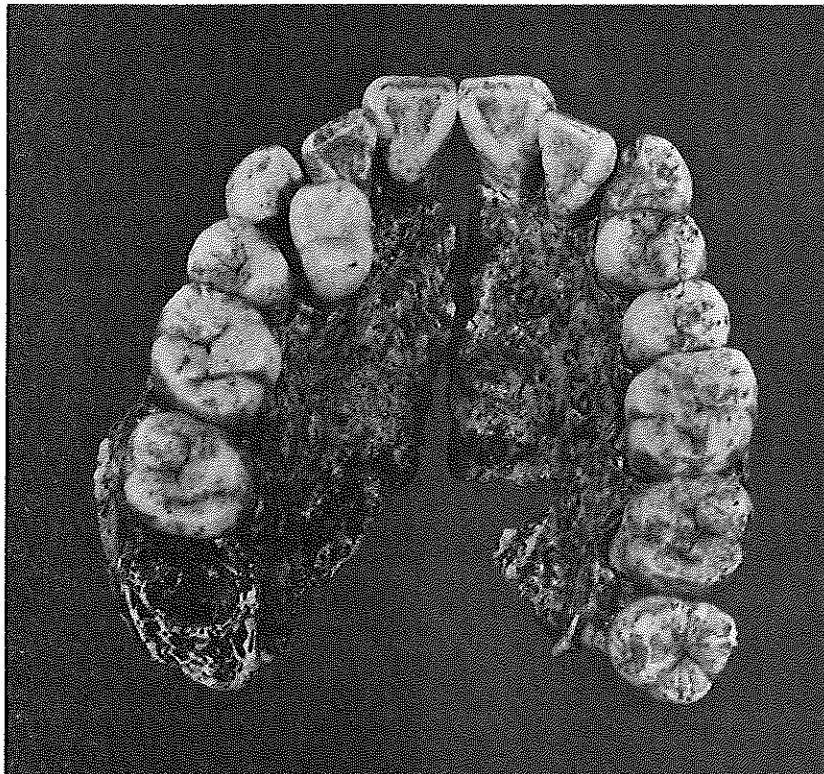
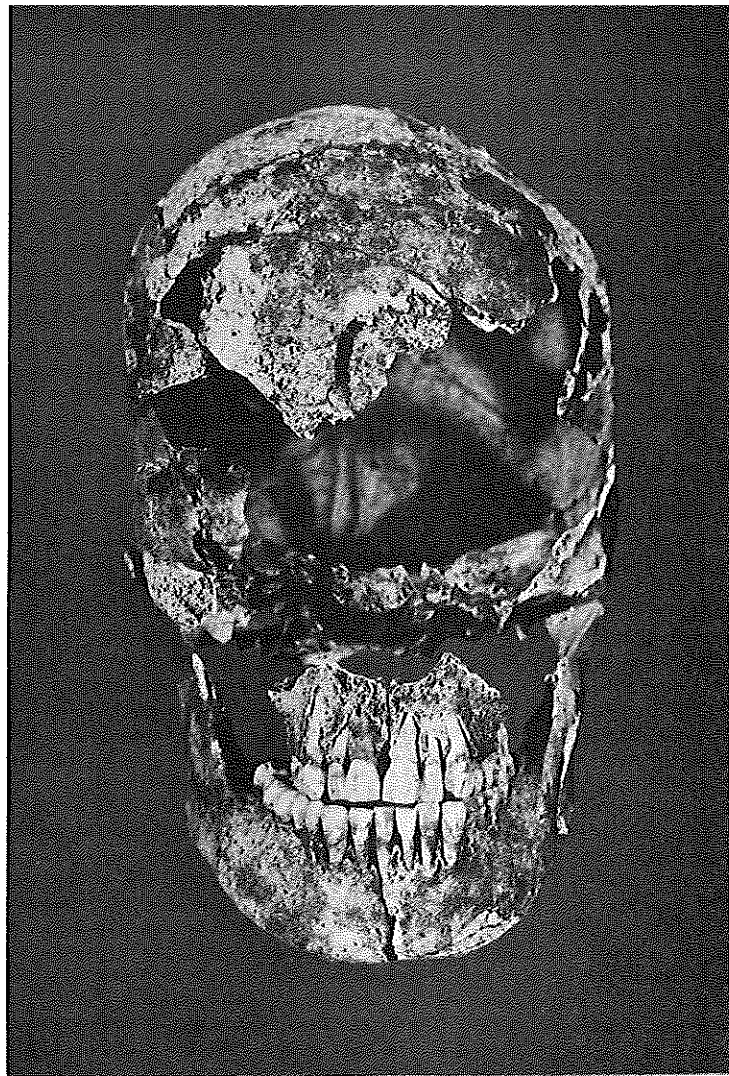


Figure 3. MAXILLA
SHOWING TOOTH CROWDING

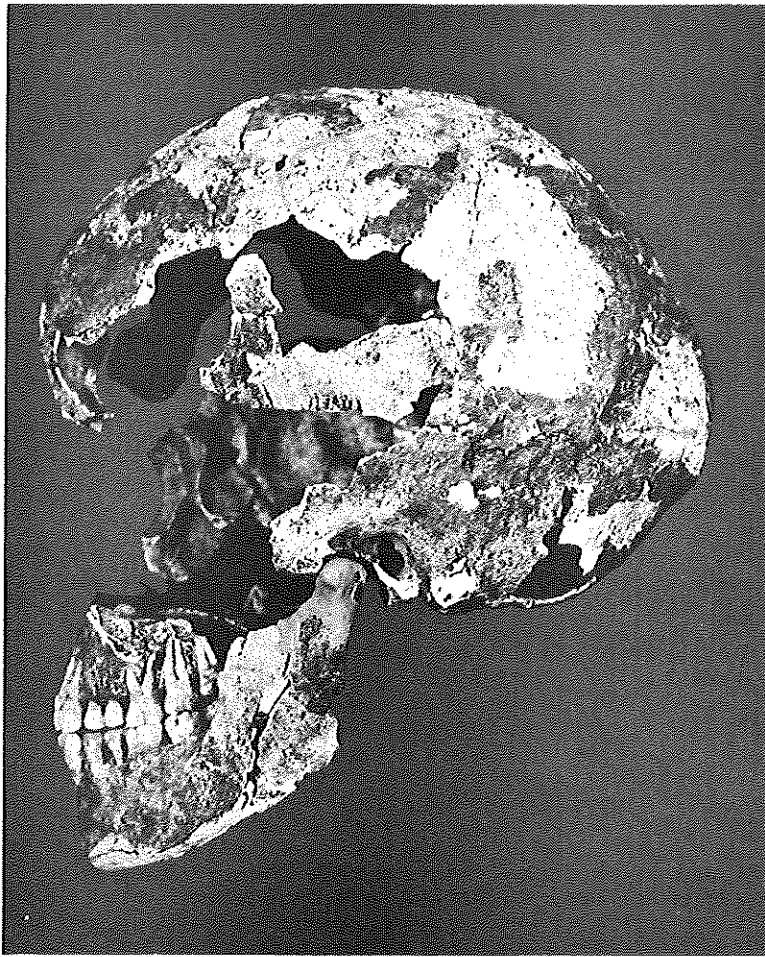


Figure 4. CRANIUM SIDE

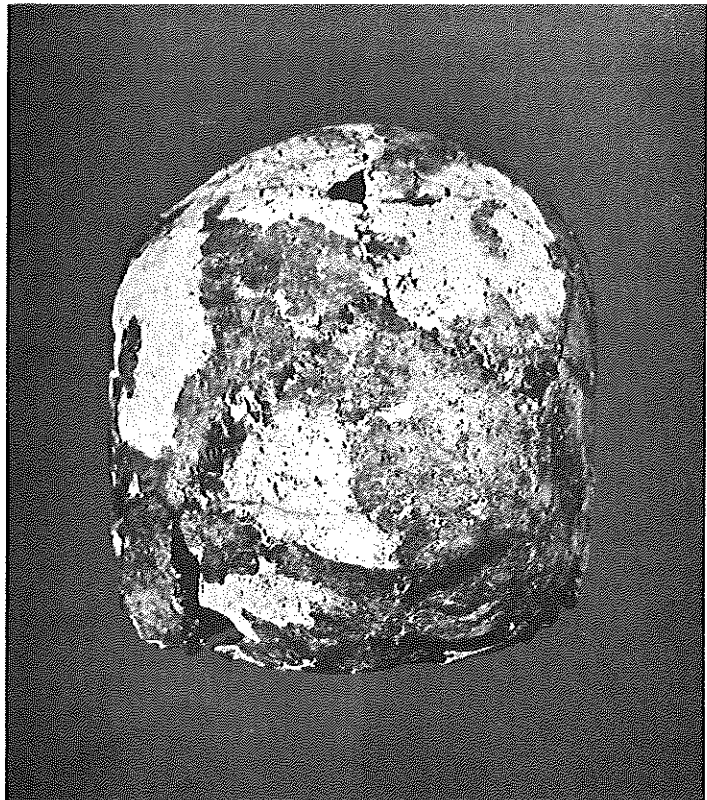


Figure 5. CRANIUM BACK

A PRELIMINARY REPORT ON THE STEATITE AND CERAMICS OF
THE WORKMAN SITE

by

John B. Huner and Pamela K Smith

ABSTRACT

The recovery of several miscellaneous pieces of steatite, including a lug handle and a bead, denotes the presence of a Transitional component at the Workman Site. However, the majority of the ceramic materials recovered indicates major occupation of the site during the Early Late Woodland Period. This date is rather firmly established by the presence of Clemson's Island, Owasco, Radford, and Watson pottery, with the addition of several local series which combine the paste and design attributes of all of the above "wares". It is felt that these local series (Workman, Warriors Path, Saxtone and Stonerstown), are indicative of a complex interchange of ideas and/or cultures. The striking differences between the temporally comparable Sheep Rock Ceramics and those of Workman imply the existence of a cultural boundary, which limited interaction between local groups from opposite ends of the Raystown River. In addition, the presence of several unusual ceramic articles including a ceramic bead, a Canis effigy, and the more or less common ceremonial objects such as pipes and miniature vessels indicates that the ceramics inventory of the Workman site was not entirely relegated to utilitarian functions.

ACKNOWLEDGEMENTS

The authors express their thanks and gratitude to our friends and colleagues whose suggestions, criticisms, and aid made this report possible. Special thanks goes to Miss Sybil Calabre, Miss Diane Cohen, Miss Karen Kelley, and Miss Hollie Webb whose assistance in the initial ceramics analysis (including typing, IBM coding, and line drawing) was invaluable in the production of this report. We also thank Miss Lorraine M. Willey and Mr. Charles C. Kolb for their criticisms and suggestions regarding the interpretation of the Workman ceramics assemblage.

TABLE OF CONTENTS

ABSTRACT.	71
ACKNOWLEDGEMENTS.	72
TABLE OF CONTENTS.	73
LIST OF ILLUSTRATIONS.	75
LIST OF TABLES.	76
 I. STEATITE VESSELS.	 77
Introduction.	77
Description.	77
Conclusions.	79
 II. CERAMICS.	 80
Introduction.	80
Ceramic Technology.	83
Ceramic Types Associated with the Susquehanna Basin.	87
Clemson's Island Punctate var. Clemson's Island Punctate.	89
Ceramic Types Associated with the Allegheny Ceramic Area.	91
Radford Cordmarked var. Punctated Lip.	91
Radford Cordmarked var. Punctated Rim.	92
Radford Cordmarked var. Straight Rim.	93
Radford Cordmarked var. Folded Rim.	95
Page Cordmarked.	96
Page Cordmarked var. Punctated Rim.	96
Page Cordmarked var. Impressed Rim.	98
Ceramic Types Associated with the Monongahela Basin.	100
Watson Plain.	100
Watson Cordmarked var. Impressed Lip.	101
Ceramic Types Associated with the Raystown Basin.	102
Saxton Impressed.	102
Saxton Incised.	104
Stonerstown Incised.	105
Workman Cordmarked.	107
Workman Cordmarked var. Impressed Lip.	108
Workman Cordmarked var. Impressed Rim.	109
Workman Cordmarked var. Impressed Lip and Rim.	111
Warriors Path Smooth var. Impressed Lip.	111
Warriors Path Smooth var. Incised Rim.	112
Warriors Path Cordmarked.	113
Warriors Path Cordmarked var. Impressed Lip.	114
Warriors Path Cordmarked var. Impressed Rim.	116
Warriors Path Cordmarked var. Impressed Lip and Rim.	117
Warriors Path Cordmarked var. Punctate.	117

Conclusions.	.121
III. Ceramic Pipes.	.122
Introduction	.122
Bowl Fragments	.122
Decoration	.122
Temper	.122
Manufacture.	.122
Types.	.123
Conclusions.	.123
IV. Exotic Ceramic Objects	.123
<u>Canis</u> Effigy	.123
Ceramic Bead	.125
Miniature Pot.	.125
Conclusions.	.125

LIST OF ILLUSTRATIONS

Figure 1.	Steatite Lug Handle; and Steatite Bead.	.78
Figure 2.	Map of the Saxton Area showing Clay Lens.	.85
Figure 3.	Shenk's Ferry Incised var. Simple; Shenk's Ferry Incised var. Complex; Shenk's Ferry Incised var. Multiple Banded; and Owasco Corded Oblique.	88
Figure 4.	Clemson's Island Punctate var. Clemson's Island Punctate; and Clemson's Island Platted.	.90
Figure 5.	Radford Cordmarked var. Punctate Lip; Radford Cordmarked var. Punctate Rim; and Radford Cordmarked var. Straight Rim. . .	.94
Figure 6.	Radford Cordmarked var. Folded Rim; and Page Cordmarked. .	.97
Figure 7.	Page Cordmarked var. Punctate Rim; and Page Cordmarked var. Impressed Rim.	99
Figure 8.	Watson Plain; and Watson Cordmarked var. Impressed Lip. . .	103
Figure 9.	Saxton Impressed; Saxton Incised; and Stonerstown Incised..	106
Figure 10.	Workman Cordmarked; Workman Cordmarked var. Impressed Lip; and Workman Cordmarked var. Impressed Rim.	.110
Figure 11.	Workman Cordmarked var. Impressed Lip and Rim; Warriors Path Smooth var. Impressed Lip Warriors Path Smooth var. Incised Rim; Warriors Path Cordmarked; and Warriors Path Cordmarked var. Impressed Lip.	115
Figure 12.	Warriors Path Cordmarked var. Impressed Rim; and Warriors Path Cordmarked var. Impressed Lip and Rim.	118
Figure 13.	Warriors Path Cordmarked var. Punctate.	120
Figure 14.	Ceramic Pipe Bowl Fragments.	.124
Figure 15.	Canis Effigy; Ceramic Bead; and Miniature Pots.	126

LIST OF TABLES

Table 1. Distribution of Unclassified Sherds	.87
Table 2. Types Associated With the Susquehanna Basin	.87

STEATITE

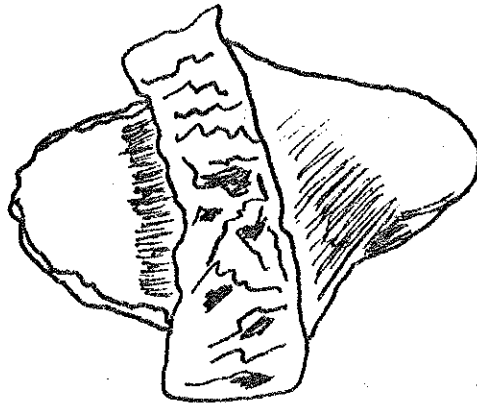
INTRODUCTION

Steatite is usually considered to be diagnostic of the Transitional Period, especially when it is found in vessel forms. Both Witthoft (1953) and Ritchie (1965) have discussed this period for Pennsylvania and New York, respectively, and Huner et al (1967) has inventoried the steatite vessels recovered at Sheep Rock. The steatite specimens recovered include a lug handle with a portion of the vessel wall still intact, a portion of a doughnut-shaped bead, and three miscellaneous fragments.

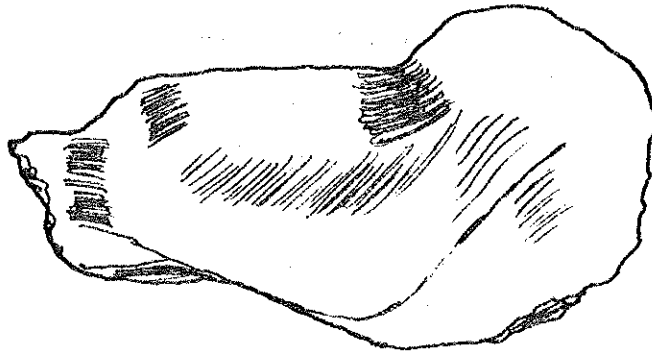
DESCRIPTION

The lug handle is 55 mm wide, and the distance from the outer edge of the handle to the exterior vessel wall is approximately 30 mm. The vessel itself is 25 mm thick (See Fig 1 a,b). It is assumed that the original vessel form was similar to those described by Witthoft (1965:20) and Ritchie (1965:172), i.e., an elongated, oval, trough-like form. The interior of the vessel wall exhibits random striations which are assumed to be a product of the manufacturing technique. While the exterior is rather rough, the smoothness of the interior could be due to usage. It should be noted, however, that no evidence of charring or carbon deposition occurs on the interior of the vessel.

Four small steatite "sherds" were also recovered. Only one of these exhibits distinct modification and is sufficiently complete for the determination of shape. It is a doughnut-shaped bead with an external diameter of 30 mm, an internal diameter of 15 mm and a width of 12 mm (See Fig 1 c,d, and e). Similar objects have been reported by Witthoft as being typical of the Susquehanna Soapstone Culture (1953:12).



a. top view



b. front view

STEATITE LUG HANDLE



c. top



d. interior



e. bottom

STEATITE "BEAD"

Figure 1

CONCLUSIONS

The recovery of steatite, incorporating stylistic elements such as lug handles and beads, suggests the presence of a Transitional component at the Workman Site.

Various sources indicate that during the Transitional Period, there was a shift to a riverine oriented culture exhibiting a settlement pattern consisting of "many small but numerous sites scattered along the banks of major streams" (Ritchie 1965).

Evidence from both Sheep Rock Shelter (Michels 1968) and the Workman Site support this hypothesis. At the Workman, it appears that the zone of occupation defined by the few diagnostic Transitional artifacts is restricted to a small area within the site. All of the steatite and one fish-tailed projectile point, attributed to the Transitional Period (Bebrich: personal communication), were found in one square (A 08).

CERAMICS

INTRODUCTION

The artifact inventory of the Workman Site (36Bd36) includes a large ceramic assemblage, consisting predominantly of vessel sherds. While the Workman Site ceramics resemble those found in surrounding geographical areas, there are several unique combinations of design modes present, indicating a high degree of interaction during prehistoric times. This high degree of variance in the ceramics requires the application of the Wheat-Gifford-Wasley Type-Variety concept (1958), in order to determine the potential relationships of the pottery to that of other areas. Although this methodology and its application to the ceramics of Sheep Rock, and hence, to some degree, to those of Workman has been discussed previously (Huner *et al* 1967) it is necessary to briefly explain this taxonomic position.

For our purposes, the most widely distributed grouping of ceramics is the 'ceramic system'. It is composed of several types and is more or less comparable to a "ware", that is, it is bonded together by some common attribute or attributes and a generic relationship is implied, but there is a recognizable difference between its components or types. For example, there are several limestone tempered 'series' found in the Allegheny Ceramic area of Virginia (Evans 1955; Manson, Mac Cord and Griffin 1944) and the Upper Ohio Valley (Mayer-Oakes 1955), which bear obvious relationships to each other, but are distinguishable and geographically separated, with some degree of intermixing occurring on the borders. A 'series' is the local representative in a geographic region, in that its attributes are usually the same as the ceramic system, but it is restricted both in time and space to that area. Type is the manifestation of a specific design/attribute clustering of the ceramic system and series, and is composed of the many varieties which vary locally in both time and space. Any given variety is the smallest divisible, complete design of pottery. Thus, by combining any given attribute of the type description with another, a variety may be established.

The majority of the descriptions included in this report are those of varieties rather than types. This explains the small number of sherds representative of each variety. When a previously designated type name is employed, the type is defined as that previously published and the variety is unspecified. However, when a variety designation is added, certain attributes are felt to be diagnostic for the Workman site, having definite temporal and spatial significance, which could be relevant when applied to other sites.

In the following typology, it is assumed that a ware is designated by its temper and other design attributes, therefore, when stylistic elements change but the same temper is exhibited, it is assumed that a new type is present. It is felt that the basic ceramic technology (i.e. paste) of a people will change much more slowly than highly plastic decorative motifs, and that a combination of new design attributes on an "old" or established paste indicates some degree of interaction, the nature of which is not precisely known. Where such "hybrids" appear to be quite prevalent, as at the Workman Site, a high degree of interaction is indicated.

The ceramic assemblages from both Workman and Sheep Rock Shelter exhibit, what can be considered, Early Late Woodland Susquehanna Basin Styles. These are listed in Table 2 with the only "new" variety description being that of Clemson's Island Punctate var. Clemson's Island Punctate. The presence of Shenk's Ferry types would, to some authors, indicate a later date for the site than is postulated above. However, the authors are of the opinion that Shenk's Ferry is an evolved form of Clemson's Island and probably dates to an earlier time period than previously thought at least in the Raystown Basin. Dating of the Shenk's Ferry pottery is made possible by the presence of several limestone-tempered series which are rather firmly established temporally, in their own regions.

The limestone tempered "wares" found at the Workman Site represent two distinct geographical regions (i.e. the Allegheny Ceramic area of Virginia and the Upper Ohio Valley) whose exact relationship is not known. In addition, there is a local manifestation present which applies Susquehanna Basin Styles to limestone tempered paste. To further complicate the picture, we find the combination of limestone "ware" stylistic attributes with quartz and flint/chert tempered pastes, and as one would expect, there are some stylistic motifs represented which seem to be local in origin. As stated before, it has been assumed that the temper is the basic criteria of a ceramic system, with design motif indicating the type. It was felt that the establishment of a new series designation was in order for those cases exhibiting "ware" characteristics of one series and design motifs characteristics of another series. Therefore, the following typological distinctions have been made:

RADFORD SERIES - characterized by limestone tempered past and decorative motifs consisting of: (1) finger pinchings along the lip with the lower edge of lip folded over the rim or collar; (2) small gashes or nicks along the lip or on the exterior surface of the upper rim made with a small, round or pointed stick (Evans 1955)

WATSON SERIES - characterized by limestone tempered paste and decorative motifs are: (1) confined to the cordmarked lip; (2) incisions or impressions of the edge of a cordwrapped paddle

or stick which are placed transversely to the lip.
(Mayer-Oakes 1955)

- PAGE SERIES - characterized by limestone tempering and (1) the addition of some outer rim strips giving a slightly collared appearance; (2) partially obliterated cord-wrapped paddle marks on the rim strips; (3) vertical incising located at the base of the rim; (4) oblique punch marks found on the lower edge of the rim; (5) Oblique impressions or stamping of a cord-wrapped paddle edge placed on the lower segment of the rim strip; (6) parallel rows of string impressions found on the rim; (7) thumbnail gouges on the rim; and (8) cord-wrapped stick or paddle edge impressions placed vertically or obliquely on the interior rim surface (Manson, MacCord and Griffin 1944). It should be noted that the last design motif is characteristic of that exhibited by Clemson's Island and Owasco pottery, possibly indicating a southern movement.
- SAXTON SERIES - local representative of the limestone or "hole" tempered wares characterized by: (1) cordwrapped paddle edge impressing, which is highly reminiscent of Owasco and Clemson's Island techniques; (2) chevron incising (such incising, although in a much highly refined form, is also represented in a flint-chert paste given the type designation Stonerstown Incised).
- WORKMAN SERIES - characterized by quartz tempered past so typical of Owasco pottery and design motifs characteristics of the limestone tempered series - Radford, Watson and Page
- WARRIORS PATH SERIES - characterized by flint-chert paste quite similar to that of Clemson's Island and Shenk's Ferry ceramics and design motifs characteristic of limestone tempered Radford, Watson and Page Series.

Ceramic Technology

In the Sheep Rock report, attention was paid to the study of the physical properties of the ceramics (Humer et al 1967: 446-452). It was thought at the time that distinctions could be made between "wares" of various periods by analyzing the technological aspects i.e. the latter "wares" would be "technologically superior" to those of previous periods. Thus comparisons were made by porosity, modulus of rupture, etc. While no definite conclusions could be drawn, it was thought that a trend could be seen. Further researches into this aspect of the study of ceramics has led the authors to conclude that no workable hypothesis can be established at this time.

The work with the Sheep Rock ceramics parallel, although not as definitively, Matson's work at the Young Site (1937). It has been concluded that low fired aboriginal pottery, i.e. before vitrification is relatively similar in porosity, through out the Eastern United States and a great deal of variation can occur within the same sample or type. The fact remains, however, that low fired pottery is porous and for a vessel to serve as a functional container for liquids something must be done to counteract the natural pore space.

A possible indicator of the attempt to decrease the porosity is color. While external color is known not to have cultural significance (at least in Woodland Pottery), the internal color is very often overlooked in this respect. There are three basic factors which effect the natural color of a fired vessel: the nature of the mineral constituents of the clay, the time and temperature of firing, and the atmosphere in which the vessel was fired. During the early stages of firing, carbon is deposited as a result of the reduction of the organic compounds in the clay. Between 500° and 600°C the carbon is oxidized and the clay begins to turn a buff, tan, reddish color due to the oxidation of iron compounds contained within the clay. It must be understood, however, that these temperatures are not absolute in the sense that they are dependent upon a time factor as well. For example, the same sample of clay may lose its carbon at 500°C after 1 1/2 hours or at 600°C after 5 minutes, assuming the presence of an oxidizing atmosphere and no complicating factors. The gradation between the two processes can often be seen in the cross-section of a sherd with the outer surfaces (interior and exterior) being oxidized or reddened and the interior or core remaining black. A number of sherds obtained from the Raystown Reservoir exhibit oxidized exterior surfaces and blackened interior surfaces. Blackening of the interior surface could be due to several factors: 1. the incomplete removal of organic carbons during firing; 2. firing in a reducing atmosphere which would be hot enough to remove the organic compounds but the "normal" or red colors of the ferric oxides would be black or dark for the iron compounds formed ferrous oxide; or 3. the introduction of carbon after firing. In the sherds examined, the possibility of carbon being introduced before firing can be omitted

for one surface is oxidized and the temperature/time ratio must have been high enough to remove surface carbon. This does not omit the possibility that the interior surface was exposed to a reducing atmosphere and, therefore, a dark color would be imparted from the ferrous oxide. However, examination under a binocular microscope shows that there are oxidized particles of "iron" in the blackened area. This leaves only the possibility that the black was added to the surface after firing which could be done by adding organics while the vessel was still hot or when the vessel was reheated such as during cooking. While the latter is almost a certainty, the former possibility also exists. Harrington points out that the Cherokee potters often "smoke" a pot to prepare it for cooking. He quotes Iwi, a Cherokee woman as follows:

"In order to be good for cooking these pots should be smoked," she said. "If this is not done, the water will soak through." (1908: 226).

Harrington further states:

"So she dropped a handfull of bran in each one [vessel] while they were still almost red-hot, stirred it with her stick, tipped the pots this way and that, and finally, turning out the now blazing bran from each in turn, inverted the vessels upon it. In this way, the inside was smoked black and rendered impervious and this without leaving any odor of smoke in the vessels when they became cold. Generally, Iwi told me, corncobs were employed for this purpose, but she always used bran when cobs were not available. This probably explains the black color of the inner surface so often seen in New York aboriginal pottery. (1908: 226)."

Thus it seems plausible that the inner black surface of the pottery found on the Workman Site and elsewhere could have been purposely created to render the vessels "waterproof", a problem of low-fired pottery.

A possible source of clay was discovered during the 1967 excavations near the Workman site. The clay was exposed in a cut bank approximately 150 yards south of the Workman Site on the same side of the Raystown Branch of the Juniata River. It is associated or under the terrace that the site is located on and is assumed to be of a Pleistocene date. (see Fig. 2) The clay was about 4 feet above the water and is presently covered by undergrowth and a modern dump. Due to the presence of organics in the clay and its grey reduced color, it is assumed that it was deposited by fluvial action under water in a backswamp. However, the presence of "modern roots" and slight oxidized iron veins indicate that it has been exposed to the air for some time.

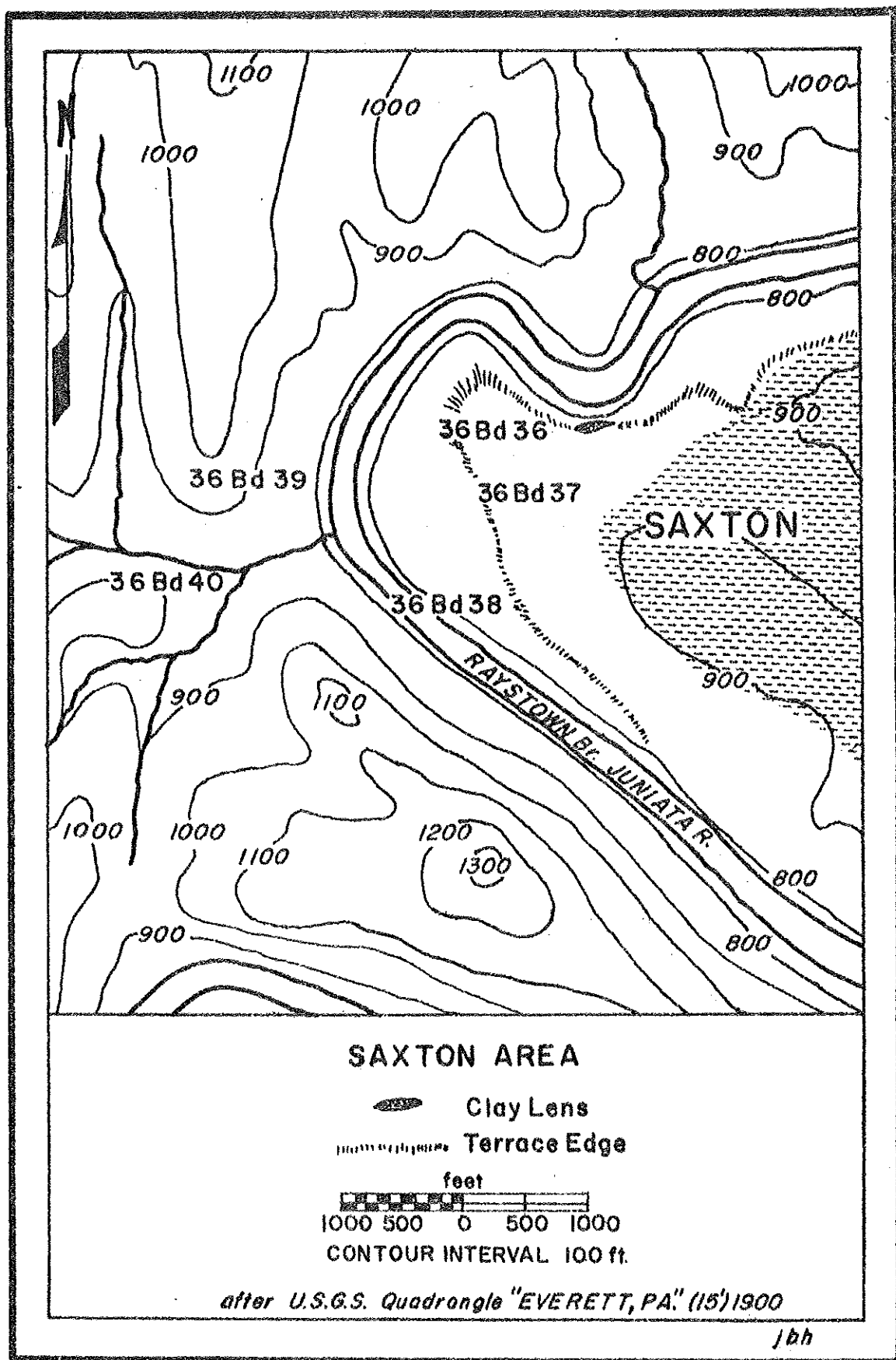


Figure 2

The Workman clay has a grey color with many carbonized organics and examination under a 20x binocular microscope shows that the clay was far from pure. It contained a great deal of quartz, mica, "flint or chert", carbon, and iron. In addition, a few particals of both rounded quartz and angular flint/chert were recovered when they failed to pass through a 20 mesh screen. Both of these impurities are highly similar to the temper material found in the Workman ceramics although the quantity and size of these impurities was certainly not great enough to account for the presence of similar materials in the ceramics which where tempered with quartz or flint/chert.

Several tests were applied to a sample of this clay and it was found that it has what can be considered to be good working properties. It slakes or becomes plastic quite readily and becomes plastic with the addition of one-third water by weight. The clay has a good, easily workable state when plastic and can be formed into any shape without cracking or separation. Upon drying, the workman clay shrinks about seven percent and fires to pinkish-tan when the oxidizing time/temperature ratio is reached, although, at lower temperatures it remains grey.

It would appear that this is an ideal raw material source for the po-ters who occupied the Workman site and all outward physical appearances indicate that it was. However, it should be noted, that only petrographic analysis of thin sections can demonstrate the true relationship between the clay deposit and the material employed in the Workman ceramics. Unfortunately, neither time nor technical knowledge was available for this to be done.

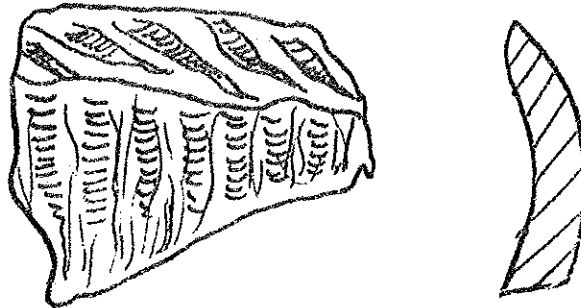
CERAMIC TYPES ASSOCIATED WITH THE SUSQUEHANNA BASIN

TABLE 1. DISTRIBUTION OF UNCLASSIFIED SHERDS

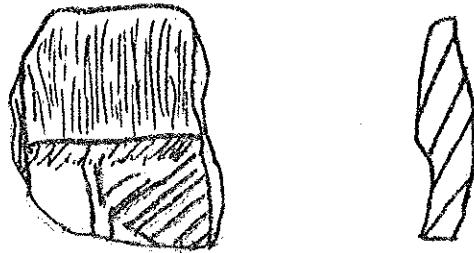
TEMPER	PLAIN	CORDMARKED	CORD-ON-CORD	INDISTINGUISHABLE	TOTAL
Quartz	134	235	18	21	408
Flint/Chert	0	735	136	159	1027
Limestone	746	751	0	38	1535
Indistinguishable					613
Historic					53
TOTAL UNCLASSIFIED SHERDS					<u>3236</u>

TABLE 2. TYPES ASSOCIATED WITH THE SUSQUEHANNA BASIN

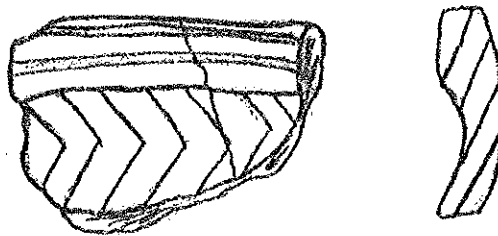
TYPE	SAMPLE SIZE	FIGURE REFERENCE	REFERENCE
Shenk's Ferry Incised var. Multiple Banded	6	Fig. 3,c	Huner <i>et al</i> 1967: <u>481</u>
Shenk's Ferry Incised var. Complex	4	Fig. 3,b	Huner <i>et al</i> 1967: <u>483</u>
Owasco Corded Oblique or Clemson's Island variants	6	Fig. 3,d-c	Huner <i>et al</i> 1967: <u>475-476</u>
Clement's Island Platted	15	Fig. 4,e-f	Huner <i>et al</i> 1967: <u>471</u>



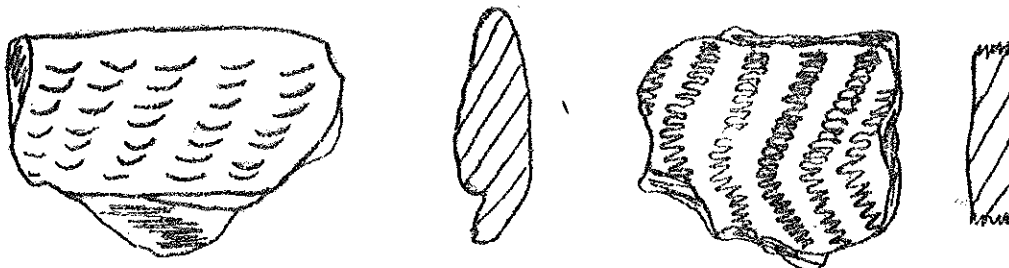
a. SHENK'S FERRY INCISED var. SIMPLE



b. SHENK'S FERRY INCISED var. COMPLEX



c. SHENK'S FERRY INCISED var. MULTIPLE BANDED



d.

e.

OWASCO CORDED OBLIQUE

Clemson's Island Punctate var. Clemson's Island Punctate (Fig. 4,a-d)

PASTE:

Method of Manufacture: Coiled(?) then malleated with a paddle and anvil.

Color: Grey to black with some tan

Temper:

Size: Medium to fine

Material: Flint/Chert

Texture: Microcrystalline

SURFACE TREATMENT:

Exterior: Vertical Cordmarking

Interior: Smoothed

DECORATION: A single line of deep punctates parallel to the lip along the base of the rim. Because of the deepness of the punctating, knobs appear on the interior. In addition, the interior rim is stamped with a cordwrapped stick or the edge of a cordwrapped paddle perpendicular to the lip and in some cases the necks exhibit diagonal stamping.

FORM:

Lip: Square

Rim: Straight to slightly outflaring

Neck: Straight to slightly concave

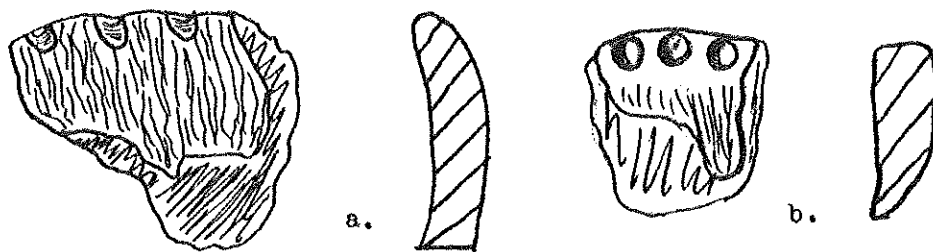
Body: ?

Base: ?

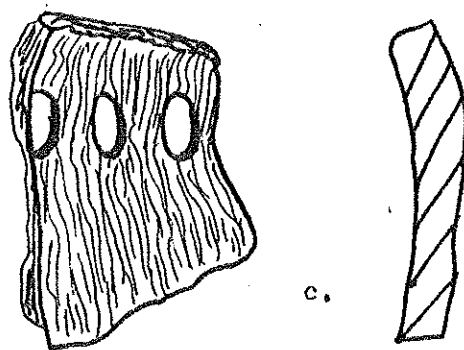
Shape: Jar-form

SIZE OF SAMPLE: 20

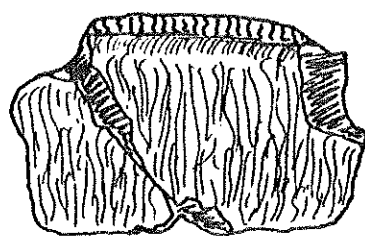
COMMENT: This variety appears to be the "typical" Clemson's Island Punctate as viewed at the William Penn Memorial Museum and differs from Clemson's Island Punctate var. Overhanging Rim (Huner et al 1967:474-75) in that the rim exhibits only a slight degree of "thickening" or outflaring. While this variety is easily recognized and associated with the Clemson's Island Culture, it is believed that this is the first description of this "classic" type. It should be noted that the more typical form is found further from its assumed hearth than the regional variety (i.e., var. Overhanging Rim) and a time differential might be indicated.



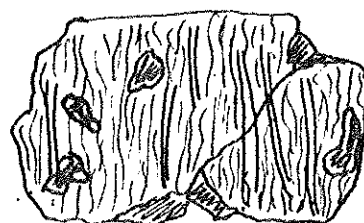
RADFORD CORDMARKED var. PUNCTATE LIP



RADFORD CORDMARKED var. PUNCTATE RIM

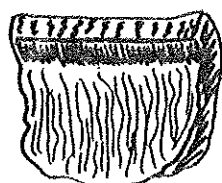


d. exterior

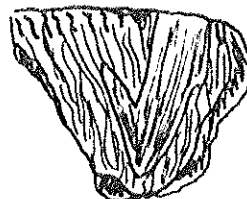


e. interior

RADFORD CORDMARKED var. STRAIGHT



f. exterior



g. interior

RADFORD CORDMARKED var. STRAIGHT

POTTERY TYPES ASSOCIATED WITH THE ALLEGHENY CERAMIC AREA

Radford Cordmarked var. Punctated Lip (Fig. 5,a-b)

PASTE:

Method of Manufacture: Coiled (?) and then malleated with a cordwrapped paddle and anvil

Color: Light grey to tan

Temper:

Size: Coarse

Material: Limestone

Texture: Varies, generally porous and quite contorted and highly leached

SURFACE TREATMENT:

Exterior: Cordmarked

Interior: Smoothed

DECORATION: Series of single punctates or notches placed on the lip surface. The remainder of the body appears to be only cordmarked.

FORM:

Lip: Rounded

Rim: Outflaring

Neck: Concave

Body: (?)

Base: (?)

Shape: Jar form (?)

SIZE OF SAMPLE: 4

COMMENT: The distinctive feature exhibited by the Radford decorated "series" as described by Evans (1955:64-69) appears to be the presence of varied forms of "punctates" (finger pinchings; gashes or nicks executed with a small round or pointed stick) placed either along the lip or on the exterior rim surface. Four of our limestone tempered sample found at 36 Bd. 36 exhibit these distinctive decorative motifs placed on the lip.

Radford Cordmarked var. Punctated Rim (Fig. 5,c)

PASTE:

Method of Manufacture: Coiled (?) and then malleated with
with a cordwrapped paddle and anvil

Color: Light grey to tan

Temper:

Size: Coarse

Material: Limestone

Texture: Varies, generally porous, quite contorted,
and highly leached

SURFACE TREATMENT:

Exterior: Cordmarked

Interior: Smoothed

DECORATION: Large crude elongated punctates located on the lower
portion of the rim and extending over the base of the
folded rim.

FORM:

Lip: Square to slightly rounded

Rim: Outflaring and folded

Neck: Concave

Body: (?)

Base: (?)

Shape: Jar form (?)

SIZE OF SAMPLE: 7

COMMENTS: In these particular sherds the punctates have been
placed on the lower portion of the rim area, and tend to
extend over the base of the folded rim. As stated above,
these punctates are somewhat elongated and crudely executed,
such forms may have been obtained either by inserting the
implement used for punctating process into the rim area and
then dragging it slightly downward through the clay, or they
may simply be the result of the configuration of the punc-
tating implement itself.

Radford Cordmarked var. Straight Rim (Fig. 5,d-g)

PASTE:

Method of Manufacture: Coiled (?) and then malleated with
a cordwrapped paddle and anvil

Color: Light grey to tan

Temper:

Size: Coarse

Material: Limestone

Texture: Varies, generally porous, quite contorted and
highly leached

SURFACE TREATMENT:

Exterior: Cordmarked

Interior: Smoothed

DECORATION: None

FORM:

Lip: Flay (outward or inward sloping) to slightly rounded

Rim: When present slightly rounded and outflaring

Neck: Vertical to concave

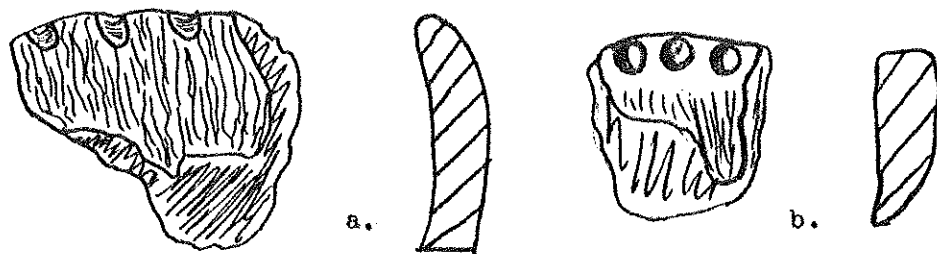
Body: (?)

Base: (?)

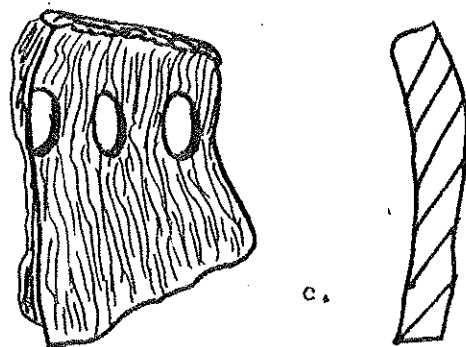
Shape: Jar form (?)

SIZE OF SAMPLE: 20

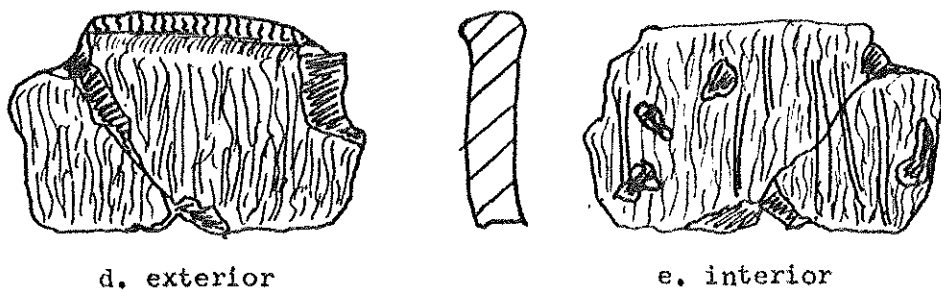
COMMENTS: In a large number of cases it appears that the lip was flattened so that a small ridge of clay was extruded, this extrusion may be either internal or external on a horizontal plane. However, in the majority of cases it is external, indicating that possibly the internal ridge was removed during the "finishing" process.



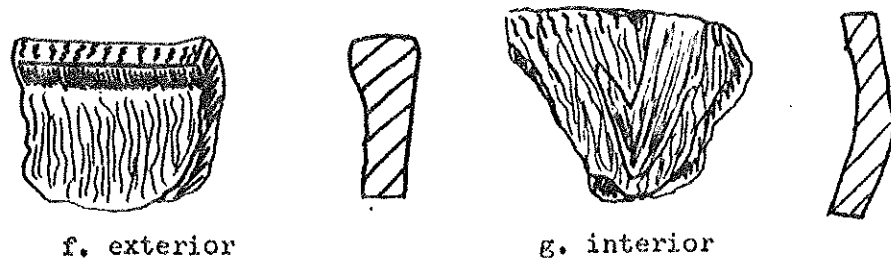
RADFORD CORDMARKED var. PUNCTATE LIP



RADFORD CORDMARKED var. PUNCTATE RIM



RADFORD CORDMARKED var. STRAIGHT



RADFORD CORDMARKED var. STRAIGHT

Radford Cordmarked var. Folded Rim (Fig. 6,a-b)

PASTE:

Method of Manufacture: Coiled (?) and then malleated with a cordwrapped paddle and anvil

Color: Grey to tan

Temper:

Size: Coarse

Material: Limestone

Texture: Varies, generally porous, quite contorted, and highly leached

SURFACE TREATMENT:

Exterior: Cordmarked

Interior: Smoothed

DECORATION: None

FORM:

Lip: Flat to slightly rounded

Rim: Folded and outflaring

Neck: Concave

Body: (?)

Base: (?)

Shape: Jar form (?)

SIZE OF SAMPLE: 22

COMMENTS: This rim form is highly similar to Radford Cordmarked variety Straight Rim, however, instead of the external fold of the lip being the result of a flattening process, it is the result of manual folding. One example exhibits a castellation which does not appear to be known in the Radford series or any other Early Late Woodland ceramic tradition, and its presence may be regarded as indicating some Shenk's Ferry or other Late Woodland influence.

Page Cordmarked (Fig. 6, c-d)

PASTE:

Method of Manufacture: Coiled (?) and then malleated with
a cordwrapped paddle and anvil

Color: Light to dark grey

Temper:

Size: Coarse

Material: Limestone

Texture: Varies, generally porous, quite contorted and
highly leached

SURFACE TREATMENT:

Exterior: Cordmarked

Interior: Smoothed

DECORATION: None

FORM:

Lip: Flat to rounded; some examples exhibit slight folding

Rim: Vertical to outflaring exhibiting some collaring

Body: (?)

Base: (?)

Shape: Jar form (?)

SIZE OF SAMPLE: 5

COMMENTS: The tempering material incorporated in this ware is much finer in size than that exhibited in either the Radford or Watson "wares", therefore resulting in the production of a higher grade ceramic "ware". These sherds seem identical to Page Cordmarked as described by (Manson, MacCord & Griffon 1944: 405-406).

Page Cordmarked var. Punctated Rim (Fig. 7, a-b)

PASTE:

Method of Manufacture: Coiled (?) and then malleated with
a cordwrapped paddle and anvil

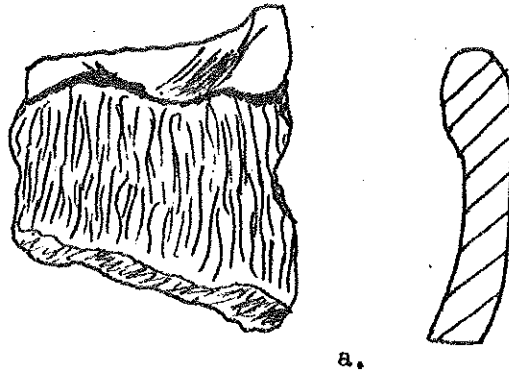
Color: Grey to tan

Temper:

Size: Coarse

Material: Limestone

Texture: Varies, usually porous, quite contorted and
highly leached



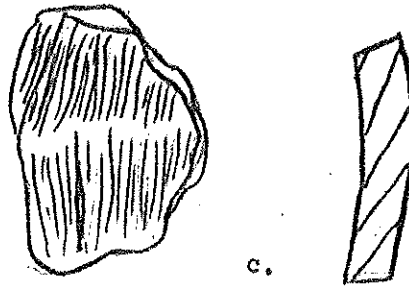
a.

RADFORD CORDMARKED var. FOLDED



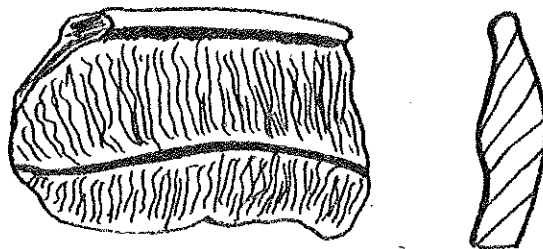
b.

RADFORD CORDMARKED var. FOLDED



c.

PAGE CORDMARKED



d.

PAGE CORDMARKED

Figure 6

SURFACE TREATMENT:

Exterior: Cordmarked

Interior: Smoothed

DECORATION: The exterior rim exhibits diagonally placed cord impressions or stamping and a single row of punctates parallel to the lip and positioned approximately 1/2 inch below the edge of the lip on the rim surface. These punctates are rather deep and form a protrusion or knob on the interior surface of the rim.

FORM:

Lip: Square

Rim: Slightly outflaring

Neck: Concave

Body: (?)

Base: (?)

Shape: Jar form (?)

SIZE OF SAMPLE: 4

COMMENTS: This variety is much more crudely made and more highly leached than the other Page varieties represented at 36 Bd 36. The deep punctates exhibited on these sherds are strongly reminiscent of Clemson's Island design motifs.

Page Cordmarked var. Impressed Rim (Fig. 7, c-d)

PASTE:

Method of Manufacture: Coiled (?) and then malleated with a cordwrapped paddle and anvil

Color: Grey to tan

Temper:

Size: Coarse

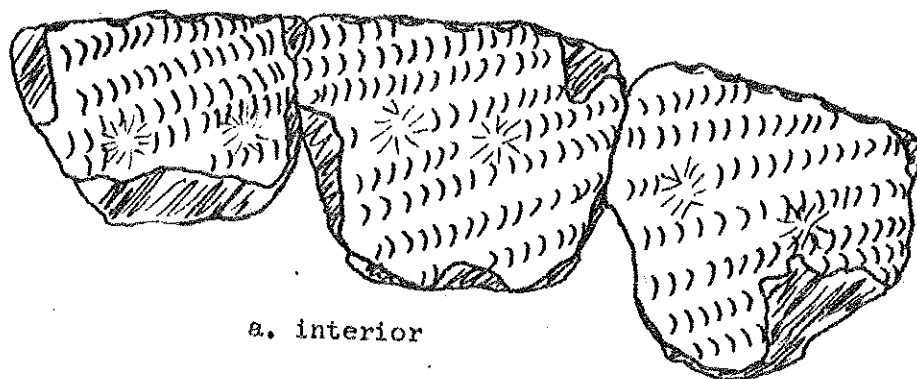
Material: Limestone

Texture: Varies, generally porous, quite contorted and highly leached

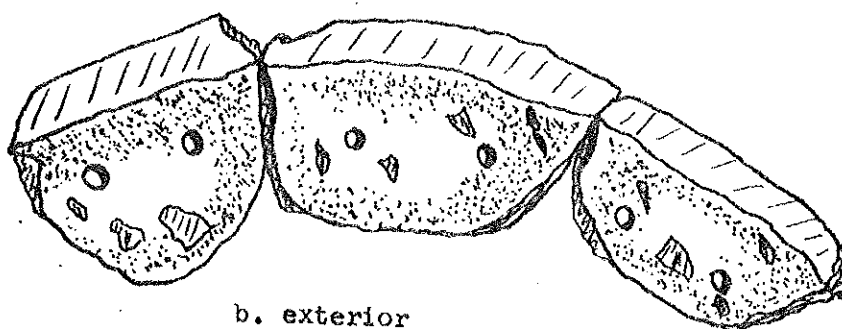
SURFACE TREATMENT:

Exterior: Cordmarked; the neck exhibits smoothed cordmarking

Interior: Smoothed

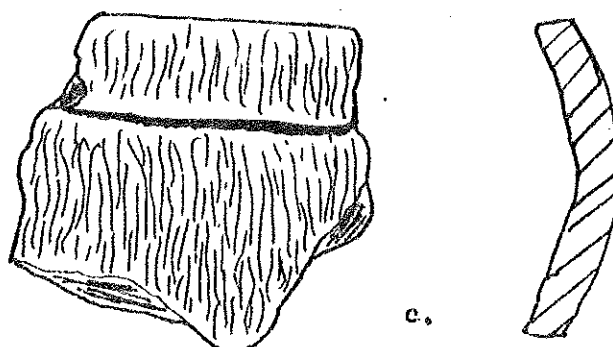


a. interior



b. exterior

PAGE CORDMARKED var. PUNCTATE RIM



c.



d.

PAGE CORDMARKED var. IMPRESSED RIM

DECORATION: Two examples exhibit smoothed cordmarking on their rims and cordwrapped stick or paddle edge impressions placed obliquely on the rim surface.

One example exhibits diagonally placed cordwrapped stick or paddle edge impressions on the surface of the rim and a horizontal knotted string or cord impression placed at the base of the rim.

One example exhibits haphazardly placed cord impressions on the exterior rim.

FORM:

Lip: Square to rounded

Rim: Vertical to outflaring; several of the sample exhibit definite collaring

Neck: Concave

Body: (?)

Base: (?)

Shape: Jar form (?)

SIZE OF SAMPLE: 4

COMMENTS: This variety exhibits some similarities in the placement of its decorative motif (cord impressions) to the Owascoid varieties found in the area of 36 Bd 36.

POTTERY TYPES ASSOCIATED WITH THE MONONGAHELA BASIN

Watson Plain (Fig. 8, a-c)

PASTE:

Method of Manufacture: Coiled (?) and then malleated with a paddle and anvil

Color: Grey; tan to orange

Temper:

Size: Coarse

Material: Limestone

Texture: Varies, generally porous, quite contorted and highly leached

SURFACE TREATMENT:

Exterior: Smoothed

Interior: Smoothed

DECORATION: None

FORM:

Lip: Square to rounded

Rim: Straight to slightly outflaring; in a few cases everted

Neck: Concave

Body: (?)

Base: (?)

Shape: Jar form (?)

SIZE OF SAMPLE: 26

COMMENTS: One sherd within the sample appears to exhibit a small folded collar, however in general form and method of surface treatment it conforms to the criteria of Watson Plain as described by Mayer-Oakes (1955: 195-196)

Watson Cordmarked var. Impressed Lip (Fig. 8, d-e)

PASTE:

Method of Manufacture: Coiled (?) and then malleated with a cordwrapped paddle and anvil

Color: Grey to orangish tan

Temper:

Size: Coarse

Material: Limestone

Texture: Varies, generally porous, quite contorted and highly leached

SURFACE TREATMENT:

Exterior: Cordmarked

Interior: Smoothed

DECORATION: Lip exhibits a series of diagonally placed impressions executed with a cordwrapped stick or paddle edge

Several examples exhibit, what appears to be notching rather than cord impressing

One example also seems to exhibit vertical incising in the neck region

FORM:

Lip: Square and outward sloping to rounded

Rim: Vertical to outflaring; lobing present in several cases

Neck: Concave

Body: (?)

Base: (?)

Shape: Jar form (?)

SIZE OF SAMPLE: 14

COMMENTS: One sherd exhibits impressions on the lip area which were executed with unusually heavy cordage, giving them, at first glance, the appearance of rather small finely executed rows of diagonal punctates. However, upon closer inspection under a binocular microscope these proved to be cord impression.

Upon examination of examples of cordage excavated at Sheep Rock (36Hul), it was found that cordage was manufactured there by the Indians during the Woodland Period, of sufficient proportion to produce the unique marks exhibited by this sherd. In other respects, this variety conforms to Mayer-Oak's description of Watson Cordmarked (1955: 194-195).

TYPES ASSOCIATED WITH THE RAYSTOWN BASIN

Saxton Impressed (Fig. 9,a-b)

PASTE:

Method of Manufacture: Coiled (?) and then malleated with a cordwrapped paddle and anvil

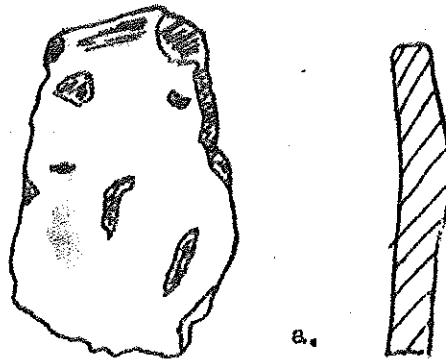
Color: Grey to orangish tan

Temper:

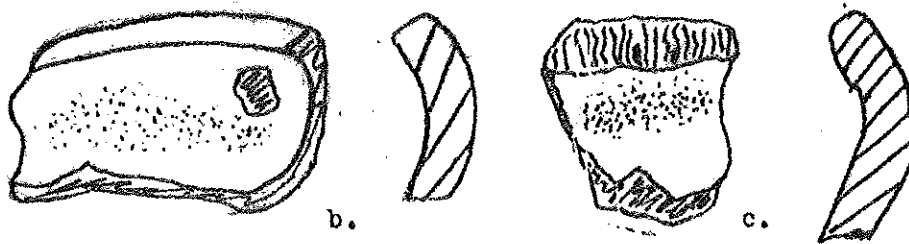
Size: Coarse

Material: Limestone

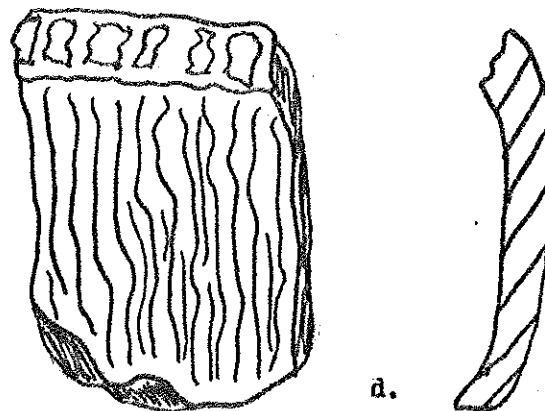
Texture: Varies, generally porous, quite contorted and highly leached.



WATSON PLAIN



WATSON PLAIN



WATSON CORDMARKED var. IMPRESSED LIP



WATSON CORDMARKED var. IMPRESSED LIP

SURFACE TREATMENT:

Exterior: Cordmarked

Interior: Smoothed

DECORATION: Diagonally placed cordwrapped stick or paddle edge impressions exhibited both on the lip and on the interior rim surface, in one case the impressions form a V on the interior rim.

FORM:

Lip: Flat and outward sloping

Rim: Vertical

Neck: Concave

Body: (?)

Base: (?)

Shape: Jar form (?)

SIZE OF SAMPLE: 4

COMMENT: This distinctive type seems to exhibit a combination of Watson and Page decorative motifs, resembling Watson in the placement of cordwrapped stick or paddle edge impressions on the lip surface (Mayer-Oakes 1955) and Page in the placement of cord impressions on the interior rim surface (Manson, MacCord and Griffin 1944:405-406).

Saxton Incised (Fig. 9,c)

PASTE:

Method of Manufacture: Coiled (?) and then malleated with a cordwrapped paddle and anvil

Color: Grey to tan to orange

Temper:

Size: Coarse

Material: Limestone

Texture: Varies, generally porous, quite contorted and highly leached

SURFACE TREATMENT:

Exterior: Cordmarked

Interior: Smoothed

DECORATION: Open triangle or chevron pattern of heavy incised lines running from the edge of the lip to the base of the rim, which could possibly be a collard form.

FORM:

Lip: Square to slightly rounded

Rim: Vertical to slightly outflaring

Neck: Concave

Body: (?)

Base: (?)

Shape: Jar form (?)

SIZE OF SAMPLE: 5

COMMENTS: Due to the fact that this type is limestone tempered and that its distinctive decorative attribute, consisting of an open triangle or chevron pattern of heavy incised lines running from the edge of the lip to the base of the rim, cannot be associated with any of the other limestone tempered series (Radford, Watson or Page) it has been assigned its own distinctive type designation. The discovery of this distinctively decorated limestone tempered type, leads us to believe that the sherds previously found at Sheep Rock and typed as Castle Creek Incised may be a quartz tempered variant of Saxton Incised.

Stonerstown Incised (Fig. 9,d)

PASTE:

Method of Manufacture: Coiled (?) and then malleated with a cordwrapped paddle and anvil

Color: Grey

Temper:

Size: Medium

Material: Flint/Chert

Texture: Microcrystalline

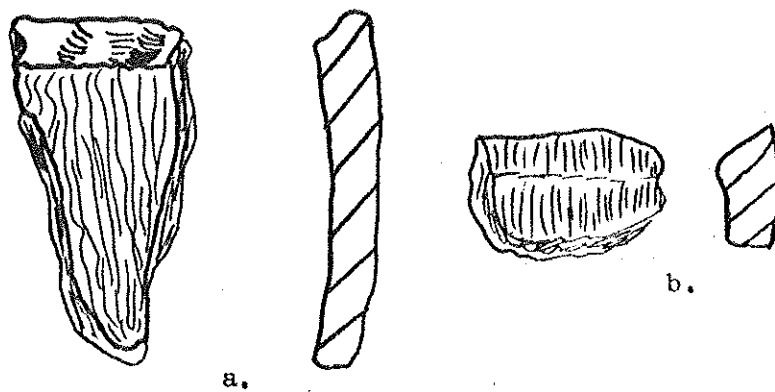
SURFACE TREATMENT:

Exterior: Cordmarked

Interior: Smoothed

DECORATION: Open triangle or chevron pattern of heavy incised lines running from the edge of the lip to the base of the rim.

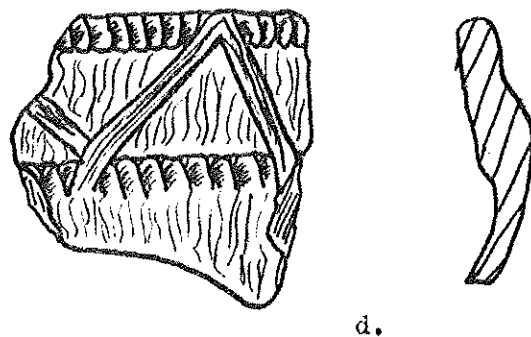
One example also exhibits thumbnail incisions on the upper portion of the rim



SAXTON IMPRESSED



SAXTON INCISED



STONERSTOWN INCISED

FORM:

Lip: Square

Rim: Outflaring and collared

Neck: Concave

Body: (?)

Base: (?)

Shape: Jar form (?)

SIZE OF SAMPLE: 3

COMMENTS: These sherds closely resemble the limestone tempered type Saxton Incised, representing the imposing of a limestone tempered "ware" decoration (chevron incised pattern) on finer chert tempered "ware".

Workman Cordmarked (Fig. 10, a-c)

PASTE:

Method of Manufacture: Coiled (?) and then malleated with a cord wrapped paddle and anvil

Color: Grey to tan

Temper:

Size: Coarse

Material: Quartz

Texture: Megacrystalline

SURFACE TREATMENT:

Exterior: Cordmarked

Interior: Smoothed

DECORATION: None

FORM:

Lip: Square or flat to rounded; a few cases exhibiting sloping

Rim: Vertical to outflaring; folding and overhang present in a few cases

Neck: Concave

Body: (?)

Base: (?)

Shape: Jar form (?)

SIZE OF SAMPLE: 5

COMMENTS: These sherds bear a great resemblance to the undecorated cordmarked varieties of the Radford Series, found at 36 Bd 36. The main difference lies in the tempering material used in their manufacture, and may perhaps indicate the imposing of a limestone tempered form on quartz tempered ceramics.

Workman Cordmarked var. Impressed Lip (Fig. 10, d-e)

PASTE:

Method of Manufacture: Coiled (?) and then malleated with a cordwrapped paddle and anvil

Color: Grey to tan

Temper:

Size: Coarse

Material: Quartz

Texture: Megacrystalline

SURFACE TREATMENT:

Exterior: Cordmarked

Interior: Smoothed

DECORATION: Diagonal or horizontal cordwrapped stick or paddle edge impressions on the lip and in one case extending onto the rim area. One example also exhibits diagonal cord impressions on the interior of the rim.

FORM:

Lip: Flat and outward sloping

Rim: Vertical to outflaring

Neck: Concave

Body: (?)

Base: (?)

Shape: Jar form (?)

SIZE OF SAMPLE: 6

COMMENTS: On some of the sherds the cord impressions are so deeply executed that it causes a lobing appearance at the juncture of the lip and rim areas.

These sherds resemble those of the limestone tempered type, Watson Cordmarked var. Impressed Lip in regard to decorative motif and its zone of placement on the vessel. This may be indicative of the imposing of limestone tempered "ware" design motifs on quartz tempered pottery.

Workman Cordmarked var. Impressed Rim (Fig. 10, f-g)

PASTE:

Method of Manufacture: Coiled (?) and then malleated with
a cordwrapped paddle and anvil

Color: Grey to tan

Temper:

Size: Coarse

Material: Quartz

Texture: Megacrystalline

SURFACE TREATMENT:

Exterior: Cordmarked

Interior: Smoothed

DECORATION: Exhibit diagonally or horizontally placed cordwrapped stick or paddle edge impressions on the exterior portion of the rim. One example also exhibits incised lines on the neck area.

FORM:

Lip: Square and sloping to rounded; exhibiting some folding in a few cases

Rim: Vertical to outflaring; exhibiting folding and overhanging

Neck: Concave

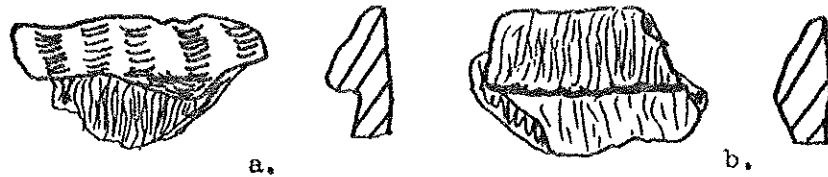
Body: (?)

Base: (?)

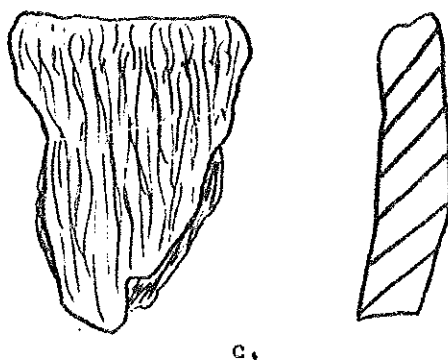
Shape: Jar form (?)

SIZE OF SAMPLE: 5

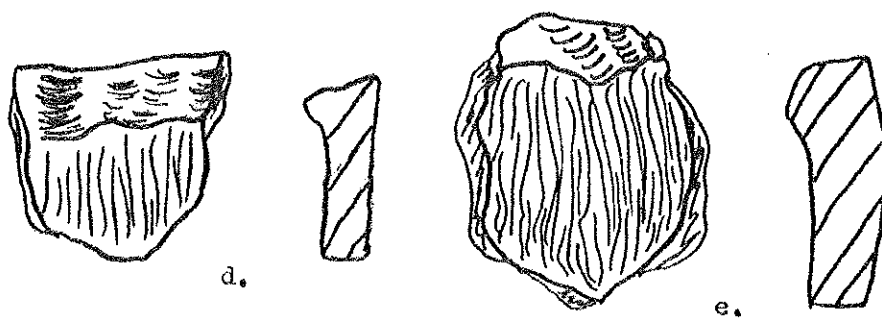
COMMENTS: The form of decoration and its zone of placement on the vessel, in this sample, is comparable to that exhibited by the limestone tempered type Page Cordmarked var. Impressed Rim, also present at 36 Bd 36, and may indicate the imposing of limestone tempered "ware" design motifs on quartz tempered ceramics.



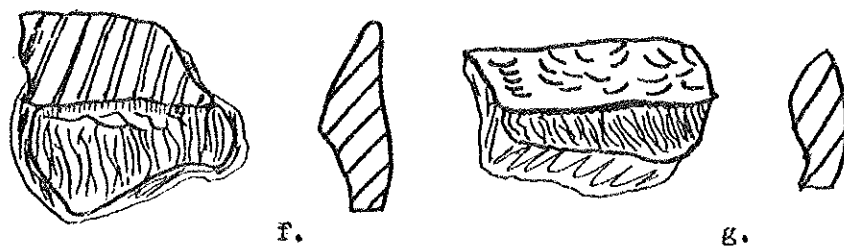
WORKMAN CORDMARKED



WORKMAN CORDMARKED



WORKMAN CORDMARKED var. IMPRESSED LIP



WORKMAN CORDMARKED var. IMPRESSED RIM

Workman Cordmarked var. Impressed Lip and Rim (Fig. 11, a)

PASTE:

Method of Manufacture: Coiled (?) and then malleated with
a cordwrapped paddle and anvil

Color: Dark grey to black

Temper:

Size: Coarse

Material: Quartz

Texture: Megacrystalline

SURFACE TREATMENT:

Exterior: Cordmarked

Interior: Smoothed

DECORATION: Diagonally placed cordwrapped stick or paddle edge
impressions exhibited both on the lip and exterior rim surfaces;
vertically placed cordwrapped stick or paddle edge impressions
on the interior rim surface.

FORM:

Lip: Rounded

Rim: Flat and outward sloping

Neck: Concave

Body: (?)

Base: (?)

Shape: Jar form (?)

SIZE OF SAMPLE: 2

COMMENTS: In regard to the decorative element and its zone of
placement on the vessel this sample seems to, in part, resemble
the limestone tempered type Saxton Impressed found at 36 Bd 36.
This again may be the result of transferring limestone tempered
decorative elements to quartz tempered ceramics.

Warriors Path Smooth var. Impressed Lip (Fig. 11, b-c)

PASTE:

Method of Manufacture: Coiled (?) and then malleated with a
paddle and anvil

Color: Grey to tan

Temper:
 Size: Medium
 Material: Flint/Chert
 Texture: Microcrystalline

SURFACE TREATMENT:

Exterior: Smoothed

Interior: Smoothed

DECORATION: Exhibit horizontal rows of cord impressions along the surface of the lip. One example exhibits vertically incised lines on the lip

FORM:

Lip: Square to rounded

Rim: Outflaring

Neck: Concave

Body: (?)

Base: (?)

Shape: Jar form (?)

SIZE OF SAMPLE: 4

COMMENTS: This variety seems to have close affinities with the limestone tempered Watson series in method of surface treatment, decorative motif and its zone of placement, and the presence of vertically incised lines on certain of the sample sherds. Again it would seem that the same relationship exists between the chert tempered Warriors Path Series and the various limestone tempered series found also at 36 Bd 36, as existed between the quartz tempered Workman Series and the limestone tempered "wares" - the transfer of decorative motifs and their zone of placement.

Warriors Path Smooth var. Incised Rim (Fig. 11, d-e)

PASTE:

Method of Manufacture: Coiled (?) and then malleated with a paddle and anvil

Color: Grey to reddish orange

Temper:
 Size: Medium
 Material: Flint/Chert
 Texture: Microcrystalline

SURFACE TREATMENT:

Exterior: Smoothed

Interior: Smoothed

DECORATION: Series of what appear to be vague finger nail impressions on the rim surface

FORM:

Lip: Flat to rounded

Rim: Outflaring and collared

Neck: Concave

Body: (?)

Base: (?)

Shape: Jar form (?)

SIZE OF SAMPLE: 3

COMMENTS: In general, these sherds tend to resemble the others in the Warriors Path Series, however the decorative motif and its zone of placement appear to be rather unique to the series. It can be noted that some varieties of the limestone tempered Page Series found at other sites have been described as exhibiting thumbnail gouges placed on the rim area (Manson, MacCord & Griffin 1944).

Warriors Path Cordmarked (Fig. 11, f)

PASTE:

Method of Manufacture: Coiled (?) and then malleated with a cordwrapped paddle and anvil

Color: Grey

Temper:

Size: Medium to coarse

Material: Chert or quartz

Texture: Microcrystalline or megacrystalline

SURFACE TREATMENT:

Exterior: Cordmarked

Interior: Smoothed

DECORATION: None

FORM:

Lip: Square to rounded

Rim: Outflaring

Neck: Concave

Body: (?)

Base: (?)

Shape: Jar form (?)

SIZE OF SAMPLE: 12

COMMENTS: One sherd within this sample exhibits quartz tempering, however, in general it tends to resemble those sherds contained within the chert tempered Warriors Path Series more so than it does the quartz tempered Workman Series.

Warriors Path Cordmarked var. Impressed Lip (Fig. 11, g)

PASTE:

Method of Manufacture: Coiled (?) and then malleated with a cordwrapped paddle and anvil

Color: Grey

Temper:

Size: Medium

Material: Flint/Chert

Texture: Microcrystalline

SURFACE TREATMENT:

Exterior: Cordmarked

Interior: Smoothed

DECORATION: Diagonally placed cord or cordwrapped stick or paddle edge impressions on the lip surface

FORM:

Lip: Square to slightly rounded; some exhibiting sloping while some exhibit folding

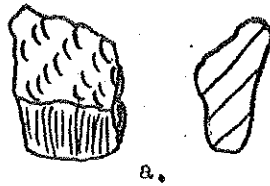
Rim: Outflaring

Neck: Concave

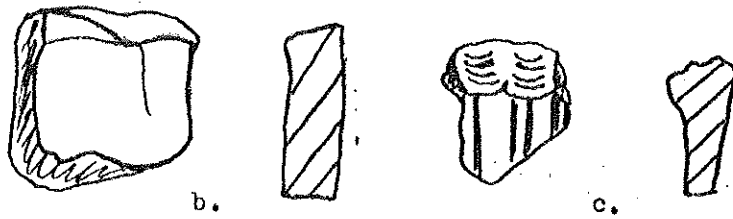
Body: (?)

Base: (?)

Shape: Jar form (?)



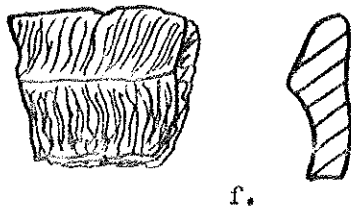
WORKMAN CORDMARKED var. IMPRESSED RIM and LIP



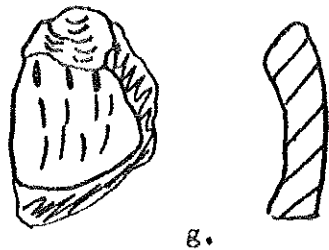
WARRIORS PATH SMOOTH var. IMPRESSED LIP



WARRIORS PATH SMOOTH var. INCISED RIM



WARRIORS PATH CORDMARKED



WARRIORS PATH CORDMARKED var. IMPRESSED LIP

SIZE OF SAMPLE: 12

COMMENTS: The design motif of this type-variety and its zone of placement on the vessel closely resembles that found in Watson Cordmarked var. Impressed Lip, again indicating the transfer of certain limestone tempered ceramic elements to "wares" of different temper.

Warriors Path Cordmarked var. Impressed Rim (Fig. 12, a-b)

PASTE:

Method of Manufacture: Coiled (?) and then malleated with a cordwrapped paddle and anvil

Color: Grey

Temper:

Size: Medium

Material: Flint/Chert

Texture: Microcrystalline

SURFACE TREATMENT:

Exterior: Cordmarked

Interior: Smoothed

DECORATION: Exhibit a series of diagonally placed cordwrapped stick or paddle edge impressions on the rim; on two of the sample sherds the diagonal impressions are repeated below the edge of the overhanging rim on the neck area

FORM:

Lip: Square to rounded

Rim: Vertical to outflaring and slightly folded

Neck: Concave

Body: (?)

Base: (?)

Shape: Jar form (?)

SIZE OF SAMPLE: 3

COMMENTS: These sherds closely resemble those of Page Cordmarked var. Impressed Rim (limestone tempered) and may indicate a transfer relationship.

Warriors Path Cordmarked var. Impressed Lip and Rim (Fig. 12, c-g)

PASTE:

Method of Manufacture: Coiled (?) and then malleated with
a cordwrapped paddle and anvil

Color: Light grey to tan

Temper:

Size: Medium

Material: Flint/Chert

Texture: Microcrystalline

SURFACE TREATMENT:

Exterior: Cordmarked

Interior: Smoothed

DECORATION: Horizontally placed cordwrapped stick or paddle edge
impressions exhibited on the lip and exterior rim surface;
vertically or diagonally placed cordwrapped stick paddle edge
impressions on the interior rim surface

FORM:

Lip: Round to slightly pointed

Rim: Flat and outward sloping

Neck: Vertical to concave

Body: (?)

Base: (?)

Shape: Jar form (?)

SIZE OF SAMPLES: 5

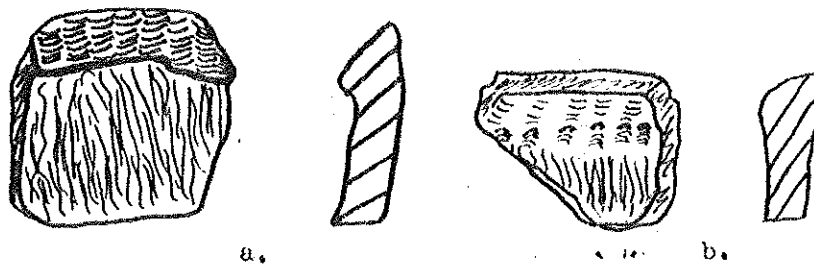
COMMENTS: This chert tempered type-variety bears a strong resemblance
to the limestone tempered type Saxton Impressed, indicating
another instance of a transfer relationship, from limestone
tempered "ware" to that of chert.

Warriors Path Cordmarked var. Punctate (Fig. 13, a-d)

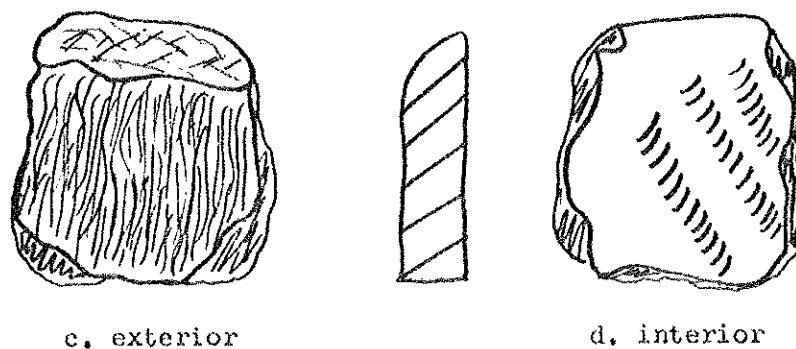
PASTE:

Method of Manufacture: Coiled (?) and then malleated with a
cordwrapped paddle and anvil

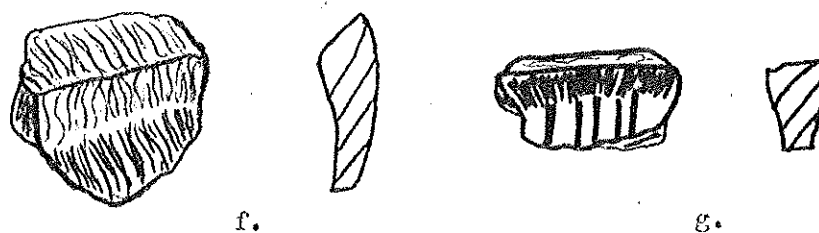
Color: Grey



WARRIORS PATH CORDMARKED var.
IMPRESSED RIM



WARRIORS PATH CORDMARKED var. IMPRESSED LIP and RIM



WARRIORS PATH CORDMARKED var. IMPRESSED LIP and RIM

Temper:

Size: Medium

Material: Flint/Chert

Texture: Microcrystalline

SURFACE TREATMENT:

Exterior: Cordmarked

Interior: Smoothed

DECORATION: One example exhibits diagonally placed cordwrapped stick or paddle edge impressions on the lip and interior-- exterior rim; deeply executed punctates forming a protrusion or knob on the exterior surface of the rim are also present

Two examples exhibit a series of diagonal cordwrapped stick or paddle edge impressions on the lip with another cord impression running horizontally on the lip intersecting the diagonal series. In addition they also exhibit diagonally placed cord impressions on the exterior and interior of the rim along with the deep punctated described above.

FORM:

Lip: Square

Rim:

Neck: Concave

Body: (?)

Base: (?)

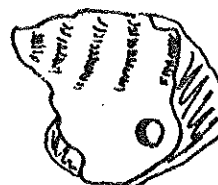
Shape: Jar form (?)

SIZE OF SAMPLE: 3

COMMENTS: These sherds resemble those of the limestone tempered type Page Cordmarked var. Punctated Rim in that they exhibit the same form of cordmarking, although in this particular sample cordmarking is also present on the lip as well as the rim area. The presence of deep punctates is again reminiscent of those exhibited in the Clemson's Island Series. This chert tempered type appears to be more finely made and the design motifs more carefully executed and elaborate than that of the comparable limestone tempered Page Series.



a. interior



b. exterior

WARRIORS PATH CORDMARKED var.
PUNCTATE



c. interior



d. exterior

WARRIORS PATH CORDMARKED var.
PUNCTATE

CONCLUSION

The complexity and diversity of design motifs, and their combined paste attributes, found at the Workman Site indicates that the local population belonged to a broadly based interaction sphere. The interaction sphere appears to be centered around the headwaters of the Potomac, Raystown and Monongahela Rivers. Excavations in the Johnstown Area, at both the Johnstown Site (Dragoo 1955) and the Holsopple Village Site (36Sol5), further indicate the breadth of the interaction sphere. Examination of the ceramic materials from the Holsopple Village Site, furthermore, shows that although the local group tended to more closely resemble communities located in the Monongahela Basin, it has a definite affinity with the Workman Site community.

Degree of affinity seems to be a function of geographic proximity. The materials of the Workman Site more closely resemble pottery types occurring in the Susquehanna Basin. We would expect that the further south a site is located, the more resemblance its ceramic assemblage would have to the Allegheny Ceramic Area.

Perhaps most striking are the differences between the early Late Woodland ceramic assemblages of Workman and Sheep Rock. Separated by a distance of approximately 40 miles, Sheep Rock exhibits none of the limestone tempered series found at Workman. This may indicate that during the early Late Woodland, two culturally distinctive Local populations occupied the Raystown Watershed.

CERAMIC PIPES

Introduction

The following descriptions of the ceramic pipes recovered at the Workman site during the last summer are limited to bowl fragments because this is all that was recovered. There are seven fragments, three of which belong to one pipe; all are from the later Woodland periods. Description consists of decoration, color, temper, and type. Few cultural associations could be made but some hypotheses had been postulated in the previous report (Huner et al 1966: 536).

Bowl Fragments (Fig: 14)

The bowl fragments are made of clay without temper although one fragment (A67.2.2457) Fig. 14J-L) exhibited a tiny piece of quartz as an aplastic. Color varies from grey to tan, the majority being grey. Thickness varies from 2.5 to 6mm. Other dimensions are irrelevant since the fragments are too small to calculate accurately the total pipe dimensions.

Decoration

Decoration consists of a cord-impressed design in three varieties: vertical to lip (Fig. 14, g-i); horizontal to lip (Fig. 14, p-r) or a combination of the two (Fig. 14j-l). The vertical variety consists of alternate lines of cord impressions and undecorated smoothed portions. This vertical design described above closely resembles "Monyock Cord-impressed" pipes in the Monongahela Complex of the upper Ohio River Valley (Mayer-Oakes 1955: 115, 55-A; 223, 26-T.)

Temper

Temper was identified visually by the naked eye or by microscope, or chemically. In all but one fragment (A67.2.2457) the clay was very fine, making temper imperceivable by the techniques employed, if it is present at all. The exception noted resembled the other fragments except for one tiny piece of quartz. The fineness of the clay employed in the pipes was probably utilized because of easy workability of the purpose for which the pipes were intended (ceremonial), necessitating greater care in clay selecting, preparation and final technique. It should be noted that Matson found that although the clay utilized in the manufacture of pipes was much finer and without temper than that of the ceramics of the Young site, it was the same clay (1937).

Manufacture

Marks on the interior surface of all bowls exhibit work marks, implying a scooping out technique, using a solid clay lump and twig or bone.

Types

One fragment (A67.2.1701) closely resembles a "Monyock Cord-impressed" pipe in the Monongahela complex of the upper Ohio River Valley (Mayer-Oakes 1955: 223, 26-T) in decoration: vertical cord-impressions; form: tubular; surface treatment: burnishing.

A second fragment (A67.2.1932), (three pieces all to one pipe) can also be typed "Monyock Cord-impressed" even though decoration is absent. Typing is made on the basis of form: collared and curvature of bowl; surface treatment: burnishing.

The last three fragments appear less well worked. The first (A67.2.2445) exhibits faint vertical cord-impressions similar to the Mayer-Oakes' "monyock" pipes. However, it was typed with no association because the pipe's surface treatment: unburnished and form: apparently the base of a right angle bowl, differed too much from the Mayer-Oakes' "monyock" types. Fragment (A67.2.2887) resembles fragment A67.2.1932 in form: collared. However, it is unburnished, and the design is horizontal cord-impressed lines, possibly cord stamped bearing less similarity to the previously noted "Monyock" types. The last fragment (A67.2.2457) could be tubular as fragment A67.2.1701 is, but the vertical-horizontal design does not resemble any of the Mayer-Oakes' types noted above. The cord impressed design could possibly be cord stamped or marked also.

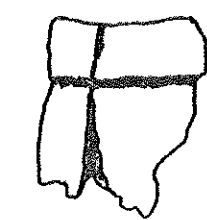
Conclusion

No conclusions can be drawn since lack of time to completely research relevant materials prohibited further work on this season's pipes. One obvious inference can be drawn: since the site from which these pipes have come is a late Woodland occupation, and the "Monyock" type pipes are dated to the late Woodland period, we can assume that our pipes are contemporary to those of the upper Ohio River Valley. Whether they were acquired through trade or manufactured locally using the "Monyock" design and form is not known, or likely to be determined; both are probable.

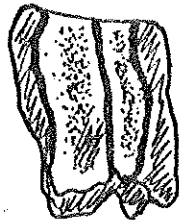
EXOTIC CERAMIC OBJECTS

Canis Effigy (Fig. 15, a-b)

An untempered fired clay object (A67.2.2442), unusually shaped, is possibly a variety of Watson cordmarked pottery. Although its surface has been smoothed it bears resemblance to Watson & Monongahela cordmarked pottery (Mayer-Oakes 1955: 120, 60.1) which exhibits a crinolated rim and a row of horizontal appendages along the rim. The Workman object has two



a. exterior



b. interior



c. top



d. exterior

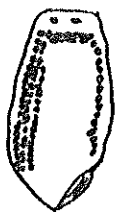


e. interior



f. top

MONYOCK BOWL FRAGMENT (A67.2.1932)



g. exterior



h. interior



i. top

MONYOCK BOWL FRAGMENT (A67.2.1701)



j. exterior



k. interior



l. top

PIPE BOWL FRAGMENT (A67.2.2457)



m. exterior



n. interior



o. top

PIPE BOWL FRAGMENT (A67.2.2445)



p. exterior



q. interior



r. top

PIPE BOWL FRAGMENT

(A67.2.2886)

crinulations, one exterior appendage and an interior appendage which could possibly be an effigy lug handle (?). Similarity to an untempered bird head bowl appendage (Mayer-Oakes 1955:167, 104-A) is another possibility although is representation of a different animal and probably a wolf, fox, or dog (Hence, the generic term canis) is probable. In fact, similar effigies have been observed on the Holsopple Village Site ceramics. General dating is possible through its presence in a Late Woodland occupied site and the types of pottery it bears resemblance to, which are of the same time period.

Ceramic Bead (Fig. 15, c-e)

A small fired clay bead with a $9/16$ in. diameter and $1\ 14/16$ in. circumference was recovered; unfortunately it is in the possession of the Workman family and could not be catalogued. Drawings, description and photographs, however, were made in the field. The bead evidence no apparent tempering and was not perfectly round due in part to irregularities created in molding. It was apparently made from a solid lump of clay through which a hole was made. Its color is tan with three small red areas in the clay which are believed to be red orche. The decoration consisted of a series of incision marks (such as one's fingernail would make) around the bead. No pattern was exhibited - just a snaking in lines (((((. The bead did not perfectly match any bead in the research material at hand. A survey of the literature available does not reveal any other ceramic beads for this time period. A general date somewhere in the Late Woodland period is all that can be inferred since no other ceramic beads with which comparisons could be based could be located, and no precise provenience or associations for the bead is known. The beads function is obviously mere conjecture and based on the known use to which the historic Indian put them: by itself as a pendant or in combination with other beads or objects for decoration.

Miniature Pot (?) (Fig. 15. f-j)

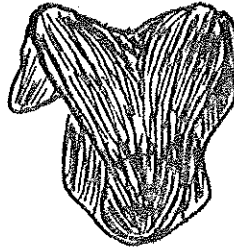
A recovered sherd fragment is tan in color, .4-.5 cm in width, and appears to be part of a miniature pot (or perhaps the conical base of a jar). The interior is smoothed with some irregularities due to paddle and anvil method of manufacture. The exterior is smoothed cordmarking. Although no temper is present, limestone temper is likely due to the leached holes. The miniature pot or conical base hypothesis is made on the basis of curvature and wall thickness. A general date of Late Woodland has been determined because of its presence on the Workman site occupied at this time period. A second fragment, a rim (Fig. 10g-i) is exactly like the first fragment except in width (.4-1.1cm).

Conclusion

The only conclusion which can be drawn is the general date obtained for the Oddity, Bead and Miniature Pot, possible through their presence in an early Late Woodland Site (Workman) and presence of similar, though not identical, objects at other Late Woodland sites throughout Pennsylvania. They also indicate that ceramics were applied to functions other than utilitarian which could be interpreted as some form of cultural specialization.



a. three-quarter
view

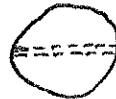


b. front view

CANIS EFFIGY



c. obverse

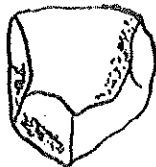


d. cross section



e. reverse

CERAMIC BEAD



f. interior

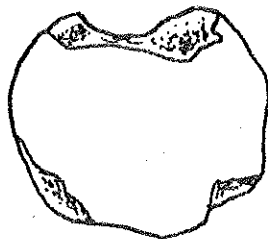


g. exterior

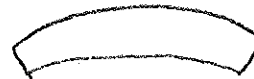


h. top

MINATURE POT



i. exterior



j. top

MINATURE POT

INITIAL ANALYSIS OF CHARCOAL MATERIALS
FROM THE WORKMAN SITE (36Ba36)

by

George Drobnoek

ABSTRACT

This chapter is concerned with the preliminary laboratory analysis of the charcoal samples recovered from the Workman Site (36Bd36) during the 1967 excavation season. The techniques involved in this analysis, and the selection of those samples best suited for further analysis are discussed.

ACKNOWLEDGMENTS

I sincerely thank the members of the field school, but especially, my advisor, Lorraine Willey, for her help in establishing the format of this paper.

TABLE OF CONTENTS

	<u>Page</u>
ABSTRACT	129
ACKNOWLEDGMENTS.	130
TABLE OF CONTENTS	131
I. INTRODUCTION.	133
II. LABORATORY PROCEDURES.	133
III. CRITERIA USED IN SAMPLE EVALUATION	134
Texture	135
Extrinsic Factors	135
Location of the Sample in the Site	135
IV. SELECTION OF SAMPLES FOR C-14 DATING.	135
V. CONCLUSION	136
APPENDIX I: Charcoal Samples Collected from the Workman Site (36Bd36)	137
APPENDIX II: Archaeological C-14 Sample Data Record Forms for Selected Samples.	138

INTRODUCTION

This paper will continue the charcoal analysis undertaken by John Azer in 1966, to complete the charcoal sample catalogue and define several new methods of examining samples.

The 1967 catalogue will contain samples from both the Workman (36Bd36) and Sheep Rock (36Hul) sites. A total of 80 samples were collected during the season -- 46 from Sheep Rock and 34 from Workman. The Workman samples have been emphasized because the site's occupation date has not yet been established.

LABORATORY PROCEDURES

The laboratory procedures discussed in this section apply to all samples analyzed.

Each sample was first examined with a magnifying glass for such contaminants as rootlets and large particles of imbedded soil. Soil affects the weight of the charcoal, while rootlets carbonize within it and update it.

Some samples were composed of chemically reduced or carbonized roots with the appearance of charcoal. According to Joseph W. Michels, assistant professor of anthropology at the University, two of seven samples sent to the University of Michigan following the 1966 season were reduced root samples.

To isolate such samples this year, each sample was sectioned longitudinally under a microscope. In a carbonized root sample, the root fibers -- approximately 1/10 millimeter long and reddish-bronze in color -- run parallel to the sample's grain. With this method, three of the 80 samples were found to be reduced roots; all others were charcoal.

This method of isolating samples of carbonized roots has the disadvantage that charcoal samples containing only rootlets which have grown into them in the site, could also, by chance, have root fibers running parallel to the grain.

In the second step of analysis, all samples were weighed on pre-weighed sections of foil, with the measurement carried out to the second decimal place when necessary. If the sample had been properly wrapped in foil in the field, it was then wrapped again in foil. Samples which had been wrapped in plastic bags in the field were weighed and listed as contaminated by improper handling.

There was much discussion at this year's field school about the best methods for handling charcoal in the field. While some feel that samples are not contaminated in any way by placing them in plastic bags, others, Azer (1967 in Michels and Smith 1967) and Robbins (1965) among them, recommend that samples be carefully wrapped in foil or a glass container with a metal lid to ensure the accuracy of the C-14 dating.

For each sample, a 3" by 5" card was prepared listing:

1. Field number
2. Provenience
3. Texture
4. Depth below datum
5. Type of contamination
6. Date of collection for large samples over eight grams

Dates of recovery from the site were recorded for the larger samples from Workman because it was felt these would be the most probable specimens to be dated.

The samples were then stored in labeled boxes in the laboratory.

The summary of laboratory procedures for treating and packaging charcoal samples, then, is as follows:

1. Samples were cleaned of contamination
2. Examined for carbonized roots
3. Weighed
4. Rewrapped
5. Identified on a 3" by 5" card listing:
 - a. Field number
 - b. Provenience
 - c. Texture
 - d. Depth below datum
 - e. Weight in grams
 - f. Type of contamination
 - g. Date of collection

CRITERIA USED IN SAMPLE EVALUATION

The criteria used to evaluate the samples are the same as those defined by Azer in 1966 (in Michels and Smith 1967). They include texture, extrinsic factors, and location of the sample in the site.

Texture

Texture was classified as:

Fine -- less than 1/8 inch in diameter
 Coarse -- 1/8 to 1/2 inch in diameter
 Chunk -- over 1/2 inch in diameter

Extrinsic Factors

Extrinsic factors range from soil, such as sand, ash, or others, to rootlets, shell, bone and other extraneous material.

Location of the Sample in the Site

The samples from Workman have been plotted according to pit designation and depth below datum (see Appendix I).

SELECTION OF SAMPLES FOR C-14 DATING

With its pottery styles, the Workman site is presently thought to be Late Woodland, although Brewerton point types in the lithic inventory suggest that it may be a two-component site. Hopefully, the question will be resolved by the dates derived from the charcoal samples.

The samples from Workman were cleaned of contamination, weighed, and wrapped in foil by the procedures described earlier. All pertinent information about them was listed on Archaeological C-14 Sample Data Sheets which will be sent to the laboratory with the samples (see Appendix II).

The specific samples selected for analysis are:

Field number:	A67.02.1101	grams: 46.3
Provenience:	A12	
Depth Below Datum:	16"-35"	
Contamination:	Rootlets and sandy clay	
Date collected:	18 July 1967	

Field number:	A67.02.1255	grams: 23.1
Provenience:	A12	
Depth Below Datum:	19"-35"	
Contamination:	Rootlets and clay	
Dated collected:	17 July 1967	

Field number: A67.02.2181 grams: 13.4
 Provenience: D13
 Depth Below Datum: 7"-17"
 Contamination: Rootlets and sandy clay
 Date collected: 1 August 1967

Field number: A67.02.2322 grams: 20.7
 Provenience: A08
 Depth Below Datum: 9"-17"
 Contamination: Rootlets and sandy clay
 Date collected: 18 July 1967

Field number: A67.02.1522 grams: 50.0
 Provenience: B12
 Depth Below Datum: 20"-35"
 Contamination: Rootlets
 Date collected: 18 July 1967

CONCLUSION

The techniques used for initial analysis of the charcoal samples from the Sheep Rock (36Hul) and Workman (36Bd36) sites have been described. While it is understood that alternative methods for analyzing charcoal samples are known, the present format devised by Azer was considered the most practical in the time allotted for preparing the charcoal for dating.

APPENDIX I

CHARCOAL SAMPLES COLLECTED FROM THE WORKMAN SITE (36Ba36)

Field No.	Grams	Square	B.D. (in.)	Date Collected ¹
A67.02.0053	5.00	A-11	6 to 13	
A67.02.0073	2.50	A-14	15 to 18	
A67.02.0108	3.60	A-12	24	
A67.02.0550	1.00	A-11	14 to 18	
A67.02.0532	5.40	A-11	6 to 14	
A67.02.0567	5.80	C- 7	5 to 19	
A67.02.0609	2.00	A-10	12	
A67.02.0662	28.70	B- 8	19	
A67.02.0712	9.50	B- 9	20 to 25	
A67.02.0872	0.90	A-12	9 to 17	
A67.02.0881	2.00	A-12	16 to 29	
A67.02.1101	46.30	B-10	16 to 35	18 July
A67.02.1150	1.50	A-12	17 to 35	
A67.02.1218	8.00	A- 7	16 to 21	
A67.02.1255	23.10	A-12	19 to 35	17 July
A67.02.1295	1.00	A- 7	3 to 9	
A67.02.1309	1.30	A-12	11 to 14	
A67.02.1448	0.70	A-12	19 to 35	
A67.02.1506	0.85	C-11	5 to 18	
A67.02.1522	50.00	B-12	20 to 35	18 July
A67.02.1541	2.60	C- 8	5 to 14	
A67.02.1626	1.00	B-12	5 to 20	
A67.02.1635	0.80	B-12	5 to 20	
A67.02.1740	1.00	C-12	11 to 20	
A67.02.1871	0.50	B- 9	10 to 16	
A67.02.1880	2.00	B-12	18 to 35	
A67.02.1910	2.00	A-13	17 to 18	
A67.02.2109	9.80	A-11	18 to 21	
A67.02.2181	13.40	D-13	7 to 17	1 August
A67.02.2215	6.60	A- 8	28 to 30	
A67.02.2284	17.15	B-12	17 to 30	
A67.02.2315	0.70	A-10	4 to 17	
A67.02.2322	20.70	B- 8	9 to 17	18 July
A67.02.2376	2.00	B-13	15 to 22	

¹Dates are for samples which are over eight grams.

APPENDIX II

ARCHAEOLOGICAL C-14 SAMPLE DATA RECORD FORMS FOR SELECTED SAMPLES

1. Site 36Ba36 2. Geographic Location 1900 Everett Quadrangle
3. Latitude and Longitude Coordinates 40° 13'N 78° 16'W
4. Site Description Village location.

5. Sample Weight 46.3 grams 6. Sample Field Number A67.2.1101
7. Sample Composition Charcoal, rootlets.
8. Collection Technique Trowel and hands.
9. Date of Collection 18 July 1967 10. Collector Taylor & Herrick
11. Provenience (Pit and Level) A-12
12. Stratigraphic Position of Samples _____

13. Cultural Affiliation Potsherds, worked bone, flint chips.

14. Estimated Date of Samples According to Artifact Analysis Late Woodland.

15. Relevant Publications Sheep Rock Report.
16. Submitted by _____ Date of Submission _____
17. Laboratory _____ 18. Laboratory Treatment of Difficulties _____

19. C-14 Date _____
20. Importance of Measuring Sample : 21. Interpretation (Significance of Date)
This sample is one of the
non-contaminated samples from
the area above Burial 67-2. A
C-14 date may make it possible
to indicate the time period in
which the person lived, and
also give an idea of the date
of the associated pottery.
22. Attached Pages (Explain) _____

ARCHAEOLOGICAL C-14 SAMPLE DATA RECORD FORMS FOR SELECTED SAMPLES

1. Site 36Bd36 2. Geographic Location 1900 Everett Quadrangle
3. Latitude and Longitude Coordinates 40° 13'N 78° 16'W
4. Site Description Village location, 13,000 sq. yds., nearest water 150' NNE, vegetation present -- locust and cherry trees and grass, 18" deposit soil matrix -- brown sandy loam.
5. Sample Weight 50 grams 6. Sample Field Number A67.2.1522
7. Sample Composition Charcoal, soil, rootlets.
8. Collection Technique Trowel and hands.
9. Date of Collection 18 July 1967 10. Collector _____
11. Provenience (Pit and Level) B-12 20"-35" BD
12. Stratigraphic Position of Samples _____
13. Cultural Affiliation Potsherds, flint chips.
14. Estimated Date of Samples According to Artifact Analysis Late Woodland.
15. Relevant Publications Sheep Rock Report.
16. Submitted by _____ Date of Submission _____
17. Laboratory _____ 18. Laboratory Treatment of Difficulties _____
19. C-14 Date _____
20. Importance of Measuring Sample
 To determine date of
 occupation.

21. Interpretation (Signifi-
 cance of Date)

22. Attached Pages (Explain) _____

ARCHAEOLOGICAL C-14 SAMPLE DATA RECORD FORMS FOR SELECTED SAMPLES

1. Site 36Bd36 2. Geographic Location 1900 Everett Quadrangle
3. Latitude and Longitude Coordinates 40° 13'N 78° 16' W
4. Site Description Village location.

5. Sample Weight 23.1 grams 6. Sample Field Number A67.2.1255
7. Sample Composition Charcoal, soil, rootlets.
8. Collection Technique _____
9. Date of Collection 17 July 1967 10. Collector Taylor & Herrick
11. Provenience (Pit and Level) A-12 19"-35" BD
12. Stratigraphic Position of Samples _____

13. Cultural Affiliation Potsherds.

14. Estimated Date of Samples According to Artifact Analysis _____
Late Woodland.
15. Relevant Publications Sheep Rock Report.
16. Submitted by _____ Date of Submission _____
17. Laboratory _____ 18. Laboratory Treatment of Difficulties _____

19. C-14 Date _____
20. Importance of Measuring Sample 21. Interpretation (Signifi-
 To determine date of cance of Date)
 occupation. _____

22. Attached Pages (Explain) _____

ARCHAEOLOGICAL C-14 SAMPLE DATA RECORD FORMS FOR SELECTED SAMPLES

1. Site 36Bd36 2. Geographic Location 1900 Everett Quadrangle
3. Latitude and Longitude Coordinates 40° 13'N 78° 16'W
4. Site Description Village location.

5. Sample Weight 13.4 grams 6. Sample Field Number A67.2.2181
7. Sample Composition Charcoal, sand, rootlets.
8. Collection Technique Trowel and hands, placed in foil.
9. Date of Collection 1 Aug. 1967 10. Collector Best & Ruskin
11. Provenience (Pit and Level) D-13 7"-17" BD
12. Stratigraphic Position of Samples _____

13. Cultural Affiliation Potsherds, projectile points, scraper, possible knife.
14. Estimated Date of Samples According to Artifact Analysis Late Woodland.
15. Relevant Publications Sheep Rock Report.
16. Submitted by _____ Date of Submission _____
17. Laboratory _____ 18. Laboratory Treatment of Difficulties _____

19. C-14 Date _____
20. Importance of Measuring Sample To determine date of occupation.

21. Interpretation (Significance of Date)

22. Attached Pages (Explain) _____

ARCHAEOLOGICAL C-14 SAMPLE DATA RECORD FORMS FOR SELECTED SAMPLES

1. Site 36Bd36 2. Geographic Location 1900 Everett Quadrangle
3. Latitude and Longitude Coordinates 40° 13'N 78° 16'W
4. Site Description Village Location.

5. Sample Weight 20.7 grams 6. Sample Field Number A67.2.2322
7. Sample Composition Charcoal, soil, rootlets.
8. Collection Technique Trowel and hands.
9. Date of Collection 18 July 1967 10. Collector Rehm & Gamber
11. Provenience (Pit and Level) B-8 9"-17" BD
12. Stratigraphic Position of Samples _____

13. Cultural Affiliation 1 potsherd, 1 jawbone.

14. Estimated Date of Samples According to Artifact Analysis _____
Late Woodland.
15. Relevant Publications Sheep Rock Report.
16. Submitted by _____ Date of Submission _____
17. Laboratory _____ 18. Laboratory Treatment of Difficulties _____

19. C-14 Date _____
20. Importance of Measuring Sample To determine date of occupation.

21. Interpretation (Significance of Date)

22. Attached Pages (Explain) _____

FEATURES AND POST MOLD PATTERNS
OF THE
WORKMAN SITE (36Bd36)

by

Charles C. Kolb and John B. Huner

ABSTRACT

The features, burials, and post mold patterns present at the Workman Site (36Bd36) are not unusual, but do represent unique combinations of culture traits all of which are to be found in the micro-culture areas surrounding south central Pennsylvania. The site has a thin occupational deposit, most of which has been previously disturbed by land clearing and plow cultivation. The stratigraphy is further complicated by the multicomponent nature of the site. Notably lacking are the "typical" Woodland bell-shaped storage pits; but the apparent lack of a stockade and the predominance of late Middle and early Late Woodland pottery and projectile points would tend to indicate that practices such as the interrment of extended burials beneath "bathtub-shaped" fire/refuse pits, and extended family household dwellings occur chronologically earlier in the area than previously thought. The combination of burial practices, house patterns, and features, when correlated with the ceramics, places the Workman site chronologically later than the Shepard-Keyser Farm Complex of the Middle Potomac, the Watson Complex of the Upper Ohio, Clemson's Island of the Susquehannock Basin, and the Owasco of New York State; but earlier than the Monongahela Complex of the Upper Ohio, the Hughs Site Complex of the Middle Potomac, and Shenk's Ferry of the Susquehanna. The Workman Site is spatially marginal to these micro-culture areas.

ACKNOWLEDGEMENTS

It is fitting that the friends and colleagues of the authors who assisted in the preparation of this report be acknowledged, and we thus take the opportunity to do so. Certain individuals made outstanding contributions and deserve special mention and praise: Mr. Edward Reeder Herrick, III, of Juniata College, who made the initial compilation of the field feature notes. Miss Pamela Smith, of The Pennsylvania State University, who compiled the list of ceramics by types and be features, the results of which are tabulated in Appendix A. Mr. Carl Bebrich and Mr. Thomas Morgan, both of The Pennsylvania State University, assisted by providing the preliminary analysis of projectile points for the dwellings and features, their results being enumerated in Appendix B. Mr. Paul Heberling, formerly Dean of Men at Juniata College, aided the authors both in terms of relations with the College administration and by his impressive first-hand knowledge of the Raystown Basin. Miss Lorraine Willey, of The Pennsylvania State University, gave us invaluable assistance by her trouble-shooting of problems, criticism, editorial work, and general encouragement.

TABLE OF CONTENTS

	Page
ABSTRACT	145
ACKNOWLEDGEMENTS	146
TABLE OF CONTENTS	147
LIST OF ILLUSTRATIONS	148
I. INTRODUCTION	149
II. FEATURES AT THE WORKMAN SITE	150
Feature 67-1	151
Feature 67-2	151
Feature 67-3	152
Feature 67-4	152
Feature 67-5	153
Feature 67-6	153
Feature 67-7	154
Feature 67-8	154
Feature 67-9	155
Feature 67-10	155
Feature 67-11	155
Feature 67-12	155
Feature 67-13	156
Feature 67-14	156
Feature 67-15	156
Feature 67-16	157
Feature 67-17	157
Feature 67-18	157
Feature 67-19	157
Feature 67-20	158
III. BURIALS AT THE WORKMAN SITE	158
Burial 67-1 (#1)	158
Burial 67-2 (#2)	158
IV. POST MOLD PATTERNS AT THE WORKMAN SITE	159
House Pattern Number One	160
House Pattern Number Two	162
House Pattern Number Three	162
House Pattern Number Four	162
House Pattern Number Five	163
House Pattern Number Six	163
V. SUMMARY AND CONCLUSIONS	164
APPENDIX A: CERAMICS ASSOCIATED WITH FEATURES AND BURIALS	168
APPENDIX B: PROJECTILE POINT IDENTIFICATIONS AND CULTURAL AFFILIATIONS	174

LIST OF ILLUSTRATIONS

	<u>Page</u>
Figure 1. House Patterns at the Workman Site	161

INTRODUCTION

The post mold patterns and features at the Workman Site (36Bd36) are not archaeologically unique to those investigators familiar with late Middle and early Late Woodland prehistory in the Northeastern United States. The major exception to this generalization is the apparent interment of an individual in extended fashion in an elongated grave or burial pit, which is subsequently filled with refuse. The post mold patterns do offer some difficulties in the interpretation of actual discrete households. The modern plow zone cut well into the living surface of the site, and as a result only two or three inches of postmolds remain in the subsoil. Combined with the probability of two or more occupation phases, there is some difficulty in interpreting the house patterns, but at least six and perhaps seven have been discerned. In fact, several different shaped structures could be reconstructed from the remaining post molds. However, relying on archaeological and ethnographical data from other nearby areas, it may be assumed that the reconstructions of the dwellings are reasonably accurate.

The features provide almost a reverse problem in that they were fairly easy to recognize during field and subsequent laboratory analyses of the data once they had been defined in the field by soil changes and cultural associations. Definitions of "features" are numerous in the literature, but for the purposes of this report a feature is defined as any discernable soil change which can be excavated as a unit and which bears resemblance to a cultural deposit (fire pit, refuse pit, storage pit, etc.). In addition to the twenty features recovered during the 1967 excavation season, numerous soil stains such as layers of fired earth or charcoal flecked layers were observed. Common to these lenses is the lack of associated artifactual materials. These types of lenses did not actually fit into the definition of a feature, but were appropriately noted.

The last type of cultural deposit found at the Workman Site are human burials. These were normally easily recognized in the field due to the presence of human osteological materials. Two were recovered during the 1967 field season, and a third potential burial was noted during later laboratory analysis of the data. Extremely unfortunate is the high degree of acidity of the soil, which destroyed much of the bone (Smith 1966: 754-757). One of the burials is preserved well enough to permit intensive study, and an osteobiographical analysis appears elsewhere in this report.

The lack of correlative and comparative data from central Pennsylvania also adds to the difficulties experienced in interpreting the cultural manifestations at the Workman Site. The ceramic assemblage indicates that while one distinct culture group was present at Workman, a different culture group occupied the Sheep Rock Shelter (36Hul).

With the exception of Mary Butler's excavations in Somerset County (1939), the Workman Site is the only known excavated village site in central Pennsylvania. Therefore, it is felt that only tentative conclusions can be discerned from the data at this stage of analysis, and that some statements as to the cultural practices of the aboriginal inhabitants require verification by additional excavating and further laboratory analyses of the data already accumulated.

FEATURES AT THE WORKMAN SITE

As previously noted, the features of the Workman Site fall into rather common categories with no unusual features being encountered. The basic types of features at the Workman Site are fire pits, refuse pits, stained areas, and charcoal-flecked pits. The preserved fire pits were usually semi-circular or semi-conical in shape and usually between one and two feet in diameter and approximately one foot in depth. The fire pit was separated from a charcoal pit in that the fire pit contained very little charcoal and was generally contained or baked reddish orange earth, and could be discerned from the surrounding soil by a very hard layer of fired earth. The charcoal pit had the typical baked earth bottom but was filled with a mixture of charcoal and baked earth. A refuse pit appears to be a large fire pit filled with garbage or other midden-like materials. It is characterized by dark organic soils and a substantial amount of artifactual debris. Charcoal flecks are intermixed within the interior fill. Somewhat puzzling are certain areas found within the site area which consist of very shallow stained lens-like formations. These are referred to as stained areas and can be subdivided into two types: those of charcoal or dark organic soil and those of baked reddish orange earth indicative of firing. It is entirely possible that these shallow pits and the plowing which occurred historically on the site during the colonial and more recent occupation has obliterated or removed the outline of the pit leaving only the pit base. It should be recalled that the aboriginal surface was approximately four to six inches above the preserved "site floor" and only four inches below the modern soil surface. Since the plow zone extended approximately six to ten inches below the present surface, very little would remain of shallow pits. Perhaps the most unusual was the occurrence of refuse-filled pits above burials, which were of approximately the same dimensions and configuration of the burial pit or grave. The bottom of these refuse pits was fired earth approximately an inch thick, and indicated firing after interment, the burial being protected by a foot or more of soil underneath the fired zone. A listing of the ceramics recovered by feature can be found in Appendix A. The reader is also referred to Figure 1 for the locations of the features to be subsequently considered.

Feature 67-1

Feature 67-1, a fire pit, was 15-25" b.d., and approximately 4" below the preserved surface. It was approximately 10" by 10" and continued into the east balk 27" north of the southeast corner of grid B7. The feature appeared as a dark stain filled with lumps and flecks of charcoal, and although roughly squarish in surface configuration it was pyramidal-conical in actual shape. Shallow post molds 1-1 1/2" in diameter were found nearby throughout the square, and may represent cooking or drying racks, although no pattern was discerned. Two large, undefined dark strips of soil (possibly rotted bark or log fragments) protruded from the east balk into B7 on either side of Feature 67-1. These ran east-west and were approximately four feet long, one foot wide, and were shallow (no greater than 1-1/2"). One small fireburned fragment of sandstone (1" by 1-1/2" by 2") was found in the pit. No other artifacts were recovered. It should be noted that this feature was originally recognized by Smith (1967: 760), but was not excavated during the 1966 season. The 1967 excavation crews removed the feature and retained soil samples for future macro-botanical flotation analyses. All features from the 1967 excavation season were treated in a similar manner.

Feature 67-2

Feature 67-2 was 14-1/2" b.d. and 12" below the surface, with surface dimensions of 30" by 14", the longest axis running north-south. It was located in the center of grid All, 32-1/2" from the south (grid) wall, 42-1/2" from the east (grid) wall and 48" from the north (grid) wall. The feature first appeared as an accumulation of soft grey limestone (somewhat disintegrated) associated with six smooth, water-worn river rocks. There were approximately 60 lumps of grey limestone at the time of excavation, or nearly seven and a half pounds of material. The limestone may have been utilized by the aboriginal inhabitants as an aplastic or tempering material in pottery making when crushed. Much fragmented charcoal was found, as were 15 pieces of detritus, 5 fragments of charred bone, 18 prehistoric body sherds, and 9 other large, smooth rocks. The rocks were in positions suggesting that they had been purposefully placed by the aboriginal inhabitants. The soil colors varied considerably throughout the pit, suggesting heating or differential temperature firing. A feature listed as Feature 67-2b was arbitrarily designated in the field, and appears to be a continuation of Feature 67-2. This feature is a fire pit, approximately 18" b.d. and extended to 31-1/2" b.d. The surface configuration was nearly circular, 5' by 4-1/2' in dimension, with the longest axis running north-south (grid). The feature extended into the balk in the southeast corner of grid All, and a little more than half of the complete circle fell within this grid. A charcoal sample was taken at 24" b.d., a pecked cobble was recovered at 31" b.d., and a total of 56 potsherds, including one Radford Cordmarked Straight rim and one Clemsons Island Punctate variety, Clemsons Island Punctate rim were found scattered throughout the feature.

Feature 67-3

Feature 67-3, a refuse pit, was 16-1/4" b.d. and 13" below the surface. It had a maximum length of 52" on its north-south (grid) axis and a width of 36" on the opposing axis. The feature was located in the northeastern corner of unit A8. The cultural materials associated included 3 projectile points (Type 6, Undefined Stemmed of the Middle Archaic; Type 17, Undefined Stemmed of the Late Archaic; and Type 11, Undefined Side-Notched of the Late Archaic [according to Bebrich and Morgan]), 132 pieces of detritus, 11 charred fragments of bone, and one large river cobble (approximately 4" by 4" by 2"). In addition there were 209 potsherds, including 13 rim sherds: 3 Watson Plain, 1 Owasco Corded Oblique, 2 Clemsons Island Punctate (variety), 1 Radford Cordmarked Straight Rim, 1 Watson Cordmarked Impressed Lip Rim, 1 Saxton Impressed, 2 Workman Cordmarked, 1 Workman Cordmarked Lip and Rim, and 1 Shenk's Ferry Incised Multiple Banded Rim. The feature initially appeared as a large dark soil stain. Charcoal was encountered at 20-1/2" b.d. in the near center of the pit. About 12" southwest of this feature there was a mound of subsoil approximately 24-1/4" by 48" piled to a maximum of 12". It appears that this mound of earth was the backdirt excavated by the aboriginal inhabitants of the site during the construction of Feature 67-3. Notable were the recovery of 8 pieces of steatite, including one bead, one lug handle fragment from a vessel and 6 miscellaneous pieces. As is well-known, steatite (soapstone) is characteristic of the Transitional Period, and this was the only area of the excavated site where this material occurred. It is interesting to speculate as to the presence of the steatite in the backdirt of the aboriginal pit. The pit may have been a Transitional Period refuse area, or more recent Indian occupants may have dug into a Transitional deposit, or Transitional peoples may have added materials to a midden pit begun during the Archaic. A possible interpretation is that steatite may have been used by Woodland inhabitants. This feature is surprisingly complex, and if we employ the supposed developmental stages associated with the artifacts (steatite, projectile points and pottery), peoples from Early Archaic through Late Woodland utilized this small area of 36Bd36. The authors suggest that point Types 6 and 8 continue chronologically into the Woodland, a phenomenon also noted at the Seneca Farm Site (36Ve50) by Sue Ann Curtis (1968) and confirmed by more recent excavation.

Feature 67-4

Feature 67-4, a fire pit, was first observed at 16-1/2" b.d. and extended to a depth of 28-1/2" b.d. The pit had a maximum length of 32" on its north-south (grid) axis, and a width of 29-1/2" on the opposing axis. The deepest portion of the depression was in the near center and was 9" by 17" in extent. The feature was located in the All-B11 balk and extended into units All and B11. Charcoal was flecked throughout the pit soil, and traces of reddish orange (fired) zones were noted at the pit base. Contained in the soft textured soil were nine body sherds and small yellow clay particles.

Feature 67-5

Feature 67-5, a fire pit, was found 21" b.d. and 15" below the surface. The pit was small, 10" by 8" (roughly conical in shape) and only 6" deep. The center of the pit was approximately 18" from south wall and 12" from the east wall of grid A14. The feature appeared as a discoloration of the soil. The loam of the grid was mixed with a fine grained black material in the feature. Several small pieces of charcoal were found, mostly at the top of the fire pit. A total of 52 potsherds were recovered, including 3 rims: one Radford Cordmarked Straight, 1 Radford Cordmarked Folded, and 1 Shenk's Ferry Incised Multiple Banded. Several possible post molds, probably cooking or drying racks, were noted in association with this feature in the southern half of grid A14. One projectile point, Type 6, Undefined Stemmed of the Middle Archaic, was also found.

Feature 67-6

Feature 67-6, a refuse pit, appeared at 18-1/2" b.d. and extended to a depth of 40-1/4" b.d. at its center, 31" b.d. at its north (grid) end, and 27" b.d. at its south (grid) end. It was located between 8" and 29" below the preserved surface. The feature abutted the north balk approximately 24" from the northeast (grid) corner of grid A12 but did not extend into the balk. It was nearly oblong in shape, with its longest axis 6' long (southwest-northeast [grid]) and approximately 5' wide. The pit appeared as a darkened zone of soil surrounded by an area of reddish orange fired earth. The surrounding subsoil was a buff-tan hard packed sandy loam. The southern half of the grid contained eight possible post molds. The feature contained 253 potsherds, 300 flakes and detritus, 35 fragments of charred bone, 3 projectile points, 1 celt, and 4 worked stones, as well as seven scattered fireburned rocks and small fragments of tabular shale. Included among the sherds, which were scattered throughout the pit, were 17 rims: 5 Workman Cordmarked Impressed Rim, 4 Radford Cordmarked Straight Rim, 1 Radford Cordmarked Punctated Rim, 1 Watson Plain, 1 Warriors Path Cordmarked Impressed Lip and Rim, 1 Workman Cordmarked, 2 Shenk's Ferry Incised Simple Rim, and 1 Warriors Path Smooth Incised Rim. The projectile included: Type 8, Lamoka (Late Archaic); Type 15, Brewerton Ear-notched; and Type 31, (Late Middle Woodland), according to Bebrich and Morgan. While not readily observed during the 1967 field season, the configuration of Feature 67-6 shows a high degree of resemblance to the outlines of Features 67-7 and 67-8, both of which were located directly above human osteological material, Burials #1 (67-1) and #2 (67-2) respectively. All three of these features had an elongated "bathtub-shaped" outline approximately six feet in length and two and one-half feet in depth. In addition, these features contained a great deal of refuse, and the bases of the pits showed extensive firing as exhibited by reddish orange earth layers. It was under such a layer of baked soil that the burials below Features 67-7 and 67-8 were encountered. It is therefore possible to speculate that a burial may be located under Feature 67-6.

Feature 67-7

Feature 67-7, a refuse pit, was located from 16-1/4" b.d. to 24-1/4" b.d., and from 12" to 20-1/2" below the surface. Its maximum length was 40-1/2" along the east-west (grid) axis, while its maximum width was 39" along the opposing axis. It ranged within 21" to 61" of the west grid wall, and 10-1/2" to 51" of the north grid wall of B9. The feature first appeared as an amorphous shaped dark sandy loam soil zone filled with charcoal flecks, bone, detritus, and pottery fragments surrounded by a buff subsoil. The pit contained a total of 40 potsherds, 53 pieces of detritus, 1 fragment of quartzite, as well as several disintegrated bone fragments. Many of the sherds were charred, seemingly from cultural use rather than being associated with a fire pit. Four rim sherds, including 3 Warriors Path Cord-marked Punctated Rim and 1 Page Cordmarked, were recovered. This refuse pit was located directly above Burial #1 (67-1) in a situation similar to Feature 67-8 and Burial #2 (67-2). There was a strong indication that Feature 67-7 was a "bathtub-shaped" pit, but extensive cultivation and plow drag marks have obliterated the form so that the exact outline could not be determined.

Feature 67-8

Feature 67-8, an elongated refuse pit, was found in the balk along the A13 line, in a north-south (grid) orientation. It extended from the southeast corner of unit A12 into the northeast quarter of unit B12, located from 18" north of stake B13 and 42" south of the same stake with a width from 16" to 39" west of stake B12. The depth of the feature ranged from 17" b.d. to 35" b.d. The pit contained numerous artifacts, and was the same width as the burial pit beneath it, but was about a foot longer, i.e., 83" in length. Among the artifacts found in this pit were two bone tools. One of these was some type of awl or needle, the other appeared to have been used in some kind of scraping activity. The soil within the pit was distinct from the hard, fired subsoil but quite inconsistent. Some areas were reddish orange while others were darker in color and contained more flecked charcoal. Several possible post molds were found above the pit but since they ran into the darker area of the pit it was impossible to tell if they were post molds or simply tree roots. The unconsolidated fill of the pit would also permit any post being driven to penetrate to a greater depth. There were few rocks (18) within the feature, 10 of these being conglomerate and found near the pit base (on top of the burial), the remaining 8 were primarily sandstone and were scattered throughout the pit. There were many well-preserved bones as well as numerous decayed fragments. The majority of the identifiable bones appeared to be deer, perhaps only one animal being represented. Several smaller animals were represented in the osteological remains, and a pelvic fragment with socket joint which did not appear to be from a quadruped. There materials require additional study. The feature contained 464 potsherds, including the following 17 rims: 3 Watson

Plain, 2 Page Cordmarked, 3 Radford Cordmarked Straight Rim, 4 Radford Cordmarked Folded Rim, 2 Page Cordmarked Impressed Rim, 1 Saxton Incised Rim, 1 Clemsons Island Platted Straight Rim, and 1 Owasco Corded Oblique Rim. A total of 45 pieces of detritus were also recovered.

Feature 67-9

Feature 67-9, a fire pit, extended from 17" b.d. to 30" b.d. and from 13" to 26" below the surface. Its maximum length was 13" along the east-west (grid) axis, while its maximum width was 11" along its north-south (grid) axis. It was situated along the north wall of unit B10, its center approximately 4' from the B10 stakes. This feature appeared as a darkened area containing 6 fireburned rocks on the surface, and was conical in shape. The soil was of organic composition with large amounts of charcoal fragments scattered throughout. The rocks, both sandstone and conglomerate, varied in size from 9" by 2" by 4" to 2" by 2" by 1". In addition to the rocks and charcoal fragments 7 utilized flint flakes were in association. There were no ceramics within this feature.

Feature 67-10

Feature 67-10, a refuse pit, was 28" long on its east-west (grid) axis, while its maximum width was 24" along the opposing axis. The pit was encountered at 17" b.d. and extended as a bowl-shaped depression to 24" b.d. Its center was 36" from the north (grid) wall in unit B8, and nearly half of the pit was in the north balk of this square. The feature appeared as a dark stain in the buff hard packed subsoil, and contained a considerable amount of charcoal flecks and fragments. In addition there were 43 bone fragments, 1 tooth, 1 prehistoric body sherd, 3 pieces of glazed (early historic) crockery, and 22 pieces of detritus. The lower mandible of a deer was found adjacent to the pit at 28-1/2" b.d.

Feature 67-11

Feature 67-11, a shallow refuse pit, was encountered at 25-1/2" b.d., 21-1/2" below the surface. The pit was squarish, with dimensions of 12" by 11-1/2"; and was adjacent to the south balk (grid) wall and ran from 13" to 25" along the south wall from the west (grid) corner. Information on the feature is rather meager, but it seems to have been an organic soil discoloration in the buff subsoil, and was a shallow depression no more than 3" deep at the center. Three prehistoric body sherds were recovered from the pit, and field notes suggest that one glazed historic sherd may have also been associated. Notable is the fact that there was extremely little charcoal flecked throughout the pit.

Feature 67-12

Feature 67-12, a fire pit, was found initially at 19-1/2" b.d. and extended to 31-1/2" b.d. Its maximum length was 36" on an east-

west (grid) axis, while its maximum width on the north-south (grid) axis was 22". The pit was located along the C12-C13 grid line, and extended 11" north and 11" south of this line from stake C13 to a point 36" further west. This feature first appeared as a reddish orange fireburned area containing a charcoal lens on the northern periphery which graded into a bowl-shaped pit in the southern portion. Feature 67-12 contained a fine, loosely consolidated soil which was darker in color than the surrounding buff subsoil. Charcoal flecks and small fragments were scattered, throughout the feature. The soil was disturbed by intrusive roots and by earthworm activity, as well as plow drag. The pit contained 15 pieces of detritus, 1 charred bone fragment, and 3 prehistoric body sherds. The bone was encountered at 34-1/2" b.d., 8" from the east (grid) wall and 18" from the south (grid) wall. There was a small (2" diameter) extension of dark soil below the pit which continued into the east balk and was apparently a rodent burrow rather than a decayed root.

Feature 67-13

Feature 67-13, a refuse pit, extended from 16" b.d. to 24-1/2" b.d., and had a maximal length of 87" on its east-west (grid) axis, with a maximal width of 46" along the north-south (grid) axis. It extended south from the north balk 39" toward the center of unit D10, and was roughly trianguloid in surface configuration, the base being the north wall of unit D10. The pit initially appeared as a large, dark stain in the buff subsoil. The pit was shallow, with a general depth of 3" to 4", but in one small area in the southern portion tapered to a maximum depth of 8-1/2" below the level of the subsoil. This area yielded almost all of the artifactual materials, including 23 pieces of detritus, 1 hammerstone, and four bone fragments. A total of 20 body sherds and 3 rims (1 Workman Cordmarked Impressed Lip Rim and 2 Stonerstown Incised Rim) were recovered. Charcoal fragments and flecks were numerous throughout the entire feature.

Feature 67-14

Feature 67-14, a shallow basin-shaped depression, extended from 26-1/2" b.d. to 31" b.d. in unit D13. Its maximum length was 15" along an axis 10 degrees east of the north-south grid line, while its maximum width was 10" along an axis perpendicular to the 10 degree deviant line. The feature appeared to be a concentration of fragmented and burned bone in an oval-shaped depression which contained only a few fragments of charcoal. Traces of a reddish substance (perhaps iron oxide) which was crumbly in nature, and a lens of yellow clay were also associated. No lithic or ceramic artifacts were recovered in this feature.

Feature 67-15

Feature 67-15, a fire pit, extended from 17-1/2" b.d. to 31" b.d., and had a maximal length of 22" on its east-west (grid) axis, with a maximal width of 19" on the north-south (grid) axis. It was located from 8" to 30" west of stake B12, and from 4" north to 15"

south of stake B12. The feature was semi-conically shaped and was a dark, humatic stain in the buff subsoil. The contents included 7 pieces of detritus, 13 prehistoric body sherds, 6 fragments of bone, and flecks of charcoal. Feature 67-15 is not numbered in Figure 1.

Feature 67-16

Feature 67-16, a fire pit, extended from 20" b.d. to 27-1/2" b.d., and had a maximum length of 44" on its north-south (grid) axis, with a maximum width of 16" along the opposing axis. This feature was located 16" west of line 12 and 44" south of line B in unit B11. It initially appeared in the buff subsoil as a dark stain with tinges of reddish orange earth, and had scattered charcoal flecks throughout. The feature had an unusual concentration of artifactual material in comparison with adjacent areas. The pit contained 28 pieces of detritus, 3 river cobbles (approximately 5" by 2" by 2") which may have been used as pounding tools, 1 jasper chip/flake, and no ceramic artifacts. Feature 67-16 is not numbered in Figure 1.

Feature 67-17

Feature 67-17, a fire pit, extended from 25-1/2" b.d. to 37-1/2" b.d., and had a maximum length of 14" on its east-west (grid) axis and a maximum width of 10" on the opposing axis. It was located between 54" and 64" north of stake E14, and between 7" and 21" west of stake E14. The pit was conical in configuration and contained loosely packed dark soil flecked with charcoal. Within the feature was a shallow lens of reddish orange fired earth about 1-1/2" thick which contained a few fragments of charcoal. No artifacts were apparently associated.

Feature 67-18

Feature 67-18, a fire pit, extended from 21-1/2" b.d. to 27" b.d., and had a maximal length of 47" along the north-south (grid) axis and a maximal width of 36" along the east-west (grid) axis. The feature was located 36" north of stake B14 and 34" south of stake A14. It consisted of a reddish dark brown soil discoloration in the shape of a circular, shallow basin. The pit contained 14 pieces of detritus and 1 utilized stone. Student field notes suggest the association of 17 potsherds, but none are listed in the Feature Catalog.

Feature 67-19

Feature 67-19, a fire pit, was encountered at 25" b.d. and extended to 28-1/2" b.d. It had a maximum length of 14" on its north-south (grid) axis, and was 5" in width on the opposing axis. It was located from 7" to 12" west of stake C13, and from 37" to 51" south of the same stake. This shallow, basin-shaped depression of dark soil was flecked with charcoal and contained 5 prehistoric body

sherds and 4 bone fragments. The feature is not numbered in Figure 1.

Feature 67-20

Feature 67-20, a fire pit, extended from 20-1/2" b.d. to 29-1/2" b.d., and had a maximum length of 21" on its north-south (grid) axis with a maximum width of 20" on the opposing axis. The approximate center of this tetrahedrally shaped deposit of dark soil and charcoal was 17" west of stake C12 on line C. The pit contained one core and 4 flakes. The student report suggested that 6 body sherds were also in association, but these were unlisted in the Feature Catalog.

BURIALS AT THE WORKMAN SITE

Burial 67-1 (or #1)

Burial 67-1, or #1, was located from 12" to 24" south of line B and from 12" to 84" west of line 9 in unit B9. The grave extended from 24" b.d. to 36" b.d., and was oriented in a general east-west (grid) direction. It was "bathtub-shaped" in configuration and was located beneath Feature 67-7, sealed from this feature by several inches of reddish orange fired earth at the base of the feature pit. A similar situation occurred with Burial 67-2 (or #2) and Feature 67-8. Due to the extreme acidity of the soil in this area of the site the osteological material was not well-preserved, and only the crowns of the teeth and a few fragments of ribs and long bones were in evidence. It appeared that the body was buried in an extended position lying on its back, with the head toward the east. The dental remains were in situ, and it is suggested that the head lay on its left side facing south. Twenty-two teeth were recovered, and these showed only slight wear. No third molars were found so that an estimate of age is not possible, however, the teeth appear to fall within the range of a young adult, possibly in the late teens at time of death. Sex was, of course, not determinable. The burial pit soil was essentially the buff subsoil found throughout the site, but not as consolidated as the undisturbed subsoil. The only potential artifact found in association with Burial 67-1 was a river cobble (2" by 2" by 3"), showing some evidence of grinding, which was recovered in the pectoral region.

Burial 67-2 (or #2)

Burial 67-2 was encountered in excavation units A12-B12 between 39" b.d. and 48" b.d. at a depth of 33-1/2" below the original surface. The grave was oriented in a north-south (grid) direction, and was 24" wide by 73" in length, having a general "bathtub-shaped" configuration. The burial pit was situated directly beneath Feature 67-8, and sealed

from it by 4" of undisturbed deposit which sealed the corpse from the refuse pit above it. The interment was that of a female approximately 20-25 years of age at time of death, who stood 5'3" in height during life. She was buried in extended fashion, head to the south, with the arms parallel at the sides of the body, and the head tilted toward the right side facing east. The feet were in a "pigeon-toed" position with the phalanges overlapping. The skeleton was nearly complete--all carpals, metacarpals and phalanges of the right hand; most phalanges of both feet; approximately four cervical vertebrae, six thoracic vertebrae, and several ribs (all but one from the right side) were disintegrated. The right side of the body was extensively eroded due to the intrusion of a tree root system subsequent to interment. There was a large root through the cranium, as well as several smaller ones, which caused breakage and distortion of the right side of the skull. The deepness of the pre-iricular sulcus is suggestive that the individual bore at least one child during her lifetime. A sacrum of unknown origin, probably not human, was found at the feet of the skeleton at 42" b.d. The right patella was located 2" to 3" away from its normal position at 44" b.d., 19-3/4" from the west grid wall (B12) and 120" from the south grid wall (B12), and probably was so located due to root disturbance. The grave had been filled with a sandy loam flecked with charcoal, but the lower half of the pit contained soils of more clay-like consistency than the upper, probably indicating that the last excavated material from the pit was the first used to refill it after the interment had been completed. Fragments and more concentrated flecks of charcoal were found between the lower limbs and feet of the burial at 37-1/2" b.d. One projectile point base was found at 49-1/2" b.d., 22" from the west wall of the burial chamber. A total of 156 potsherds were recovered from the pit, including one Radford Cordmarked Punctated Rin. The sherds were scattered throughout and did not appear to be concentrated in a particular region.

POST MOLD PATTERNS OF THE WORKMAN SITE

The post mold patterns of the Workman Site appear to indicate at least six structures, but this certainly is not the ultimate potential of patterns to be found at the site. The difficulty in recovering the post molds has been elucidated before, but to sum up briefly it may be said that all of the post molds were very shallow. This accounts for the high number of possible or potential post molds and in certain areas such as the ten foot strip from north-south from lines 7 and 8 was near the surface which would cause a further reduction because of plow disturbance. This is especially true in the areas between units B7 and D7, and can be readily seen in Figure 1. In addition, there are at least two and probably three periods of occupation which would account for the occurrence of superimposed structures. Further complicating the picture is the fact that one

of the most common occurrences in any archaeological site in the Northeastern United States are post molds. Many of the extraneous post molds may have been the remains of posts used for wind screens or other structures by Indians who used the area as a campsite during the early historic period on their travels between Raystown and Standing Stone. Coupled with these difficulties of interpreting the settlement pattern of the dwellings of the aboriginal inhabitants was the fact that approximately 30 years ago there was a cattle pen in the area of unit D12. This fact came to light after the remains of a well-preserved post were recovered in unit D12. The shape of this recent structure could not be discerned, and Mr. Workman was unable to recall the exact dimensions. Therefore, the authors have proceeded with some caution regarding the interpretation of aboriginal structures, and the following conclusions are open to reinterpretation as a result.

There appear to be three house types at the Workman Site, as illustrated in Figure 1 by the six structure outlines. The first is a small, roughly oval or elliptical pattern approximately 12' by 16' with no apparent wide entrances or attachments (niches, etc.). Artifactual associations and comparative literature suggest that this structure dates to the Late Archaic. It is thought that this type structure is chronologically the earliest at the site. The second type of structure is more elongated and slightly larger in dimension, but in general the configuration still resembles an ovoid or elliptical form in ground plan. On at least two of these structures there is an attached semi-circular niche or storage structure and arced windbreak protected entrances. These structures are approximately 30' by 20' in exterior dimension. This pattern is associated with the late Middle Woodland occupation at the site. The third and final type of structure discerned is that of a small, rectanguloid "long house". The post mold pattern suggests dimensions of 26' by 14' with parallel sides and rounded corners. There were no apparent entrances or attached substructures.

The following is a compilation of the six well-defined structures found at the Workman Site, which are illustrated in Figure 1.

House Pattern Number One

House Pattern Number One is an oval form slightly larger than the small oval type one and appears to be intermediate between house pattern type one and type two. It was located between lines 8-10 and B-D, and is approximately 23' by 17' in dimension. The orientation of the long axis is north-south (grid). It may have had an attached storage shed, and parts of its walls are associated with house pattern number two. It is suggested that it may have been a forerunner of this number two pattern. Possibly in association are the following 6 projectile points: 2 Type 11, Undefined Side-Notched (Late Archaic); Type 36, Undefined Side-Notched (Early Late Woodland); Type 31, (Late Middle Woodland); Type 10, Undefined

LEGEND

House Patterns of the Workman Site



Pit Outline



Lens or Soil Stain Outline



Refuse



Fire



Charcoal



Rock on Subsoil



Post Mold



Possible Post Mold



House Outline

Corner-Notched (Late Archaic); and Type 28, Jack's Reef Pentagonal (Late Middle Woodland). Based on the associated ceramics and lithics, a Late Middle Woodland occupance is suggested.

House Pattern Number Two

House Pattern Number Two is of the second type and was found between lines 8-10 and B-D. It has an attached, semi-circular storage niche at the rear which is about 2' in diameter, and an entrance way consisting of a series of posts arcing from the passage into the interior, which may have served as a wind screen. The dimensions are 28' by 17' and the major axis is oriented in a north-south (grid) direction. The entrance is on the south side, a short wall, and directly opposite the storage niche. These attached structures are similar to ones noted at the Onaville site in Kinzua Dam Basin, Warren County, Pennsylvania, by Dragoo (1966: personal communication), and may also be present in Venango County at 36Ve50 (Curtis 1968: personal communication). Mayer-Oakes (1955: 100-102) has reported a similar attached storage area on dwellings at the Powell Site No. 2 (36So12) on the Youghiogheny River in Somerset County. Possible associated projectile points are 8 in number, including the same 6 recorded for House Pattern Number One plus one Type 17, Undefined Stemmed (Late Archaic) and one Type 37, Undefined Stemmed (Period: uncertain). Feature 67-7, a refuse pit, and Burial #1 (67-1) are possibly associated. In spite of the projectile point evidence, a late Middle Woodland chronology is suggested.

House Pattern Number Three

House Pattern Number Three is located between lines 9-11 and C-D, and is roughly ovoid in configuration with dimensions of 17' by 14'. The primary axis is oriented east-west (grid). Two projectile points, one Type 7, Lamoka (Late Archaic), and one Type 11, Undefined Side-Notched (Late Archaic), were associated with the structure. This dwelling is assumed to be Late Archaic, however, this form could represent a "wig-wam like" structure associated with the Owasco culture of upper New York State, as observed at the Sackett Site by Ritchie (1965: 286).

House Pattern Number Four

This structure is similar to House Pattern Three, and is located between lines 10-12 and C-D. Its dimensions are 18' by 14' with the major axis being oriented in a north-south (grid) direction. There is no evidence of an attached storage niche or well-defined entrance. There are a reasonable number of paired post molds, but these suggest replacement of posts as decay caused structural weakness and is not thought to represent the paired post mold culture trait of Adena peoples. The dwelling was probably used year round over a considerable period of time, a practice not unknown among

Alaskan Eskimoan hunters and gatherers. Six projectile points may be associated, including two Type 11, Undefined Side-Notched (Late Archaic); and one each of Type 7, Lamoka (Late Archaic); Type 35, (Late Middle Woodland); Type 16, Brewerton Ear-Notched (?) (Late Archaic), and Type 29, Undefined Corner-Notched (Late Middle Woodland). Feature 67-20, a fire pit, may also be associated. A Late Archaic date is suggested.

House Pattern Number Five

House Pattern Number Five is of the second type, and is comparable to House Pattern Number Two. It was located in an area between lines 11-14 and B-D, and has dimensions of 26' by 19' with its major axis in an east-west (magnetic) orientation. There was an attached semi-circular structure about 2-1/2' in diameter at the western end of the dwelling. The entrance way is on the north (grid) end, and therefore the storage niche and entrance are more or less at right angles to one another rather than opposed. This house pattern was the easiest to discern, and was observed readily in the field and agreed upon by all of the staff members. Features 67-12, a fire pit, and 67-20, another fire pit, may be associated, but Feature 67-8, a refuse pit, and Burial #2 (67-2) are thought to belong to House Pattern Number Six which overlaps on the east side of Number Five. Thirty-three projectile points could be associated with this structure, including: two Type 2, Bifurcated Base (Early Archaic); two Type 6, Undefined Stemmed (Middle Archaic); three Type 17, Undefined Stemmed (Late Archaic); two Type 10, Corner-Notched; two Type 13, Brewerton Side-Notched; five Type 11, Undefined Side-Notched (Late Archaic); two Type 35, (early Late Woodland); one Type 15, Brewerton Ear-Notched; one Type 14, Ear-Notched (?) (Late Archaic/Early Woodland); one Type 16, Brewerton Ear-Notched (?) (Late Archaic/Early Woodland); two Type 33, Undefined Side Notched (Early Late Woodland); one Type 18, Undefined Stemmed (Late Archaic); one Type 31, (Late Middle Woodland); one Type 23, Broad Spear (Transitional); one Type 34, Undefined Stemmed (Early Late Woodland); one Type 24, Undefined Stemmed (Transitional); one Type 29, Undefined Corner-Notched (Late Middle Woodland); one Type 10, Undefined Corner-Notched (Late Archaic); one Type 27, Jack's Reef Corner-Notched (Late Middle Woodland), and two Type 28, Jack's Reef Pentagonal (Late Middle Woodland). A late Middle Woodland chronology is suggested.

House Pattern Number Six

House Pattern Number Six extends from lines 12-15 and is confined largely between lines B-C. It appeared to be a small "long house" type oriented in an east-west (grid) direction with dimensions of 25' by 14'. No discernable attached structures or niches or defined entrance ways could be discerned. Numerous post molds within the structure may indicate internal partitioning, sleeping platforms, suspension poles, porches, shelves, etc. (Kinietz 1940: 39-42). Feature 67-12, a fire pit, may have been associated with the structure, but Feature 67-8, a refuse pit, and Burial #2 (67-2) are more probably

associated. Thirteen projectile points were found within the structure, including: one Type 6, Undefined Stemmed (Middle Archaic); two Type 17, Undefined Stemmed (Late Archaic); two Type 10, Brewerton Corner-Notched; one Type 35, Brewerton Side-Notched; one Type 14, Ear-Notched (?) (Late Archaic/Early Woodland); one Type 16, Ear-Notched (?) (Late Archaic/Early Woodland); one Type 31, (Late Middle Woodland); one Type 23, Broad Spear (Transitional); one Type 34, Undefined Stemmed (Early Late Woodland); one Type 24, Undefined Stemmed (Late Middle Woodland); and one Type 28, Jack's Reef Pentagonal (Late Middle Woodland). The structure is associated with a late period of occupation at the site, and is probably more recent than late Middle Woodland.

Therefore, if our assumptions are correct, the Workman Site settlement pattern exhibits a fairly long period of intermittent occupation from Late Archaic to early historic, with little evidence for an early Late Woodland occupance. Since pottery and artifacts have been recovered to the west in the Workman garden it can only be assumed that more material or patterns will be found there and that the village or villages, whatever the case may be, followed the terrace along the river bank. It would be interesting also to move to the north of the A line. Unfortunately, this area has been disturbed by a road and possible erosion by flooding since it is on the cut bank. Probably, therefore, the true pattern of the Workman Site will never be known.

SUMMARY AND CONCLUSIONS

From the surrounding areas there are potentially four cultures which could influence the cultural patterns of the Workman Site. These are the Owasco of upper New York State; Clemson's Island and Shenk's Ferry of central Pennsylvania; "Watson complex" of the Youghiogheny River of western Pennsylvania; and "Keyser Farm-Shepard site complex" of the Middle Potomac River. The Workman Site had elements of all of these complexes but does not resemble any one of them completely. This supports the basic supposition that the Workman Site and the Raystown Basin is marginal to any given culture area. The more or less random distribution of the various features of the Workman Site seems to correlate with the Shepard and Keyser Farm sites of the middle Potomac River. MacCord, Slattery and Schmitt have stated that: "Village features at the Shepard Site were confused. The apparent lack of orderly arrangement of pits is similar to the situation at the Keyser Farm Site near Luray, Page County, Virginia" (1967: 23). However, they point out that stockaded villages tend to have a more orderly arrangement of dwellings. The later Monongahela complex of western Pennsylvania can also be characterized by stockade villages and orderly arrangement of the features and house patterns (Mayer-Oakes: 1955). However, it should be noted that the Monongahela complex has shell tempered pottery which would place it later in time.

MacCord, Slattery and Schmitt support this when they state: "The presence of stockade on sites in the Potomac Valley seems to indicate lateness, i.e. historic or late prehistoric occupation of the site" (1957: 24). Since there is no evidence of the presence of a stockade at the Workman Site it can be assumed, as far as the feature arrangement is concerned, that the site is more closely allied with the Middle Potomac complex of the Shepard Site. There is little comparable evidence to the north and east on feature arrangement but it should be noted that presence of stockades is always considered late by most archaeologists in the area. In addition, the "typical" bell-shaped storage pits of the Northeast were not found in the Workman Site. This would indicate a lack of permanent occupation but could be explained by the relatively deep plow zone. That is, the tops of the pits were removed leaving only the conical or basin-shaped pit bases.

House patterns on the other hand do give us some interesting comparisons. The presumed Archaic house patterns, as represented by house patterns numbers three and four, show some resemblance to the general house pattern found through out this area; i.e. the Potomac, Monongahela, and Susquehanna drainage systems. However, Ritchie points out that the Sackett Site which is assigned to the Owasco culture has small circular house patterns. He maintains that these are single family "wig-wam-like" dwellings, and he further states: "Insubstantial and frequently replaced, these probably mat-or-bark-covered lodges have left there overlapping pole prints in every portion of the site examined" (1965: 286). This could account for the paired post molds found in house pattern number four, and that the practice of replacing the complete building was not employed but rather structural members were simply replaced. The partial excavation of a dwelling form at the Shepard Site would indicate a similar sized and shaped structure (MacCord, Slattery and Schmitt 1957: 4). These smaller ovoid houses are also found at the Hanna and Montague sites (Butler: 1939); the Fort Hill, Power Number Two, and Peck Number One sites (Mayer-Oakes: 1955). There is no published data for Clemson's Island Sites, however Witthoft has stated that: "Houses in this period were round, oval, or rectangular structures, made by driving post into the ground for joists, framing rafters over them, and covering the whole structure with bark-sheets or mats in shingle-fashion" (1965: 25).

The houses which resemble patterns two and five do not appear in the Middle Potomac region, the Susquehanna Basin or upper New York State. In fact, they appear to be only in the Upper Ohio complex, especially the easternmost Youghiogheny Valley. Mayer-Oakes states: "Post lined shallow storage pits of elongated-oval or pear shaped, [are] sometimes attached to the houses, peculiar to this complex" (1955: 100). These can also be found at the Hanna Site (Butler: 1939: 01). Attention is called to the fact that all of the Youghiogheny Valley sites are of a later period, i.e. they are stockaded and have a high percentage of shell tempered pottery. Only the Hanna Site has no stockade although it does have an oval or plaza type arrangement with the buildings centered around an open area. The attachment

of storage areas is found in house pattern numbers two and six but no pit was found in conjunction with them. The exact interpretation of this is speculative.

House pattern number six, rectangular in form, can be found at the Montague Site (Butler: 1939) and the Clemson's Island-Shenk's Ferry complex described above by Witthoft, but it is not noted as that in the Middle Potomac area. Again it is well to note that the Montague Site is later in time than the Hanna Site.

From the settlement pattern data it would appear that the Workman Site generally occupies a time period between the Late Middle Woodland sites or Early Late Woodland sites of the Middle Potomac (i.e. Shepard Site and Keyser Farm), the Upper Ohio (i.e. Watson Complex) [referred to as Middle Woodland by Mayer-Oakes (1955)], and Owasco sites of upper New York, and the later palisaded villages as illustrated by the Monongahela village sites of the Upper Ohio (i.e. Montague, Fort Hill, Powell Number Two and Peck Number One), the Hughs Site of the Middle Potomac (Sterns: 1940 in MacCord, Slattery and Schmitt 1957) and those of the Susquehanna Basin.

The burials of the Workman Site offer conflicting evidence of this chronology to some degree. For all the sites in the areas previously mentioned (Middle Potomac, Upper Ohio, Susquehanna drainage, and upper New York State) burials of the Early Late Woodland are flexed in oval graves with only a small percentage of extended burials occurring. The evidence seems to indicate (if one well-preserved burial, one poorly-preserved, and one potential burial can be considered evidence) that the burials of the Workman Site were extended. This would correlate to some degree with the Shenk's Ferry occupation of the Susquehanna Basin (Heisey and Witmer 1964). The burials of the earlier Clemson's Island site are bundles or flexed (Jones 1931). The lack of abundant grave goods is also fairly common to the Shenk's Ferry Period. However, Shenk's Ferry sherds (Shenk's Ferry Incised) were of very low percentage at Workman and none were found in association with the burials, but rather the earlier Clemson's Island, Owasco, and limestone tempered wares were recovered.

The mortuary customs seem to be a blending of two traditions. MacCord, Slattery and Schmitt report that burials in refuse pits are quite common at the Shepard Site (1957: 29), but the trait of burial under the hearth is reported for the Shenk's Ferry peoples (Heisey and Witmer 1964: 30). The burial complex found at the Workman Site of placing earth over the burial, firing it, and then using the rest of the pit as a refuse dump can be easily surmised. Since the earth above the burial proper is fired, one can visualize some type of funeral feast which was celebrated for the deceased member of the community over his grave; then offerings and funeral gifts (many probably of a perishable nature) were buried in the

fire place in the act of filling the grave. It appears that the date on this complex would be a little earlier than the pure Shenk's Ferry occupation but later than the Clemson's Island complex; and it also appears that this trait is restricted to the south-central and eastern portion of Pennsylvania and northern portions of Virginia and Maryland during this time period. It should be noted that Heisey and Witner report that the more simple or less ornate types of pottery from Shenk's Ferry are relatively minor in the "pure" Shenk's Ferry Sites (1964: 30). It has been stated elsewhere that it is felt that from evidence in the Raystown Basin the types of Shenk's Ferry simple and paddle-edge Impressed are actually part of Clemson's Island ceramic assemblage and should be assigned to that time period. If this is true, then certainly the practice of extended burials is earlier than Shenk's Ferry and somewhat restricted temporally and geographically.

The problem of total settlement pattern can not be answered from the excavations conducted during the 1967 season, for it is not felt that enough of the potential site was excavated to determine the exact limits of the aboriginal site. As noted before, material has been found on the terrace edges continuing toward the west (the Workman's garden and further west). The area excavated by the 1967 season field crew was eighty feet by forty feet, and in all sites examined in the literature that were of a comparable time period, these sites were at least two to three hundred feet in diameter. This would indicate that we have only excavated a small portion of site proper. There are indications that 36Bd36 is actually a large village site on the river terrace, but only more exhaustive excavation can identify the full extent of the site. It also becomes apparent that the population estimates are nearly impossible. Two houses of the Workman complex (house patterns two and five) were probably occupied by extended families (assumed to be following the pattern of the Eastern United States) but they certainly did not contain a complete lineage as in the case of the Iroquois "long house". It could, therefore, be estimated that if these two houses were occupied at the same time would represent a population of about twenty to thirty people depending upon the size of the extended family, etc. The small oval houses (patterns three and four) would, if we follow Ritchie's example, represent single families which would indicate only about fifteen people occupying the area. This would be true for Owasco or Archaic occupation. However, patterns three and four overlap so that they were probably not occupied at the same time. It is the author's opinion that until the actual perimeter of the site has been established, the conclusions reached have limited value and are speculative in nature.

APPENDIX A: CERAMICS ASSOCIATED WITH FEATURES AND BURIALS

Feature 67-1

No ceramic artifacts recovered.

Feature 67-2

Feature Catalog: No data.

Field Catalog:

- 0408 - Unmodified clay
- 0499 8 Limestone temper smooth bodies
- 14 Limestone temper corded bodies
- 5 Flint temper corded bodies
- 3 Flint temper cord on cord bodies
- 3 Quartz temper smooth bodies
- 0509 1 Flint temper corded body
- 1 Quartz temper smooth body
- 0564 - Unmodified clay
- 0593 1 Limestone temper corded body
- 1 Flint temper corded
- 2 Quartz corded bodies
- 1 Quartz temper smooth body
- 2092 1 Radford Cordmarked Straight rim
- 1 Clemsons Island Punctate variety, Clemsons Island
- Punctate rim
- 2 Limestone temper smooth bodies
- 11 Limestone temper corded bodies
- 1 Flint temper cord on cord body

Feature 67-3

Feature Catalog:

Field Catalog:

- 2142 2 Watson Plain rims
- 1 Owasco Corded Oblique rim
- 1 Clemsons Island Punctate variety, Clemsons
- Island Punctate rim
- 15 Limestone temper smooth bodies
- 29 Limestone temper corded bodies
- 33 Flint temper corded bodies
- 31 Quartz temper corded bodies
- 5 Quartz temper smooth bodies
- 2 Quartz temper fabric impressed bodies
- 1456 1 Watson Plain rim
- 1 Clemsons Island Punctate variety, Clemsons
- Island Punctate rim
- 1 Limestone temper smooth body

- 4 Limestone temper corded bodies
- 4 Flint temper corded bodies
- 1 Quartz temper corded body
- 1 Quartz temper smooth body
- 2289 1 Radford Cordmarked Straight rim
- 1 Watson Cordmarked Impressed Lip rim
- 1 Saxton Impressed rim
- 2 Workman Cordmarked rims
- 1 Workman Cordmarked Impressed Lip and Rim rim
- 1 Shenk's Ferry Incised Multiple Banded rim
- 6 Limestone temper smooth bodies
- 16 Limestone temper corded bodies
- 19 Flint temper corded bodies
- 1 Flint temper cord on cord body
- 2289 15 Quartz temper corded bodies
- 2 Quartz temper smooth bodies
- 1 Quartz temper fabric impressed body
- 0461 3 Limestone temper smooth bodies
- 3 Flint temper corded bodies
- 1 Quartz temper corded body
- 2159 1 Limestone temper smooth body
- 2 Limestone temper corded bodies
- 2437 - Unmodified limestone (?) fragment

Feature 67-4

Feature Catalog: No data.

Field Catalog:

- 0708 No listing.
- 1997 3 Limestone temper smooth bodies
- 6 Limestone temper corded bodies

Feature 67-5

Feature Catalog: No data.

Field Catalog: No data from Feature BD 21-27 (Sherds found above Feature BD 18-21).

- 1723 1 Radford Cordmarked Straight rim
- 1 Radford Cordmarked Folded rim
- 1 Shenk's Ferry Incised Multiple Banded rim
- 8 Limestone temper smooth bodies
- 1 Limestone temper cord on cord body
- 10 Limestone temper corded bodies
- 11 Flint temper corded bodies
- 1 Flint temper cord on cord body
- 6 Quartz temper corded bodies
- 2 Quartz temper smooth bodies
- 2021 3 Limestone temper smooth bodies
- 3 Limestone temper corded bodies
- 3 Flint temper corded bodies
- 1 Flint temper smooth body

Feature 67-6

Feature Catalog:

- 1554 1 Miniature vessel (pot)
- 1 Radford Cordmarked Punctated rim
- 3 Radford Cordmarked Straight rim
- 1 Watson Plain rim
- 1 Warriors Path Cordmarked Impressed Lip and Rim rim
- 1 Workman Cordmarked rim
- 4 Workman Cordmarked Impressed rim
- 1 Shenk's Ferry Incised Simple rim
- 1 Sheep Rock Cordmarked body
- 28 Limestone temper smooth bodies
- 31 Limestone temper corded bodies
- 1 Limestone temper cord on cord body
- 74 Flint temper corded bodies
- 5 Flint temper cord on cord bodies
- 48 Quartz temper corded bodies
- 6 Quartz temper smooth bodies
- 1793 2 Radford Cordmarked Straight rim
- 1793 1 Warriors Path Smooth Incised rim
- 1 Workman Cordmarked Impressed rim
- 1 Shenk's Ferry Incised Multiple Banded rim
- 3 Limestone temper smooth bodies
- 9 Limestone temper corded bodies
- 14 Flint temper corded bodies
- 1 Flint temper cord on cord body
- 11 Quartz temper corded bodies
- 3 Quartz temper smooth bodies

Field Catalog: No data.

Feature 67-7

Feature Catalog: No data.

Field Catalog:

- 0880 1 Page Cordmarked rim
- 2 Warriors Path Cordmarked Punctate rim
- 11 Limestone temper smooth bodies
- 12 Limestone temper corded bodies
- 6 Flint temper corded bodies
- 3 Flint temper cord on cord bodies
- 2 Quartz temper corded bodies
- 1189 1 Warriors Path Cordmarked Punctate rim
- 1 Flint temper corded body
- 1 Quartz temper corded body

Feature 67-8

Feature Catalog:

- 2368 115 Limestone temper smooth bodies
- 87 Limestone temper corded bodies
- 4 Flint temper cord on cord bodies

- 1619 1 Watson Plain rim
- 2 Page Cordmarked rims
- 1 Sheep Rock cordmarked body
- 15 Limestone temper smooth bodies
- 10 Limestone temper corded bodies
- 22 Flint temper corded bodies
- 1472 1 Radford Cordmarked Straight rim
- 3 Radford Cordmarked Folded rims
- 1 Watson Plain rim
- 2 Page Cordmarked Impressed rims
- 2 Saxton Incised rims
- 1 Clemsons Island Platted Straight rim
- 55 Limestone temper smooth bodies
- 52 Limestone temper corded bodies
- 5 Flint temper corded bodies
- 2 Limestone temper cord on cord bodies
- 1 Quartz temper corded body
- 6 Quartz temper smooth bodies
- 1523 1 Radford Cordmarked Folded rim
- 1 Watson Plain rim
- 1 Saxton Incised rim
- 1 Owasco Corded Oblique rim
- 33 Limestone temper smooth bodies
- 18 Limestone temper corded bodies
- 13 Flint temper corded bodies
- 5 Quartz temper corded bodies
- 3 Quartz temper smooth bodies

Feature 67-9

No ceramic artifacts recovered.

Feature 67-10

Feature Catalog:

- 2318 1 Flint temper cord on cord body

Field Catalog: Same as above.

Feature 67-11

Feature Catalog:

- 2373 2 Limestone temper corded bodies
- 1 Flint temper corded body

Field Catalog: Same as above.

Feature 67-12

Feature Catalog:

- 1879 1 Limestone temper smooth body
- 1 Limestone temper corded body

2467 1 Limestone temper smooth body

Field Catalog: No data.

Feature 67-13

Feature Catalog:

2308 1 Workman Cordmarked Impressed Lip rim
 2 Stonerstown Incised rims
 7 Limestone temper smooth bodies
 5 Limestone temper corded bodies
 5 Flint temper corded bodies
 1 Quartz temper corded body
 1 Quartz temper smooth body
 1 Quartz temper fabric impressed body

Field Catalog: Same as above.

Feature 67-14

No ceramic artifacts recovered.

Feature 67-15

Feature Catalog:

2452 7 Limestone temper smooth bodies
 2 Limestone temper corded bodies

Field Catalog:

2825 1 Limestone temper smooth body
 2874 3 Limestone temper smooth bodies

Feature 67-16

No ceramic artifacts recovered.

Feature 67-17

Feature Catalog: No data.

Field Catalog: No data.

Feature 67-18

Feature Catalog:

2441 No listing.

Feature 67-19

Feature Catalog:

2464 1 Limestone temper smooth body
 1 Limestone temper corded body

- 2 Flint temper corded bodies
- 1 Quartz temper corded body

Feature 67-20

Feature Catalog: No data.

Field Catalog: No data.

Burial #1

No ceramic artifacts recovered.

Burial #2

Feature Catalog:

- 2186 30 Limestone temper smooth bodies
- 15 Limestone temper corded bodies
- 2 Quartz temper smooth bodies
- 2268 No listing.
- 2272 9 Limestone temper smooth bodies
- 3 Limestone temper corded bodies
- 24 Flint temper corded bodies
- 1 Quartz temper smooth body
- 1 Quartz temper fabric impressed body
- 1818 19 Limestone temper smooth bodies
- 1 Limestone temper cord on cord body
- 12 Limestone temper corded bodies
- 23 Flint temper corded bodies
- 2 Flint temper cord on cord bodies
- 4 Quartz temper corded bodies
- 1 Quartz temper smooth body
- 1824 No listing.
- 1674 1 Radford Cordmarked Punctated rim
- 2 Limestone temper corded bodies
- 1 Flint temper corded body
- 1679 No listing.

APPENDIX B: PROJECTILE POINT IDENTIFICATIONS AND CULTURAL AFFILIATIONS

Workman Site Type #	Sheep Rock Type #	Period	Cultural Affinity
1	1	Early Archaic	Kirk Corner-Notched
2	7	Early Archaic	Le Croy
3		Early Archaic	Undefined
4		Early Archaic	Kanawha Stemmed
5		Early Archaic	Stanley Stemmed
6	2	Middle Archaic	Raystown Stemmed
7		Late Archaic	Lamoka
8		Late Archaic	Lamoka
9		Late Archaic	Lamoka
10		Late Archaic	Brewerton Corner-Notched
11	5/8	Late Archaic	Brewerton Side/Corner- Notched (small)
12	9/10	Late Archaic	Brewerton Side/Eared- Notched (small)
13		Late Archaic	Brewerton Side-Notched
14	13	Late Archaic	Brewerton Side-Notched
15		Late Archaic	Brewerton Eared-Notched
16		Late Archaic	Brewerton Eared-Notched
17	22	Late Archaic	Squibnocket (Wading River)
18		Late Archaic	Squibnocket Stemmed
19	22	Late Archaic	Squibnocket (Wading River)
20		Terminal Archaic	Savannah River
21	28	Transitional	Susquehanna Broadsphear
22	25	Transitional	Susquehanna Broadsphear
23		Transitional	Perkiomen Broadsphear
24		Transitional	Orient Fishtail
25	26	Early Woodland	Meadowood
26		Early Woodland	Adena
27	46	late MW/early LW	Jack's Reef Corner-Notched
28		late MW/early LW	Jack's Reef Pentagonal
29		late MW/early LW	Jack's Reef Corner-Notched
30		Early Woodland	Meadowood
31	45	late MW	Fox Creek
32	45	late MW	Fox Creek
33		early LW	Chesser-Notched
34		early LW	Chesser-Notched
35		M/L Woodland	Chesser-Notched?
36	29	Early Woodland	Undefined (Juniata stemmed?)
37		Transitional	Perkiomen Broadsphear
38		Middle Woodland	Undefined
39		Early Woodland	Adena
40		Late Woodland	Undefined
41	37	early LW	Owasco/Clemson's Island
42	38	late Late Woodland	Shenk's Ferry
43	39	Protohistoric	Mixed (Susquehannock, Hughs Site Complex)
44		Late Woodland	Undefined

HISTORIC PERIOD ARTIFACTS
OF
THE WORKMAN SITE

by

Carla Lindeman Tiling

ABSTRACT

The Workman Site (36Bd36) is located in Liberty Township, Bedford County, Pennsylvania, along the Raystown River near Saxton. The artifacts indicate that the site was occupied over a period of 50 to 75 years, from near the end of the 18th century to the late 1800's. The dwelling appears to have been a log structure.

TABLE OF CONTENTS

	<u>Page</u>
ABSTRACT	177
TABLE OF CONTENTS	178
LIST OF TABLES	179
I. INTRODUCTION	181
II. CONSTRUCTION MATERIALS	181
III. PERSONAL ARTIFACTS	183
IV. HOUSEHOLD GOODS AND IMPLEMENTS	185
V. FAUNAL REMAINS	190
VI. CONCLUSION AND DISCUSSION	191

LIST OF TABLES

	<u>Page</u>
Table 1. Nail Classification	182
Table 2. Button Classification	185

INTRODUCTION

The Workman Site (36Bd36) is located in Liberty Township, Bedford County, Pennsylvania; along the Raystown River near Saxton, Pennsylvania. The site locality has been occupied by four different families since 1887. Robert H. Workman became the owner in 1935. However, little else is known about the earlier history of the site locality. The excavated areas lie about 100 yards on either side of the present farm house.

The site had been last cultivated some ten to fifteen years ago, disturbing the top portions of the site and leaving little stratigraphic evidence to aid in the interpretation and dating of its historic occupation. The artifacts were not stratified, yet they do indicate a period of 50 to 75 years in which occupation did take place. No structural evidence, in the form of footings, walls or postmolds, was uncovered during excavation. There was, however, some artifactual evidence indicating that a building was present, probably a log structure.

CONSTRUCTION MATERIALS

Nails (335)*

Nails were the most common construction materials recovered during excavations. They indicate that at least part of the building was erected with nails though there is little other evidence for a plank structure. Of the 335 nails recovered, 295 were broken and nine were modern steel wire nails. Less than eleven percent of the nails were complete. Most of the complete nails fell into the 8d to 10d size range. Even the broken fragments tended to indicate the larger sized nails.

The common-cut nails were commonly used for sheathing, siding, and framing. The nails were square or rectangular in cross section. The heads on the common cut nails were machine made indicating a post 1830 manufacturing date. Based on the complete nails and broken nails with heads, 41 per cent were machine-made nails.

Seven percent of the nails could be classified as hammered, or hand-wrought, based on the eight whole nails and 21 broken nails with

*The number in parentheses following the listed artifact indicates the quantity found.

hammered heads. The nails taper on all four sides toward a point showing uneven thickness throughout the length of the shank. These nails were used for joining wood before the common-cut nails replaced them, and fall into the period from 1790 to 1850.

Nine nails were modern machine made steel wire nails dating to the post 1870 period. They were not heavily corroded, indicating recent deposition in the soil.

<u>Quantity</u>	<u>Size</u>	<u>Type</u>
2	3d	Common Cut
2	4d	Common Cut
3	6d	Common Cut
1	6d	Steel Wire
9	8d	Common Cut
2	8d	Hand Wrought
4	8d	Steel Wire
8	10d	Common Cut
3	10d	Hand Wrought
2	10d	Steel Wire
2	12d	Common Cut
1	12d	Steel Wire
1	20d	Steel Wire
21	Heads	Hammered
112	Heads	Machine Made
162	Broken	Unclassified

Table 1. NAIL CLASSIFICATION

Hinges

Hinge. (1). One fragment of a door hinge was recovered. The hinge was triangular in shape.

Hinge. (4). These fragments represented one modern triangular hinge with drill made holds.

Window Glass (318).

Glass in the 1800's was produced by the Crown or cylinder glass manufacturing methods. The pane glass from this site does not show the variations in thickness found in glass made by the Crown method. The fragments, however, are too small to conclusively identify them as being made by the cylinder method although this is probably the method used. The glass varies in thickness from 1mm. to 1.6mm.

Fused Glass (3). Three fragments of fused pane glass were recovered at the site.

Fired Clay (31).

The exact use of these fired clay lumps is unknown. Some of them appear to be fragments of bricks.

Lime Plaster (26).

The plaster was probably used on the interior walls of the building. Some of it shows traces of red coloring on the surface.

PERSONAL ARTIFACTS

Buttons (13).

The buttons fell into the period from the late 18th to the late 19th century.

Plain metal (6). Two of the metal buttons were brass and one was of white metal which had brass wire eyes fastened during the casting of the buttons. On the back are the concentric rings of the cutting tool. The back of the buttons are flat. The examples of this type measure 12, 13, and 18 mm. Using Olsen's Type D category they fall into the 1760 to 1785 time span.

The site also yielded an example of Olsen's Type G button dating from 1785 to 1800. This button is a flat disc of brass to which the eye has been fastened to the disc with a drop of solder leaving no foot at the attachment. The button measured 10 mm. across.

Two brass buttons had lettering on the back. One of these was a flat disc with the wire eye soldered to the back. On the back were the words "Extra Strong Cut." It is very similar to South's Type 18 dating from 1800 to 1865. This button was 14 mm. across. The other button had a concave face with the eye soldered to the back. The lettering was not entirely clear. The last two words were "Orange Warranted." It is like South's Type 18 except for the concave face. It measures 17 mm. across.

Brass (1). One brass button had depressed edges to the back. The eye was attached with solder leaving no foot at the point of attachment. The front appears to have fabric impressions on it. It is similar to South's Type 16 dating from 1800 to 1865, but without the crimped face. The button measures 20 mm. across.

Bone (1). There was one fragment of a five hole bone button. The central hole is slightly larger than the other holes. The rim is thicker than the central depressed area. The button measures 16 mm. across. It is similar to Olsen's Type J (1750-1830) and South's Type 19 (1800-1865).

Shell (1). One shell button measuring 9 mm. across was also recovered. It appears to be machine made with four holes in the central raised area. Machine made shell buttons were common after the 1850's in the United States.

Glass (1). This button falls into the black glass category and can be called "jet" because of its pure black color. The button has a concave back and concave front. It has two holes and measures 14 mm. across. The time period for this type of button is the second half of the nineteenth century.

Copper (1). The back of the button is missing. The remaining portion measures 17 mm. across. It falls into the category of transportation buttons with the etched design of a locomotive on the face of the button cap. This button would fall into the late 1800's.

Steel (1). One fragment of a four-hole steel button was recovered during excavation. The face of the button was concave. The button was made by joining two pieces of steel forming a thickened rolled edge. It measures approximately 18 mm. across. The button is similar to Olsen's Type L dating to the post 1870 period.

Brass cap (1). The brass convex cap of one button was recovered. The cap measured 16 mm. across. It could not be dated.

Clay Pipes (5).

There are three fragments of kaolin tobacco pipestems. Two of the stems have a bore diameter of 5/64 inch and the third one has a diameter of 6/64 inch. The stem with the largest bore has fingerprint impressions on the sides of the stem. It is cruder in manufacture than the other two stems. None of the fragments have any maker's initials.

There are two fragments of fluted kaolin pipebowls representing two different pipes. The one has evenly spaced flutes with raised dots or stars above the fluting. It appears to be entirely mold made. The other bowl fragment appears to have irregularly spaced carved fluting on a molded bowl.

Eye (1).

One brass eye from a hook and eye was recovered during the excavation. This type of fastener was in use after 1650. The eye measured 8.5 X 9. mm.

Pin (1).

This was a copper leaf pin with a wire clasp measuring 20 by 25 mm.

Ornamental Clasp (1).

The clasp was of copper and looked similar to a belt buckle. It measured 16 by 28 mm.

HOUSEHOLD GOODS AND IMPLEMENTS

Glass

Lid liner (5). These fragments represent a Ball Mason Preserving jar lid liner from a zinc cap. The liner was of milk glass. The Mason jar was first patented in 1858. The liner has a diameter of 64 mm.

Lid liner (3). These fragments represent a lid liner for a Zinc cap of a preserving jar. The lettering on the glass is "BO".

Bottle neck (1). One small aqua hand blown bottle is represented by this fragment. The bottle has a narrow square collar folded out from the neck. The neck has a diameter of 18 mm.

Miscellaneous glass (114). Seventeen bottles are represented by these fragments. Eight of the bottles appear to be mold made. The glass varied in thickness from 1 mm. to 4 mm.

Color	Number	Method of MFG.	Thickness
Amber	5	Mold	3 mm
Amber	6	Mold	3 mm
Yellow	1	Mold	3
Green	4	Hand blown	3
Olive Green	1	Hand blown	1
Lt. Olive Green	2	Hand blown	4
Dark Olive Green	3	Hand blown	3
Blue	2	Mold	3
Clear	72	Mold	5
Clear	1	Mold	3
Clear	3	Mold	4
Clear	1	Hand blown	7
Clear	6	Hand blown	4

Color	Number	Method of MFG.	Thickness
Clear	3	Hand blown	3
Aqua	1	Hand	1
Aqua	2	Hand blown	1
Aqua	1	Hand blown	2

Table 2. BOTTLE CLASSIFICATION

Drinking glass (1). One clear glass fragment represents a glass with a slightly thickened rim. The thickness of the glass is 9 mm.

Dish (1). This fragment represents part of a mold-made dish. It is light yellow in color and has a triangular and rectangular pressed design on it. It is 5.4 mm. thick.

Bottle glass (1). This amber bottle glass fragment has a mold-impressed cross hatched design on it. The letters "RE" are above the impressed design. The glass is 3mm. thick and shows no patination.

Modern bottle (25). These fragments represent one modern mold-made clear glass bottle. The base was 32mm. square with rounded corners. On the base was the letter "F" enclosed by a hexagonal raised design. Part of the contents were still present in the bottle, but it has not been analyzed.

Glass cap (1). This was a clear glass, mold made bottle top. On the top were the words "EAGLE, USA" with the numbers 26 - 1 on the side. The diameter of the cap was 29 mm.

Miscellaneous modern glass (25). These represent the remains of ten glass containers. None of them have any patination indicating recent deposition in the soil. Represented are four screw neck jars, a clear glass patterned bowl, two round aqua bottles, a dish with an impressed design and two clear round bottles with the lettering:

"W FORE " and " SAL
of The OTTLE.

Ceramics (498).

The ceramics appear to be mostly of English manufacture. Most of the pottery is plain white underglaze earthenware which is undatable. Much of the decorated pottery falls into the first half of the nineteenth century.

Potter's marks (2). "AMS" This mark is fragmentary and is probably the end of an impressed mark used by the Adams of the Staffordshire Potteries at Tunstall, England. The mark is found on general earthenwares dating from 1800 to 1865. This fragment is from a plain white underglaze

plate.

The other potter's mark is unidentified. It is a red transfer underglaze mark with a deer's head above the letters "...LED...". It is on the base of a red transfer underglaze historical plate.

The largest group of ceramics with designs is that called pearlware which has shell edged rims in blue or green. This is represented by a blue glaze around the rim of the ceramic vessel trailing into the plate creating a feathery design. Most of the plates have a scalloped edge. Some of these edge designs may have been used with the blue and white transfer underglaze pottery fragments which were the most common found at the site as were the blue edged plate fragments. This was a common border design used prior to 1835. Examples at the site included forty-one blue shell edged rim fragments and five green shell edged rim fragments.

Forty-five blue and white transfer underglaze fragments were found, representing six designs, most of which were on the interior of the plates. They included floral designs, line designs, a diamond and cross hatched design similar to blue willow ceramic designs, and twenty-one unclassifiable fragmentary designs. The glaze appears blue in the crevices of the footings of the bases representing the blue and white design.

Twenty-one fragmentary basal plate fragments were found, which had the glaze appearing blue in the crevices of the footing. These fragments could not be linked with any patterned pearlware ceramics.

Eight miscellaneous blue and white transfer underglaze rims which did not have the shell edged design were also found. Most of them had a blue band around the rim edge varying from 1/4 inch to over 3/4 inch. One rim had a raised chain design and two were a mottled blue design.

There were 33 fragments of creamware recovered from the site. The creamware was light yellow in color. On two of the seven bases, the glaze appeared green in the crevices of the footing. There were four rim fragments, one of which was from a cup. The rest of the fragments were miscellaneous body fragments.

The most numerous ceramics were the white earthenwares. These replaced the pearlware ceramics after 1820 and are generally unidentifiable unless a potter's mark is present. There were 248 fragments of this type of earthenware. Eleven of the fragments were bases and twenty-five were rims.

Three fragments from a porcelain dish were found. There was a red overglaze line along the scalloped rim edge. About 1/4 inch from the rim line was another red painted design with dots along it. The line was almost worn away.

There were two fragments from a white earthenware plate which had

a violet transfer underglaze design. This fragment from the base of the plate was part of an outdoor scene made by using a stippled pattern.

One cup was represented by four fragments of a red transfer underglaze floral design.

Twenty-one fragments represented a blue, black, red and green floral design on a pearlware plate and cup. There was a black band around the rim of the cup and plate. The glaze appeared blue in the crevice of the footing of the plate.

Five rim fragments of green transfer underglaze were also present. Two were from a scalloped edged plate and the other three were from a small dish.

Six fragments were from a red, blue and green speckled underglaze bowl. Two fragments were from a handpainted underglaze creamware dish. One white earthenware plate base had a red transfer underglaze design of trees with a mountain in the background.

There were four fragments of ceramics which were dark yellow on the interior and a blue and white transfer underglaze on the exterior surface.

The rest of the ceramics are too small to classify. They include ten rim fragments one of which is from a saucer. Six of the rims have narrow bands around the rims. In addition, there were two basal fragments, and thirty-four body fragments, most of which had fragmentary floral designs in various underglaze colors of blue, red, green, lavender, black and yellow.

Finally, there was one white ceramic lamp base. The diameter of the base was 7 mm.

Stoneware (378). A large group of utilitarian pottery was found, in the form of large jars and crocks. Most of the stoneware had a reddish brown to brown glaze on one or both surfaces. The manufacturers of this utilitarian ware is unknown but was probably a local ware.

There are two fragments representing two salt glazed stoneware jars. The exterior surface was gray with the interior of a very dark brown or black glaze. The walls were 5mm and 8mm thick.

Also found were 42 fragments of nine stoneware jars which had a mottled brown glaze on the interior and were unslipped on the exterior surface. There were narrow grooves etched into the exterior surfaces of the jars. The thickness of the jars varied from 5mm to 9mm.

Twenty-nine fragments represented eight stoneware jars which were unslipped on the exterior and had a solid brown interior glaze. These varied in thickness from 4 to 10mm.

There were four stoneware jars represented by twenty pottery fragments. These fragments had a dark mottled yellow interior glaze and were unslipped on the exterior surface. They varied in thickness from 4 to 8mm.

Four stoneware vessels with an interior red glaze were represented by ten pottery fragments. The exterior of the vessels were unslipped. The walls varied in thickness from 5 to 7mm.

Twelve rim fragments represented ten pottery vessels. The diameter of the rims varied from 20mm to 34mm. Five were unslipped on the exterior surface while the other seven had traces of a dark brown glaze on them.

There were four fragments from vessel bases. Three of the basal fragments had traces of a dark mottled yellow glaze on the interior and were unslipped on the exterior. The vessels tended to flare out from the base. The fourth vessel had a dark brown mottled interior glaze. On the unslipped base was the number "10" indicating a ten gallon storage jar. Numbers were commonly found on vessels during the first half of the nineteenth century.

Four of the stoneware fragments had traces of a design on them. Two of them had a line design which had broken away from the dark yellow glaze on the body. The other two fragments had a black and red banded design. They were 6mm thick.

Two fragments had an olive green interior glaze and were unslipped on the exterior surface. One of the fragments had carved bands on the exterior. They were 6mm thick.

There were 235 miscellaneous fragments which had only the interior or exterior surface present. There were 127 fragments with traces of a glazed surface. The rest were unslipped fragments.

There was a small group of fragments with a glaze on both surfaces. Eleven vessels were represented by the fourteen fragments. Five of the vessels had both dark brown glazed surfaces. One fragment appeared to be part of a spout from a stoneware pitcher. There were two vessels with brown salt glazed exterior surfaces, but the interior surfaces were different. One was a cream colored surface and the other was a dark brown. Two fragments had orange interiors, but one had a dark brown exterior and the other had a red exterior. One fragment was from a shallow bowl and had both surfaces of a dark yellow-brown. The thicknesses varied from 4 to 12mm.

Four fragments of a thin yellow glazed stoneware were also found. The thickness was 4mm.

Metal (45).

Most of the metal was badly corroded due to the wet condition of the soil. Even some of the modern metal was badly deteriorated.

Coat hook (1) The coat hook measured 10cm. long and had one hole for attachment to the wall.

Knife (5). These heavily corroded fragments represented three knife blades, each measuring about 13 by 37mm.

Knife (1). This fragment was part of a jack knife which protects the blade. It measured 89 by 23 mm.

Staples (3). These staples are probably modern. The staples are U shaped with the prongs tapering to a point. The staples are 33 mm long.

Chain links (6). The individual links are hand wrought iron, rectangular in shape and measure 6mm thick, 17 mm wide and 38 mm. long

Chain links (6). The links in this chain vary in size and tend to be oval shaped. The end link is spread apart in a hook like fashion. Three of the links measure 25 mm wide, 60 mm long and 7 mm thick. The other three measured 22 mm wide, 43 mm long and 5 mm thick.

Horseshoe nails (6). These measured 57 mm long.

Horseshoe (1). This fragment represents about one-half of the horseshoe. This type belongs to the post 1862 period. It measured 139 by 28 mm.

Graphite marker (1). The marker is nearly round and shows the cutting marks where the marker was sharpened. It measured 24 mm long with a diameter of 4 mm.

Metal (4). These were unidentifiable metal fragments.

Modern metal (9). These included barbed wire, a 33 mm machine made bolt, four fragmentary metal bars, one of which had a machine drilled hole, a sickle guard and a metal ring. These would be less than thirty years old.

Bullet (1). There was one 32 cal. lead bullet.

Lead (1). There was one fragment of lead in the shape of a semi-circle of unknown use.

FAUNAL REMAINS

The faunal remains have not been analyzed. Most of them appear to be cow bones. Some of them show saw marks indicating that they were butchered.

CONCLUSION AND DISCUSSION

From the artifacts discussed it is concluded that there was historic occupation on the site beginning near the end of the 18th or the beginning of the 19th century. Occupation continued until the late 19th century when the settlers probably moved to a new location. There is an artifact gap from the late 19th century to the mid 20th century indicating abandonment of the site.

The earliest occupation was probably in a log structure rather than a frame structure, since frame structures require large quantities of nails. It is probable that the early nails were used in the frames of the windows and doors. The large quantity of machine-made nails could indicate remodeling or an addition to the old structure, but the quantity is still too small to indicate a plank structure.

The time of earliest occupation is based on the buttons, nails and ceramics. The nails indicate possible beginning use in the late 18th century on the basis of the hand wrought nails. The rest of the nails indicate a post 1830 date of manufacture. The household and personal artifacts indicate an earlier occupation date. The manufacturing date of the buttons went back to 1750, but their use could easily continue into the 19th century. The ceramics of English manufacture generally indicated a late 18th or early 19th century manufacturing date. A small portion of the ceramics fall into the middle to late 19th century.

The most recent date of occupation was determined by negative evidence. Virtually no artifacts were found which dated later than 1870, excluding the modern artifacts. There is one fragmentary steel button which was post 1870 in manufacturing date, but the rest of the artifacts were made before 1865. It is possible that occupation at this site continued until 1887, when the present house site is believed to have been constructed. This would fit with the artifact material from the excavated area.

There were, however, no traces of structural remains noted during the exvavations. Some small samples of plaster and fired clay were found which may have been used in the building. The lack of structural evidence is probably due to the cultivation of the land until 10 to 15 years ago. There was no indication found of a cellar in the excavated area indicating that the structure was built on surface level. Evidence for this type of structure could be more easily destroyed by ploughing.

A PRELIMINARY REPORT ON THE LITHIC
ARTIFACTS FROM THE WORKMAN SITE (36Bd36)
BEDFORD COUNTY, PENNSYLVANIA

by

Carl A. Bebrich and Thomas Morgan III

ABSTRACT

This chapter presents a detailed description of the projectile point inventory of the Workman Site. Age and cultural affinity of diagnostic forms is discussed. Appendices containing a comprehensive coded attribute analysis of the stemmed-notched points is provided. A summary tabulation of other lithic forms is presented. Analysis of the age and cultural affinities of the various projectile point forms indicates intermittent utilization of the site by aboriginal populations over a 9000 year period. Associations with at least 18 distinctive complexes are recognized: Kirk, St. Albans, Kanawha, Stanly, Lamoka, Brewerton, Squibnocket, Savannah River, Susquehanna, Perkiomen, Orient Fishtail, Meadowood, Adena, Jack's Reef, Fox Creek (Stuebenville), Owasco, Shenk's Ferry, and Susquehannock.

ACKNOWLEDGEMENTS

The authors extend their appreciation to State Archaeologist, Barry C. Kent and State Field Archaeologist, Ira F. Smith III of the William Penn Memorial Museum for their helpful consultation and advice. Our thanks are also extended to Professor Paul Heberling of Juniata College, Pennsylvania, for loan of the materials recovered under his direction during excavations conducted subsequent to the Penn State Field School operation at the Workman Site.

TABLE OF CONTENTS

	<u>Page</u>
ABSTRACT	195
ACKNOWLEDGEMENTS	196
TABLE OF CONTENTS	197
LIST OF ILLUSTRATIONS	198
LIST OF TABLES	199
I. INTRODUCTION	201
II. FORMAL DESCRIPTION OF THE PROJECTILE POINTS	202
III. DISCUSSION	246
APPENDIX A. Point Attribute List	252
APPENDIX B. Computer Listing of Point Attribute Data	269

LIST OF ILLUSTRATIONS

		<u>Page</u>
Plate 1.	Workman Projectile Points	247
Plate 2.	Workman Projectile Points	248
Figure 1.	Frequency Distribution of Points by Type and Period	249
Figure 2.	Frequency Distribution of Points by Period	250
Appendix A		
Figure 1a.	Corner-Notched Point	255
Figure 1b.	Side-Notched Point	255
Figure 2.	Metric Attributes	255
Figure 3.	Orientation and Articulation of Sub- Elements of the Blade, Haft and Tang . . .	257

LIST OF TABLES

	<u>Page</u>
Table 1. Summary of Projectile Point Typology and Cultural Affiliations	251

INTRODUCTION

During the 1966 and 1967 excavations at the Workman Site, a large amount of heterogeneous lithic materials was recovered. Preliminary analysis of these artifacts has focused attention almost exclusively on the projectile points in order to delineate the site's preceramic culture history. This approach was prompted by the consideration of stratigraphy and time. The Workman Site lacks definable vertical cultural stratigraphy and only a time-consuming critical analysis of horizontal distribution could provide a definitive statement regarding both associations and horizontal patterning of the artifacts. Outside commitments severely restricting available study time and a rigidly imposed deadline combined to preclude anything more than a cursory treatment of the collection as a whole. As a result, only a tabular summary of the nonprojectile point artifacts can be presented at this time.

Because little reported archeological work has been conducted in Central Pennsylvania and because only a small portion of the point collection could be tied to the Sheep Rock Shelter typology (Bebrich 1967: 571-606), it was decided to devote almost exclusive attention to the detailed description of the Workman Site points.

During the excavations 224 projectile points were recovered. Of these, 179 are stemmed or notched and 55 are triangular. As a whole, the point collection exhibits a considerable morphological variability suggesting a complex culture history. The collection was classified into 44 types according to the procedures (excluding #4) described by Bebrich for the Sheep Rock Shelter projectile points (Ibid: 567-569). A "type" in this context designates a distinct definable form and violates the condition demanded by some that a type must constitute two or more specimens and the more stringent condition that a type must include an assignable cultural context. Nine of the 44 types presented here constitute unique specimens, three of which could not be assigned a cultural affinity.

A detailed attribute analysis of the majority of the stemmed-notched and triangular points is presented in Appendix B. The attribute list used for the analysis is provided in Appendix A. Recent excavations conducted at the Workman Site by Paul Heberling of Juniata College, Pennsylvania, uncovered a quantity of new material. Professor Heberling kindly loaned to us the collection for study, the projectile points from which were included in the classification but unfortunately could not undergo attribute coding in time for this report.

FORMAL DESCRIPTION OF THE PROJECTILE POINTS

Type 1 (Plate 1:4)

General Description: Large stemmed points of medium width and thickness.

Dimensions:

length: 48-62 mm.
width: 23-30 mm.
thickness: 7-9 mm.
length/width ratio: 2.1:1 mm.

Blade: Long and of medium width. Triangular or ovate in outline with straight or slightly excurvate lateral edges and varying degrees of symmetry. Transverse cross-section is asymmetrically biconvex. Maximum thickness is between the shoulders.

Haft Elements:

Shoulders: Moderately developed and usually asymmetrical. Form an obtuse angle with both the stem and blade. Generally join with the blade in angular zones of juncture.
Stem: Short, broad and relatively symmetrical, expanding towards the base.

Base: Slightly concave in outline and symmetrical. Zones of juncture are rounded.

Workmanship: Flaking is of moderately high quality, with shallow primary flake scars on the faces of the blade. Secondary flaking on the lateral edges is discontinuous. Haft elements are produced by the removal of a single large flake from each face with little or no retouch. Grinding of the base is absent.

Material: Grose-tan quartzite; gray argillite, low-grade gray chert.

Number of Specimens: 4

Chronology and Cultural Affiliation: An Early Archaic provenience is suggested for these points based on their similarity to the Kirk Corner-Notched type (Coe 1964: 69). Coe proposes a date of approximately 6000 B.C. for this type in the Carolina Piedmont sequence. Broyles (1964) provides a date of 6980 B.C. $\pm$ 160 years for the type at the St. Albans Site in West Virginia. The Workman Site specimens lack the serrated lateral edges that are characteristic of the Kirk type. With this exception, morphological and dimensional attributes of

Type 1 points conform particularly well to the St. Albans specimens. Points of similar configuration and dimensions and also lacking serrated blades have been identified by State Archaeologist Barry Kent as belonging to the Early Archaic of the southern piedmont and lower Susquehanna Valley of Pennsylvania (Personnal communication).

Type 2 (Plate 1:1)

General Description: A small ovoid point with notched base.

Dimensions:

length: 24 mm.
width: 16-18 mm.
thickness: 5 mm.
length/width ratio: about 1.4:1

Blade: Asymmetrically ovate in outline. Transverse cross-section is plano-convex and asymmetrical.

Haft Elements:

Shoulders: Virtually absent, with the blade continuing to the base. Maximum width and thickness occur about a third of the distance from the base.
Stem: Equal to width of blade. Parallel sided and convex. Joins with base in rounded zones of juncture.

Base: Deeply notched symmetrical recurvate concave outline with rounded zones of juncture.

Workmanship: Flaking irregular with slight serration of the lateral edges. Bifurcation of the base is produced by the removal of one large flake sometimes followed by one or more small ones on one face only. Grinding absent.

Material: Black chert, high grade chert.

Number of Specimens: 2

Chronology and Cultural Affiliation: This type very strongly resembles the St. Albans side notched Variety B type described by Broyles (1966: 24-25). The resemblance is most pronounced with respect to dimensions, the very weak development or absence of shoulders, flaking technique, and the deep bifurcation of the base. Broyles gives a radiocarbon date of 6870 B.C. $\pm$ 500 years at the St. Albans Site in West Virginia. Variety A of the St. Albans Side-notched type was radiocarbon dated at 6880 B.C. $\pm$ 100 years (Broyles 1966: 24-25).

References: Broyles 1964, p. 15, Fig. 3, 3, 4; West Virginia, 1966, p. 26, Fig. 21, 3rd row from top, 3rd from left; bottom row, 3rd from right.

Type 3 (Plate 1:2)

General Description: Point is small, broad and thin with a triangular blade and a large stem.

Dimensions:

length: 27-33 mm.
width: 15-23 mm.
thickness: 5 mm.
length/width ratio: 1.4:1

Blade: Symmetrical with the outline approximating an equilateral triangle. The transverse cross-section is plano-convex or bi-convex and slightly assymetrical. Lateral edges are straight.

Haft Elements:

Shoulders: Moderate in development, with one being angular, the other rounded. Obtuse angles are formed with the blade and with the stem. Orientation is symmetrical. Shoulders form widest portion of point.

Stem: Broad and relatively long, representing a third of the total length. Lateral edges are straight and contract slightly towards base. Stem is symmetrical.

Base: Symmetrically concave in outline; concavity produced by removal of one or two flakes from each side, nearly resulting in bifurcation. Zones of juncture are rounded or angular.

Workmanship: Skillfully flaked, with regular treatment of all edges. Base thinned with notches resulting from the removal of large flakes from each face. No grinding.

Material: Gray angillite and brown chert.

Number of Specimens: 2

Chronology and Cultural Affiliation: Review of the literature failed to yield an established point type with which these specimens may be affiliated. The configuration of the base and the general morphology of the point suggest an Early Archaic date, and it is possible that the specimen represents an aberrant form of an established bifurcated base type of the Early Archaic.

Type 4 (Plate 1:5)

General Description: Small, broad, relatively thin, with a narrow stem and notched base.

Dimensions:

length: 33-40 mm.
width: 23-25 mm.
thickness: 5-7 mm.
length/width ratio: 1.4:1 to 1.6:1

Blade: Symmetrically or asymmetrically ovate in outline. The transverse cross-section is biconvex or triangulo-convex and is asymmetrical. The longitudinal cross-section is asymmetrically biconvex. Maximum width and thickness occur across shoulders.

Haft Elements:

Shoulders: Wide and prominent in development and asymmetrical in orientation. Generally rounded but sometimes angular, forming right or acute angles with the blade, and right or obtuse angles with the stem.

Stem: Short and narrow relative to the blade, and parallel-sided.

Base: Notching forms an asymmetrical concave outline. Proximal points of juncture are rounded.

Workmanship: Quality of flaking is good, with secondary retouch of the lateral edges producing very slight serration on one specimen. The base is notched by the removal of a large flake from each face. No evidence of grinding.

Material: Grayish chert of relatively poor quality.

Number of Specimens: 3

Chronology and Cultural Affiliation: The points of this category resemble the Kanawha Stemmed type described by Broyles (1966: 27-28). Although the dimensions are similar to those given by Broyles, the points differ in blade form; those of Broyles having incurvate blades and those of the Workman Site having ovate blades. The Kanawha Stemmed type is dated at 6210 B.C. $\pm$ 100 years at the St. Albans Site in West Virginia (Ibid.)

References: Broyles 1966, p. 28.

Remarks: It is suggested that these points may represent a regional variant of the Kanawha Stemmed differing primarily in blade outline.

Type 5 (Plate 1:3)

General Description: A medium sized, relatively thick, stemmed point with a bifurcated or deeply notched base.

Dimensions:

length: 50 mm.
width: 28 mm.
thickness: 8 mm.
length/width ratio: 1.8:1

Blade: Outline forms an asymmetrical isocles triangle with incurvate sides just above the shoulders. Transverse cross-section is asymmetrically biconvex.

Haft Elements:

Shoulders: Moderate in development and angular and asymmetrical in orientation. Articulation with lower subelement of haft forms an obtuse angle.

Stem: Short and broad, expanding slightly towards the base. Relatively symmetrical.

Base: Ground, slightly asymmetrical. Recurvate-concave in configuration resulting from basal notching. Zones of juncture are rounded.

Workmanship: Flaking crude and irregular, particularly with respect to the lateral edges of the blade. Bifurcation of the base produced by the removal of one large and several smaller flakes from each face. Edges of the stem and base are smoothed.

Material: Low-grade gray chert, which may account for poor quality of workmanship.

Number of Specimens: 1

Chronology and Cultural Affiliation: Though cruder in workmanship, this specimen bears a strong resemblance to the Stanley Stemmed type described by Coe (1964: 35-36). The specimen conforms to this type in dimensions, notching of the base and the slightly incurvate edges of the blade. It differs from this type primarily in the lack of serration of the blade, the presence of basal grinding and the relative width of the stem. Coe estimates a date of 5000 B.C. for the Stanley Stemmed type at the Doerschuk Site in North Carolina (Ibid.).

References: Coe (1964: 31, Fig. 31, G)

Remarks: One other point (JC 68.245) may also belong to this type, although it has provisionally been classified with the Raystown Stemmed type 6.

Type 6 (Plate 1:6)

General Description: Medium-sized narrow stemmed points with concave bases.

Dimensions:

length: 27-50 mm.
width: 19-29 mm.
thickness: 7-9 mm.
length/width ratio: 1.4 to 1

Blade: Outline is ovate or triangular and asymmetrical. Lateral edges usually straight but occasionally are slightly incurvate or excurvate. Longitudinal cross-section is asymetrically biconvex. Transverse cross-section is either plano-convex or biconvex and is asymmetrical.

Haft Elements:

Shoulders: Broad and well-developed, sometimes asymmetrical in orientation. Join with the blade in angular or rounded zones of juncture and form an obtuse angle with the stem.
Stem: Short and of narrow to medium width. Sides straight and either parallel or slightly contracting.

Base: Mildly notched to form a shallow concavity. Generally asymmetrical in configuration. Zones of juncture either rounded or angular.

Workmanship: Flaking is rough and discontinuous, presenting a crude appearance. Lateral edges are irregular or slightly serrated. Bases thinned and notched by removal of one or a few large flakes from each face. Grinding absent.

Material: All except one specimen made from Bald Eagle Jasper. The exception is made of medium grade black chert.

Number of Specimens: 9

Chronology and Cultural Affiliation: These points appear to be related to the Raystown Stemmed type defined by Bebrich (1968: 572-573; 1970: in press) for the Sheep Rock Shelter where their context suggested an Early Middle Archaic date of 4000-5000 B.C. The type is believed to represent a regional variant and late form of a stemmed point tradition which includes Kirk, Stanley, LeCary and Kanawha variants.

Type 7 (Plate 1:16)

General Description: Specimens are small, relatively broad and thick stemmed points distinguished by an unworked base.

Dimensions:

length: 25-31 mm.
width: 18-23 mm.
thickness: 6-9 mm.
length/width ratio: 1.1:1 to 1.5:1

Blade: Triangular or ovate in outline; asymmetrical. Lateral edges are straight or excurvate. Transverse cross-section is asymmetrally biconvex, while longitudinal cross-section is asymmetrally biconvex or plano-convex. Maximum thickness is across shoulders.

Haft Elements:

Shoulders: Moderately strong in development and either rounded or angular. Generally asymmetrical in configuration. Either a right or an obtuse angle is formed by the articulation of the upper subelement of the haft and the blade.

Stem: Short, broad and asymmetrical. Generally slightly contracting but occasionally expanding towards base. Articulation of the upper and lower subelements of the haft form an obtuse angle.

Base: Straight and unmodified, revealing the remnant of the original striking platform from which the flake was struck from the core. Orientation is transverse or oblique relative to longitudinal axis. Zones of juncture are rounded or slightly angular.

Workmanship: Flaking is regular and of high quality, with the lateral edges exhibiting moderately continuous secondary retouch. As mentioned above, the base is unmodified and there is no grinding of the haft elements.

Material: Mottled red/yellow jasper; red jasper; gray chert.

Number of Specimens: 5

Chronology and Cultural Affiliation: These points bear a strong resemblance to the Lamoka type described by Ritchie (1961: 29-30; 1965: 50-51), particularly with respect to size and thick, unworked condition of the base. However, there is some deviation from Ritchie's specimens, for Type 7 points are broader, with more pronounced shoulders, and the flaking is of higher quality. The flaking of Ritchie's points generally is coarse, with a median ridge on the blade and little secondary retouch. Ritchie notes that Binford has

recognized a less common method of flaking whereby the Lamoka points exhibit flatter, randomly placed flake scars and a biconvex transverse cross-section, which Binford suggests may have chronological significance. A series of radiocarbon dates from the Lamoka Lake Site in New York tightly cluster around 2700 B.C. (Early Late Archaic). It should be noted, however, that Ritchie recognizes a persistence of the type in very minor proportions into the Middle Woodland period in central New York. At the Workman Site, Type 6 is assigned to a Late Archaic chronological provenience.

References: Ritchie, 1961, p. 83, Plate 13, No. 4, p. 84, Plate 14, No. 16.

Type 8 (Plate 1:15)

General Description: Broad, thick, small to medium-sized stemmed points characterized by an unmodified base.

Dimensions:

length: 33-45 mm.
width: 26-30 mm.
thickness: 7-9 mm.
length/width ratio: 1.2:1 to 1.5:1

Blade: Outline forms a symmetrical or asymmetrical, nearly equilateral triangle having straight or very slightly excurvate lateral edges. Transverse and longitudinal cross-sections are asymmetrically biconvex. Maximum thickness is across the shoulders.

Haft Elements:

Shoulders: Prominent and strongly developed. Relatively symmetrical in configuration and orientation, although one specimen is markedly asymmetrical in both respects. Articulation of blade and upper subelement of haft forms a right or acute angle with angular zones of juncture.

Stem: Short, broad and asymmetrical. Nearly as thick as the blade. The configuration is straight or very slightly expanding or contracting towards the base. An obtuse angle is formed by the articulation of the upper and lower subelements of the haft.

Base: Unworked with the remaining portion of the striking platform providing a straight or slightly irregular outline. Orientation is sometimes oblique relative to the longitudinal axis.

Workmanship: The nature and quality of the flaking is variable. Some specimens are characterized by coarse, deep, randomly placed flake scars and irregular and unretouched lateral edges. Others have shallow, more delicate scars and relatively continuous

secondary retouch of the lateral edges. The base is unworked and the haft elements are not ground.

Material: Medium-low grade gray or brown chert.

Number of Specimens: 4

Chronology and Cultural Affiliation: This type is recognized as another variant of the Lamoka type based on similarity in size and unmodified condition of the base. As in Type 7, the points are broader, the shoulders more strongly developed, and the workmanship of higher quality (in some specimens) than in Ritchie's sample (1961: 29-30). However, the similarities are sufficient to warrant a proposed affiliation with the Lamoka type. Type 8 is placed in the Early Late Archaic period with Types 7 and 9.

References: Ritchie, 1961: 29-30; 1965: 50-51.

Type 9 (Plate 1:11, 12)

General Description: Small to medium-sized, relatively thick stemmed points of moderate width exhibiting an unworked base.

Dimensions:

length: 36-54 mm.

width: 18-23 mm.

thickness: 6-13 mm.

length/width ratio: 1.5:1 to 2.5:1

Blade: Symmetrically or asymmetrically ovate in outline, with excurve lateral edges. Transverse cross-section is biconvex or triangulo-convex and is asymmetrical. A prominent median ridge is present on some specimens. The longitudinal cross-section is asymmetrically biconvex. Maximum thickness occurs at or above the distal axis.

Haft Elements:

Shoulders: Weak and asymmetrical in development. Seldom angular and sometimes broadly rounded. Blade and upper sub-element of the haft articulate in an obtuse angle.

Stem: Short, broad and asymmetrical, sometimes as thick as the blade; either contracting or expanding very slightly towards the base. Articulation of upper and lower sub-elements of haft produces a shallow, broadly rounded obtuse angle.

Base: Straight and unworked, thus leaving a portion of the original striking platform. Frequently oblique in orientation relative to the longitudinal axis. Zones of juncture are rounded or angular.

Workmanship: In addition to the unmodified base, the flaking is coarse with little secondary retouch along the lateral edges of the blade which tend to be irregular. Placement of the flake scars is random in some points to produce a biconvex transverse cross-section, while specimens characterized by a median ridge exhibit less random placement. Grinding is absent.

Material: Red/yellow jasper; gray and brown chert.

Number of Specimens: 5

Chronology and Cultural Affiliation: This group of points compares favorably with Ritchie's Lamoka type (1961: 29-30). The unmodified base is the most distinguishing characteristic of both types. Type 9 corresponds in dimensional ranges, relative proportions and flaking pattern (particularly with respect to the coarse and randomly placed flake scars, the low incidence of marginal retouch, and the presence of a median ridge on some specimens.) Like the points of Types 7 and 8, Type 9 probably represents early Late Archaic manifestation (c. 2700 B.C.) related to Lamoka point style.

References: Ritchie, 1961, p. 83, Plate 13, Nos. 5, 12, 21; Ritchie 1965, p. 50-51, Plate 14.

Type 10 (Plate 2:7, 9)

General Description: Broad corner-notched points of medium length and thickness.

Dimensions:

length: 29-46 mm.

width: 23-30 mm.

thickness: 5-7 mm.

length/width ratio: 0.9:1 to 1.6:1

Blade: Triangular or ovate in outline and generally symmetrical. Lateral edges excurvate, straight or occasionally incurvate. Transverse cross-section is biconvex. Maximum thickness is located immediately above the shoulders.

Haft Elements:

Shoulders: Deep corner notches form prominent barbs which sometimes extend almost to the base. The upper subelement

of the haft joins with the blade in acute angles with rounded zones of juncture.

Stem: Short, symmetrical and very broad, expanding sharply towards the base. The upper and lower subelements of haft form acute angles with rounded zones of juncture.

Base: Broad, nearly as wide as the shoulders in some specimens. Straight or very slightly convex in outline, with rounded corners.

Workmanship: Flaking is continuous and of high quality, with small, shallow flake scars. Delicate and regular secondary retouch of the lateral edges and base. Haft is formed by the removal of multiple flakes from both faces at each corner probably as a result of hafting. Slight basal smoothing is present on one specimen,

Material: Tan and brown chert of medium quality.

Number of Specimens: 5

Chronology and Cultural Affiliations: Although these points conform well with the description of the Brewerton Corner-Notched type presented by Ritchie (1961: 16), the Late Archaic date of 2500 B.C. to 2000 B.C. for this type (Ritchie 1965: 91) is applied with caution to the Workman Site specimens. Points of similar form are found in a Middle Woodland context in Ohio (Shane and Murphy 1967: 355). Thus, although the specimens are believed to be affiliated with the Late Archaic Brewerton type, the alternative possibility of a Middle Woodland origin for one or more of the points must be considered.

Type 11 (Plate 2: 5, 6)

General Description: Small, broad, moderately thick side-notched and corner-notched points.

Dimensions:

length: 29-37 mm.

width: 19-26 mm.

thickness: 6-8 mm.

length/width ratio: 1.1:1 to 1.6:1

Blade: Broad, symmetrically or asymmetrically triangular or ovate in outline with straight or excurvate lateral edges. Maximum thickness is across the shoulders. Transverse cross-section biconvex.

Haft Elements:

Shoulders: Moderate to strong in development depending upon depth of side notch. Generally horizontal in orientation, forming an acute or right angle with the blade. Join with the blade in rounded (or occasionally angular) zones of juncture.

Stem: Short and very broad, expanding sharply towards the base. Notches shallow to medium in depth, with upper and lower subelements of the haft meeting in an acute or right angle.

Base: Straight, with slightly rounded or broadly rounded zones of juncture. Very broad, sometimes as wide as the shoulders.

Workmanship: Flaking of the blade involved removal of small shallow primary flake scars and moderately even retouch of the lateral edges and base. Notching was accomplished by the removal of a single large flake from each side of the notch, with little or no retouch. Occasional slight smoothing of the notches and base, probably produced by hafting lashes.

Material: Black chert; red chert, grayish chert; gray angillite.

Number of Specimens: 12

Chronology and Cultural Affiliation: This group of points generally conforms to points of the small Brewerton Corner-Notched and Side-Notched types (Ritchie 1961: 16,19) which are diagnostic of the Late Archaic Brewerton phase in New York. However, a resemblance to certain small corner and side notched points of the Middle Woodland is also noted (Kent and Packard 1969: 33). The primary difference between Type 11 and similar Middle Woodland points is in the configuration and articulation of the stem and base: the Late Archaic specimens have broader, rounded zones of juncture, while the Middle Woodland variety has narrower, angular zones of juncture. A second difference lies in the form of the base: Late Archaic specimens generally have straight bases with occasional convex exceptions, while the Middle Woodland variety generally has slightly convex bases with occasional straight exceptions. A possible third difference may lie in the choice of material, with Middle Woodland specimens being manufactured from higher quality cherts and flints.

References: Ritchie 1961: 16, 19.

Remarks: Two of the specimens (A67.2 766; A67.2 3380) were reshaped into hafted end scrapers.

Type 12 (Plate 1:9)

General Description: Small, weakly side-notched points of medium width and thickness, with a broad base having protruding "ears".

Dimensions:

length: 22-33 mm.
width: 14-18 mm.
thickness: 5-6 mm.
length/width ratio: 1.4 to 2.2:1

Blade: Relatively long and usually triangular but occasionally slightly ovate. More or less symmetrical. Maximum thickness is across the shoulders. Transverse cross-section is symmetrically or asymmetrically biconvex or plano-convex.

Haft Elements:

Shoulders: Shallow side notches produce weakly developed, angular shoulders. The angle formed between the blade and upper subelement of the haft is obtuse.

Stem: Short and very broad, expanding toward the base. The upper and lower subelements of the haft join in rounded obtuse angles.

Base: Straight or very slightly concave in outline, with angular or slightly rounded corners that are carefully chipped into prominent, flaring "ears".

Workmanship: Skillfully flaked, with delicate and even secondary chipping of the lateral edges and especially of the base. The corners of the base are delicately flaked into sharp, protruding "ears". Slight basal grinding is present on two specimens.

Material: Gray chert of varying grades; white chalcedony, tan chert.

Number of Specimens: 9

Chronology and Cultural Affiliation: Ritchie's (1961: 17) description of the Brewerton Easred-Notched point accurately describes the points in this category. They are assigned to the Late Archaic (c. 2500-2000 B.C.).

References: Ritchie 1961, Plate 5: 4, 6.

Type 13 (Plate 2:8)

General Description: Thick, medium to large-sized, deeply side-notched points of medium width.

Dimensions:

length: 42-45 mm.
width: 24 mm.
thickness: 8 mm.
length/width ratio: 1.9:1 to 1.9:1

Blade: Symmetrically ovate in outline. Transverse cross-section is symmetrically biconvex. Maximum thickness is about a third of the distance above the shoulders.

Haft Elements:

Shoulders: Prominent and strong in development, slightly rounded or angular. Joins at right angles with the blade in angular zones of juncture.

Stem: Deep, symmetrical side notches produce a short stem which expands sharply towards the base. The upper and lower subelements of the haft articulate in rounded acute angles.

Base: Only slightly convex in outline with angular zones of juncture. Equal to or slightly less than width of shoulders.

Workmanship: High-quality flaking characterized by shallow, continuous flake scars and regular marginal retouch along the lateral edges and the base. Each side notch was made by removing a large flake from both faces, with retouching where necessary.

Material: Gray chert; low-grade dark red chert.

Number of Specimens: 2

Chronology and Cultural Affiliation: These points are strongly reminiscent of the Brewerton Side-Notched type described by Ritchie (1961: 19; 1965: 91). A Late Archaic date of 2500 B.C. to 2000 B.C. is assumed for Type 13.

Reference: Ritchie 1961: 19-20, 72; Ritchie 1965: 91.

Type 14 (Plate 2:1)

General Description: Small, thick relatively narrow side-notched points.

Dimensions:

length: 21-41 mm.
 width: 15-21 mm.
 thickness: 6-8 mm.
 length/width ratio: 1.4:1 to 1.8:1

Blade: Relatively long and narrow, triangular or slightly ovate in outline and symmetrical and occasionally serrated. Lateral edges straight or slightly excurvate. Transverse cross-section is biconvex or plano-convex. Maximum thickness is located at or immediately above the shoulders.

Haft Elements:

Shoulders: Weakly developed and rounded when side-notches are shallow. More deeply notched points have angular, more well-defined shoulders. All shoulders slope upward to form an obtuse angle with the blade.

Stem: Very short and broad, expands towards the base. Upper and lower subelements of the haft meet in an obtuse angle.

Base: Broad, sometimes wider than the shoulders. Outline is concave, although one specimen is slightly convex. Protruding zones of juncture are rounded.

Workmanship: Flaking of the blade generally regular and continuous. Lateral edges are retouched to produce slight serration on at least two specimens. The base is carefully flaked to produce prominent "eared" corners. Grinding of the base is present on two specimens.

Material: High-grade mottled gray-black chert; black chert; low quality tan chert.

Number of Specimens: 10

Chronology and Cultural Affiliation: A few points of this category strongly resemble the Brewerton Side-Notched type (Ritchie 1961: 19) while most of the specimens are more similar to the Brewerton Eared-Notched form (Ritchie 1961: 17). In Eastern Pennsylvania the name Helgramite is given to these points. At the Sheep Rock Shelter comparable points (Sheep Rock Shelter Type 13) were recovered in and adjacent to the same stratum as small Brewerton Corner-Notched points (Sheep Rock Shelter Type 8) (Bebrich 1967: 577-578). The type is therefore assigned to the Late Archaic (c. 2500-2000 B.C.).

f

1

Type 15 (Plate 1:10)

General Description: Small, moderately broad, side-notched points of medium thickness with extremely broad bases characterized by flaring, sometimes squared "ears".

Dimensions:

length: 24-38 mm.
width: 18-24 mm.
thickness: 5-7 mm.
length/width ratio: 1.2:1 to 1.6:1

Blade: Triangular or ovate in outline and symmetrical, with straight or excurvate lateral edges. Maximum thickness is across or directly above the shoulders. Transverse cross-section is symmetrically biconvex.

Haft Elements:

Shoulders: Weakly developed but angular on specimens with shallow notches, while deeply notched points have prominent shoulders which also join with the blade in angular zones of juncture. An obtuse angle is formed between the blade and the upper subelement of the haft.

Stem: Broad and short. Expands outward and joins with the base in rounded zones of juncture. In one specimen the "ears" are squared such that the lower subelement of the haft is joined with the base by a vertical intermediate subelement.

Base: Concave in outline and very broad, surpassing the shoulders in breadth. Corners are carefully worked into protruding squared or rounded "ears".

Workmanship: Flaking is of very high quality, with small, shallow, carefully placed flake scars on both faces of the blade, with delicate and regular retouch along the lateral edges of the blade and base. Grinding of the base or notches is absent.

Material: Red, tan and black chert of relatively low grade.

Number of Specimens: 5

Chronology and Cultural Affiliation: These points appear to represent a variant of the Brewerton Eared-Notched type (Ritchie 1961:17) and therefore are assigned a Late Archaic temporal provenience of 2500 B.C. to 2000 B.C.

References: Ritchie 1965: 108 (Plate 34: 11, 23).

Type 16 (Plate 2:2)

General Description: Thick, medium-sized eared-notched points with prominent basal corners.

Dimensions:

length: 35-40 mm.
width: 20-25 mm.
thickness: 7-9 mm.
length/width ratio: 1.5:1 to 2.2:1

Blade: Long and relatively narrow. Triangular or ovate in outline. Slightly asymmetrical with straight, slightly excurvate lateral edges. Maximum thickness is across the shoulders. Transverse cross-section is biconvex.

Haft Elements:

Shoulders: Weakly developed; join with the blade in oblique angles and angular zones of juncture.
Stem: Short and extremely broad, expanding markedly towards the base. Upper and lower subelements of the haft meet in broadly rounded oblique or right angles. Frequently asymmetrical.

Base: Straight or very slightly concave. Frequently oblique in orientation. Sometimes exceeds shoulders in width, with the flaring corners forming rounded or angular (squared) "ears".

Workmanship: Flaking quality varies with some points having large, coarse flake scars and little or no secondary chipping, other points are more carefully flaked, with continuous retouch of the lateral edges and base. The "eared" corners of the base are rounded or squared and sometimes are asymmetrical. Occasionally grinding is present on the base and haft elements.

Material: Gray and tan chert, predominantly of poor quality.

Number of Specimens: 6

Chronology and Cultural Affiliation: Like Types 14 and 15, these points are very similar to the Brewerton Side-Notched type and probably constitute a variant of that Late Archaic style (Ritchie 1961: 19).

References: Ritchie 1965: p. 72 (Plate 29: 7, 9), p. 108 (Plate 34: 16)

Type 17 (Plate 1:24; Plate 2: 7, 8)

General Description: Small to medium-sized stemmed points with parallel or slightly contracting stems.

Dimensions:

length: 32-80 mm.

width: 18-30 mm.

thickness: 6-10 mm.

length/width ratio: 1.5:1 to 2.3:1

Blade: Symmetrically ovate in outline, relatively long and either relatively narrow or broad in width. Transverse cross-section is symmetrically or asymmetrically biconvex. Maximum thickness is between the shoulders.

Haft Elements:

Shoulders: Moderately developed and slightly rounded forming obtuse angles with both the stem and blade. Join with the blade in sub-angular zones of juncture.

Stem: Broad, usually straight and parallel-sided, but occasionally contracts slightly towards the base.

Base: Straight or very slightly convex; joins with the stem in angular or slightly rounded zones of juncture; unworked in two specimens, unfinished in two others.

Workmanship: Flaking is coarse with random flake scars and irregular and discontinuous retouch of the lateral edges. A slight median ridge is present on some specimens. The poor quality of the material probably is the major cause of the crude appearance of the points.

Material: Gray angillite; mottled black and white chert; brown chert; black chert.

Number of Specimens: 11

Chronology and Cultural Affiliation: Type 17 is believed to be related to the Wading River Point recently defined by Ritchie (1965: 134-137; 1969: 241-242). It conforms to this type in all essential features, including dimensions, workmanship and configuration of the haft-base complex. The Wading River point has been dated to 2190 B.C. $\pm$ 100 years at the Hornblower II Site in New York. A similarity is also noted between the Workman Site Type 17 and Sheep Rock Shelter Type 22 where the latter occupied a stratigraphic position that agrees well with the above radiocarbon date (Bebrich 1970).

References: Bebrich 1967, p. 693 (Fig. E: type affiliation incorrect);
Broyles 1964, p. 23 (Fig. 11: Type A specimens).

Remarks: With the exception of one specimen, the points of Type 17 fall within the length measurement range of 32-55 mm. The one exception (80 mm. in length) shares all other diagnostic features of the type and cannot be excluded on the basis of size. Asymmetry of the blade suggests a knife rather than projectile point function for this specimen.

Type 18 (Plate 1:13)

General Description: Thick, weak-shouldered, contracting stemmed points of medium size.

Dimensions:

length: 38-40 mm.
width: 20-22 mm.
thickness: 7-10 mm.
length/width ratio: 1.8:1 to 2:1

Blade: Narrow and ovate in outline with slightly excurvate lateral edges. Markedly biconvex in transverse cross-section, suggesting reworking of the blade. Maximum thickness is across the shoulders.

Haft Elements:

Shoulders: Weak and poorly defined, forming a broad to moderately rounded obtuse angle with the blade. Sometimes asymmetrical in configuration.

Stem: Moderate in width; contracts toward the base. Lateral edges are linear.

Base: Slightly convex with rounded zones of juncture.

Workmanship: Flaking of the blade stem and base is coarse and discontinuous, probably as a result of the refractory nature of the material.

Material: Mottled gray and black chert.

Number of Specimens: 3

Chronology and Cultural Affiliation: This type is believed to be related to the Squibnocket stemmed point recently defined by Ritchie (1969: 243). Ritchie considers this type to be a variant of the Wading River type (*Ibid.*: 241-242), as is presumed to be the case at the Workman Site, where a relationship between Types 17 and 18 is postulated. The Squibnocket

Stemmed point is chronometrically fixed at 2190 B.C. $\pm$ 100 years at the Hornblower II site in New York (Ibid.: 243).

References: Ritchie 1969, p. 36 (Plate 12: 8-11).

Type 19 (Plate 3:5)

General Description: Small, narrow, relatively thick, with a broad stem and very weakly developed shoulders.

Dimensions:

length: 33 mm.
width: 17 mm.
thickness: 7 mm.
length/width ratio: 2:1

Blade: Narrow and symmetrically triangular in outline, with straight lateral edges. Symmetrically bitriangular in transverse cross-section. Median ridge present on both faces. Maximum thickness is at the shoulders.

Haft Elements:

Shoulders: Virtually non-existent; constituted by slightly protruding angular zones of juncture with the blade. A very broad obtuse angle is formed by the articulation of the blade with the upper subelement of the haft.

Stem: Very broad, nearly as wide as the shoulders and contracting slightly towards the base. Sides are straight and continue in an uninterrupted line from distal to the proximal zones of juncture.

Base: Straight and broad, with very slightly rounded zones of juncture.

Workmanship: Flaking is of high quality with continuous shallow and well-defined flake scars running along each side of the median ridge. The median ridge terminates on the stem as a result of careful thinning of the base and the lower half of the stem. Grinding absent on the edges of the base and stem.

Material: High-quality dark brown chert.

Number of Specimens: 1

Chronology and Cultural Affiliation: This "type" is probably also related to the Wading River point defined by Ritchie (1969: 242-243). Its type status here is an unfortunate hangover from an earlier trial classification of the Workman Site points prepared before Ritchie's work became available. At

that time, considerations of workmanship and material seemed to warrant separation from Types 17 and 18. We became aware of Ritchie's publication as this manuscript was going to press and elected to revise this discussion rather than restructure the typology. The single specimen of Type 19 is now included in Type 18 which on the basis of its postulated relation to the Wading River point style is believed to date to the Late Archaic period (c. 2200 B.C.).

References: Ritchie 1969, p. 146 (Plate 42:5).

Type 20 (Plate 1:17)

General Description: Large, broad, relatively thin stemmed point.

Dimensions:

length: 52 mm.
width: 33 mm.
thickness: 7 mm.
length/width ratio: 1.6:1

Blade: Ovate in outline and slightly asymmetrical. Maximum width is across the shoulders. Transverse cross-section is asymmetrically biconvex.

Haft Elements:

Shoulders: Prominent, asymmetrical and nearly horizontal in development. Join with the blade in angular or rounded zones of juncture.

Stem: Straight and parallel-sided, relatively short and of medium width. Articulation of upper and lower subelements of the haft form rounded right angles.

Base: Concave and slightly asymmetrical with rounded zones of juncture. About half as wide as the blade.

Workmanship: Workmanship is well-controlled with primary flaking resulting in large, shallow expanding flake scars. Lateral edges of the blade and base exhibit discontinuous marginal retouch. Grinding is absent. Both specimens prepared on plano-concave flake blanks.

Material: Dark brown chert.

Number of Specimens: 2

Chronology and Cultural Affiliation: This point strongly resembles the Savannah River Stemmed type defined by Coe (1964: 44) as

a dominant point style of the Late Archaic period in the Carolina Piedmont. Although the specimen is much smaller than the points described by Coe, Type 20 agrees in other diagnostic features. Broyles (1964) has differentiated the Savannah River specimens from the Mill Pond Site in West Virginia into five subtypes (1964: 20). The Workman Site points conform with her Subtype 3 with respect to both dimensions and form. Broyles suggests an approximate Late Archaic date of 2000 B.C. for this type throughout the Eastern United States. Other related types (Susquehanna Broad Spear, Frost Island, etc.) date as late as 700 B.C. and are assigned to the Transitional period, as is the Workman Site type.

References: Broyles 1964: 20, Fig. 7, No. 1; Coe 1964: 44, Fig. 38c.

Type 21 (Plate 1:22)

General Description: Medium-sized, side-notched point with ground concave base.

Dimensions:

length: 48 mm.
width: 24 mm.
thickness: 6 mm.
length/width ratio: 2:1

Blade: Ovate in outline, with slightly excurvate lateral edges. Relatively symmetrical. Maximum thickness is across the shoulders. Transverse cross-section is asymmetrically biconvex.

Haft Elements:

Shoulders: Weak, broadly rounded and asymmetrical in development. Forms an oblique angle with the blade.

Stem: Short and broad, expands sharply towards the base. The upper and lower subelements of the haft form broad, rounded right angles. Relatively symmetrical.

Base: Concave, ground and symmetrical. Joins with the stem in rounded zones of juncture. Nearly equal to the shoulders in width.

Workmanship: Flaking is relatively crude, with coarse, somewhat randomly placed primary flake scars. Lateral edges are irregular and lack secondary marginal retouch.

Material: Rhyolite

Number of Specimens: 1

Chronology and Cultural Affiliation: This specimen conforms unequivocally to the Susquehanna Broad point type described by Witthoft (1953: 5-31). This type is a diagnostic point form of the Transitional period (c. 1700-700 B.C.).

References: Ritchie 1961: 111, Plate 31, Nos. 4 and 5; Witthoft 1953: 29, Plate I, 12, 17.

Remarks: Though smaller and narrower across the blade, the haft-base complex of this specimen is identical to that for points recovered from the Transitional component of the Sheep Rock Shelter (Bebrich 1967: 593, Type 28; 695, Fig. e).

Type 22 (Plate 1:21)

General Description: Broad, relatively thick side/corner-notched points of small to medium size.

Dimensions:

length: 32-81 mm.
width: 19-47 mm.
thickness: 6-9 mm.
length/width ratio: 1.5:1 to 1.8:1

Blade: Broad, ovate in outline and relatively symmetrical. Maximum thickness occurs immediately above the shoulders. Transverse cross-section is symmetrically biconvex. Great variations in size.

Haft Elements:

Shoulders: Variably developed. Moderately developed and angular in one specimen; rounded and weakly or strongly developed in two other specimens. Relatively symmetrical. Obtuse angle formed between blade and upper subelement of the haft.
Stem: Short, broad and expanding sharply towards the base. Formed by symmetrical side or corner notches of moderate depth. Upper and lower subelements of the haft form rounded oblique angles.

Base: Broad, very slightly concave, straight or slightly convex in outline, and symmetrical. Zones of juncture are slightly rounded. Width is nearly equal to that of the shoulders in two specimens.

Workmanship: Workmanship of one specimen is of very high quality, with well-defined, shallow, carefully placed primary flake scars and fine, regular marginal retouch along the lateral edges, base

and haft elements. Corners of the base are delicately chipped and flaring, and the basal edge is ground. A second point is crudely flaked, exhibiting coarse primary flake scars and irregular treatment of the lateral edges and the (unground) base. The third specimen is considerably larger than the other two, is boldly flaked, exhibits discontinuous marginal retouch of the blade, and possesses a well-ground base.

Material: Gray flint, low-grade red jasper.

Number of Specimens: 3

Chronology and Cultural Affiliation: The points of Type 22 fall well within the range of variation of the Susquehanna Broad point type defined by Witthoft (1953: 1-31). This type is a diagnostic form of the Transitional Period (c. 1700-700 B.C.)

References: Ritchie 1961: 111, Plate 31, Nos. 3 and 10. Witthoft 1953, p. 29 (Plate 1: 9, 25), p. 30 (Plate 11: 5).

Type 23 (Plate 1:20)

General Description: Very broad corner-notched points of medium length and thickness.

Dimensions:

length: 29-43 mm.

width: 32-33 mm.

thickness: 6 mm.

length/width ratio: 0.9:1 to 1.3:1

Blade: Ovate or triangular in outline and asymmetrical. Lateral edges straight or slightly excurvate. Maximum thickness occurs across the shoulders on one point and across the middle of the blade on the other. Transverse cross-section is plano-convex or biconvex and asymmetrical.

Haft Elements:

Shoulders: Very broad and strongly developed with angular or slightly rounded zones of juncture. Upper subelement of the haft is horizontal in orientation and forms an acute angle with the blade.

Stem: Short and symmetrical, expanding towards the base. Articulation of upper and lower subelements of the haft results in a rounded acute angle.

Base: Straight, with rounded zones of juncture. About half as wide as the shoulders. Ground on one specimen.

Workmanship: Primary flaking generally is rough. Secondary chipping is present along the lateral edges and base but most often is uneven and discontinuous. Grinding is absent on the edges of the base and haft elements.

Material: White quartzite; white chalcedony of poor quality; low-grade red jasper; gray chert of medium to low quality.

Number of Specimens: 8

Chronology and Cultural Affiliation: Type 24 exhibits the rounded asymmetrical shoulders and the peculiar flaring stem that are diagnostic attributes of the Orient Fishtail type (Ritchie 1961: 39). This type is defined by Ritchie as the characteristic point type of the Orient complex of New York. Radiocarbon dates range from 1044 B.C. $\pm$ 300 to 763 B.C. $\pm$ 300 years for this Transitional complex (*Ibid.*).

References: Ritchie 1961, p. 93 (Plate 19: 8, 11); 1965, p. 167 (Plate 55: 6, 9, 11).

Type 25 (Plate 3:1, 2)

General Description: Relatively thin side-notched points of medium size.

Dimensions:

length: 37-47+ mm.
width: 21-26 mm.
thickness: 5-6 mm.
length/width ratio: 1.5:1 to 2:1

Blade: Ovate in outline with slightly excurvate lateral edges. Transverse cross-section is biplano.

Haft Elements:

Shoulders: Weakly developed and angular. Form an obtuse angle with the blade.
Stem: Expanding, short and very broad.

Base: Slightly convex with angular or slightly rounded corners. Roughly equal to the shoulders in width. Ground in 3 of the 4 specimens.

Workmanship: Both faces are characterized by large, flat flake scars. Lateral edges are carefully retouched and one specimen is beveled on alternate sides. Basal edge of one point is deeply beveled. Base is ground on two specimens.

Workmanship: One point is coarsely flaked with discontinuous marginal retouch causing irregular lateral edges. The remaining specimen exhibits workmanship of high quality, with shallow, carefully placed primary flake scars. Lateral edges and base exhibit even regular marginal retouch.

Material: Gray argillite; reddish chert of poor quality.

Number of Specimens: 2

Chronology and Cultural Affiliation: These points strongly resemble the Perkiomen Broadspire point defined by Witthoft (1953: 1-31), particularly with respect to the exaggerated blade configuration that is diagnostic of the Perkiomen type. This type is a characteristic point form of the Transitional period (1700 B.C. - 700 B.C.), the Perkiomen type occurred contemporaneously with and later than the Susquehanna Broad point (Witthoft 1953: 16).

References: Witthoft 1953: 30, Plate II, Nos. 23 and 35.

Type 24 (Plate 1:24)

General Description: Thick stemmed points of small to medium size and of medium width.

Dimensions:

length: 27-54 mm.
width: 18-22 mm.
thickness: 7-9 mm.
length/width ratio: 1.4:1 to 2.5:1

Blade: Usually narrow, parallel or contracting ovate in outline and slightly asymmetrical. Transverse cross-section is asymmetrically biconvex. Maximum thickness is across or directly above the shoulders.

Haft Elements:

Shoulders: Weakly developed and frequently asymmetrical. Join with the blade in angular zones of juncture and oblique.

Stem: Broad relative to the blade, expanding slightly towards the base. Articulation of upper and lower subelements of the haft forms a broadly rounded obtuse angle.

Base: Straight or slightly concave in outline. Occasionally slightly asymmetrical. Almost as wide as the shoulders. Zones of juncture almost always angular.

Material: Mottled gray and tan lustrous chert, dark brown chert.

Number of Specimens: 4.

Chronology and Cultural Affiliation: These specimens conform very well to Ritchie's (1961: 35) description of the Meadowood point. This type is a diagnostic trait of the Meadowood phase of the Early Woodland period in New York (Ritchie 1965: 182). Radiocarbon dates for this phase range from about 1000 B.C. to 500 B.C. (Ritchie 1965: 180).

References: Ritchie 1965: 180, Plate 60, No. 3. Ritchie 1961: 89, Plate 17, Nos. 5 and 7.

Remarks: One of the specimens of this type was reworked into a burin; presumably after breakage during use in the tool's primary functional context (piercing and/or cutting). Its use as a burin involved the removal of at least 4 burin spalls along one lateral edge of the blade from the tip towards the base, as illustrated in Plate 3, No. 1.

Type 26 (Plate 2:12)

General Description: This type consists of the stems of two medium to large-sized stemmed points. A reconstruction of the blade and shoulders was not attempted, although a possible configuration is provided in the Ritchie reference below. One stem is parallel-sided, while the other is slightly contracting. Bases are straight or only slightly convex with crisp, angular-corners. The stems are relatively thin (5-6 mm.), which suggests that the entire point also was thin. The flaking is of exceptional quality relative to the entire point collection, with delicate and continuous retouching of the lateral and basal edges. Slight lateral beveling occurs on the parallel-sided specimens. Grinding is absent. Both points are made of exotic translucent pinkish white and gray-buff flint. The size is uniform, with the basal widths measuring 8 and 9 mm., respectively. Shoulders probably expand out from the stem about 14 mm. above the base.

Chronology and Cultural Affiliation: A striking resemblance is noted to the stem of a large, thin, broad-bladed, straight-stemmed point described by Ritchie as "an undesignated point form of the Adena culture, which occurs also in the related Middlesex complex of the Northeast." (1961: 114, Plate 33, No.1). The similarity includes configuration, flaking quality and the use of exotic flint. Although a relationship to the point type illustrated by Ritchie is proposed with reservations,

the delicate flaking and the use of exotic flint provide support for an Early or Middle Woodland assignment.

References: Ritchie 1961, p. 114 (Plate 33: 1). Dragoo 1963, p. 110, Type a, 3rd from left (the blade of this specimen appears to have been reworked.)

Type 27 (Plate 2: 10)

General Description: Broad, thin, corner-notched points having an ovate or pentagonal blade outline.

Dimensions:

length: 30-38 mm.
width: 24-31 mm.
thickness: 5-7 mm.
length/width ratio: 1.2:1 to 1.6:1

Blade: Asymmetrically ovate or pentagonal in outline, with excurvate or angular lateral edges. Sometimes asymmetrical. Transverse cross-section is biconvex to nearly biplano. Maximum thickness occurs above the shoulders.

Haft Elements:

Shoulders: Moderate to deep corner-notching produces prominent, angular shoulders which are parallel to the base or which project downward as sharp, flaring barbs.

Stem: Short and very broad, expanding sharply.

Base: Straight or slightly concave or convex in outline, equal to or nearly equal to the shoulders in width. Corners are angular, slightly rounded or squared.

Workmanship: Large, flat, shallow flake scars on face give points a nearly flat appearance. Lateral and basal edges exhibit careful and continuous retouch. Base of one specimen is smoothed.

Material: Gray flint; gray chert.

Number of Specimens: 3

Chronology and Cultural Affiliation: These specimens appear to be representatives of the Jack's Reef Corner-Notched type (Ritchie 1961: 26). They share in common a pentagonal blade outline and the peculiar configuration of the notches. The temporal range for this type extends from the Late Middle Woodland to the Early Late Woodland periods. In New York, Ritchie (1961: 26) assigns these points to the Point Peninsula 2 and 3 complexes

and to the early Owasco Carpenter Brook complex, and he cites a radio-carbon date of A.D. 905⁺ 250 years for a site of the latter complex.

References: Ritchie 1965: 230, Plate 80, No. 20; Ritchie 1961: 79, Plate 11, Nos. 8 and 10.

Type 28 (Plate 2: 13,14)

General Description: Small, broad, thin, stemless pentagonal points.

Dimensions:

length: 26-37 mm.
width: 17-25 mm.
thickness: 4-7 mm.
length/width ratio: 1.2:1 to 1.6:1

Blade: Thin, pentagonal in outline, with angular lateral edges. Sides parallel or slightly contracting. Biplano in transverse cross-section.

Haft Elements:

Shoulders: Absent.
Stem: Absent.

Base: Straight to mildly concave, with angular zones of juncture.

Workmanship: Both faces characterized by large flat flake scars which contribute to flat appearance of the point. Retouch of lateral and basal edges is generally regular on finished specimens. Base generally thinned by removal of large flakes from the central portion of the basal edge.

Material: Dark brown, generally low grade chert.

Number of Specimens: 12

Chronology and Cultural Affiliation: These specimens exhibit unequivocal conformity to the Jack's Reef Pentagonal type (Ritchie 1961:28) and therefore are identified as representatives of that type. In New York the cultural affiliations of this type are with the Point Peninsula 2 or 3 complexes and the early Owasco Carpenter Brook complex. The temporal range of this type extends from the late Middle Woodland into the early Late Woodland period.

References: Ritchie 1961, p. 80 (Plate 12:3,5); 1965, p. 258 (Plate 88: 49).

Remarks: The dimensions provided above are of those that are considered to be "finished" specimens. One member of the type (Plate 2:14) is considerably thicker than the others and appears to be an unretouched blank. Consideration of the dimensional properties and workmanship of the remaining specimens suggests the possibility of two distinct groups within the type: (1) a relatively thick (5-8 mm.), boldly flaked, generally asymmetrical variety; exhibiting a variable morphology; and (2) a thin (4-5 mm.) highly standardized, symmetrical group exhibiting careful retouch of the lateral edge (Plate 2:13).

Type 29 (Plate 2:11)

General Description: Small, broad, very thin corner-notched point prepared on a grey-white chalcedony blade.

Dimensions:

length: 29 mm.
width: 17 mm.
thickness: 4 mm.
length/width ratio: 1.7:1

Blade: Broad, ovate in outline, and slightly asymmetrical. The transverse cross-section is triangular-convex and asymmetrical. Maximum thickness is above the shoulders. One face retains the unretouched median ridge of the blade blank.

Haft Elements:

Shoulders: Form small, downward-projecting barbs. Join with the blade in angular zones of juncture.
Stem: Short and broad, and expanding sharply towards the base. Rounded acute angle is produced by the intersection of the upper and lower subelements of the haft.

Base: Straight and slightly irregular, with angular zones of juncture. About three-fourths as wide as the shoulders.

Workmanship: Manufactured from a bladlet blank with little shaping of either face. Delicate and regular marginal retouch of the lateral edges. Deep corner-notches formed by removal of a single flake from both corners of one face only. Base retouched but irregular, with no grinding.

Material: Grey-white chalcedony.

Number of Specimens: 1

Chronology and Cultural Affiliation: This specimen is tentatively classified with the Jack's Reef Corner-Notched style defined by Ritchie (1961:26). It differs from most specimens of this type only in its relatively small size and narrow blade and

choice of flake blank. These properties are within the range of variation exhibited by the type as described and illustrated by Ritchie (ibid:26,78). Thus, the status of this point as a separate type is purely artificial and is designed to focus attention on the three properties which distinguish it from Type 27 above: (1) technology (the use of a blade rather than a flake blank), (2) workmanship (fine marginal retouch without bifacial treatment), and (3) material (the use of imported chalcedony in contrast to the generally poorer quality local material). Notwithstanding these considerations, Types 27 and 29 are considered to constitute a single late Middle Woodland/early Late Woodland point style of the Point Peninsula 2 and 3 (c. AD 600).

References: Ritchie 1961:26.

Type 30 (Plate 3:4)

General Description: This type is composed of the stem portion of a small, thin, side-notched point. In transverse cross-section, the point is biplane and extremely thin (4 mm.). The notches are of moderate depth and are positioned relatively high above the base, creating an intermediate subelement and a squared configuration. The width of the stem probably equals or exceeds that of the shoulders. The base is very slightly concave in outline with angular zones of juncture. Careful thinning of the stem was accomplished by the removal of long, flat, basal originating lamellar flakes from the central portion of each face. Lateral edges of the stem and base are delicately retouched by pressure flaking. The stem is squared and contracts slightly forwards of the base.

Material: Dark brown medium grade chert.

Chronology and Cultural Affiliation: Dimensions and configurations of the haft/base complex are identical to certain points described by Ritchie as "...thin, side-notched arrow points resembling [the] 'Raccoon Notched' type" (1965:231). This type is associated with the Kipp Island phase of the late Middle Woodland period in New York. According to Ritchie, index points of this phase include the Jack's Reef Corner-Notched and Pantagonal styles, and "...a generally thin, well-made, side-notched form; apparently a holdover from Early Point Peninsula times" (ibid:243), or Type 30 at the Workman Site. The Kipp Island phase is dated at AD 630 +/- 100 years at the Kipp Island #3 Site in New York (ibid:228).

References: Ritchie 1965:231 (Plate 81:26,30,36).

Type 31 (Plate 1:19)

General Description: Large, thick, broad points characterized by broad stems, weak asymmetrical shoulders, and crude flaking.

Dimensions:

length: 36-60 mm.
width: 25-34 mm.
thickness: 7-9 mm.
length/width ratio: 1.3:1 to 2.5:1

Blade: Ovate or contracting ovate in outline and markedly asymmetrical. Lateral edges straight or excurvate. Maximum thickness is between or just above the shoulders. Transverse cross-section is asymmetrically biconvex.

Haft Elements:

Shoulders: Weakly developed and asymmetrical. Usually broadly rounded, sometimes absent on one side of the point. A broad obtuse angle is formed between the upper subelement of the haft and the blade.

Stem: Short to moderate in length and very broad. Expands to varying degrees towards the base. A broadly rounded obtuse angle is produced by articulation of the upper and lower subelements of the haft.

Base: Straight or very slightly concave in outline, and nearly as wide as the shoulders. Orientation is oblique in some specimens. Zones of juncture generally rounded.

Workmanship: Flaking is crude, with deep and coarse primary flake scars. Lateral edges are irregular and lack marginal re-touch. Secondary flaking is present on the bases of some specimens. No grinding of the base or haft elements.

Material: Argillite and rhyolite chert.

Number of Specimens: 7

Chronology and Cultural Affiliation: The points of this category conform well to the description presented by Ritchie (1961:51) of the Steubenville Stemmed type. Until recently, the temporal context of this type has been very ambiguous. Mayer-Oakes suggests an Early Archaic date, while Dragoo favors and affiliation with the Late Archaic (Ritchie 1961:51). Funk (1968), however, has reported that points conforming to the Steubenville Stemmed type constitute a dominant style in the recently defined late Middle Woodland Fox Creek complex of New York. This provenience is based on the unequivocal association of the points with ceramic materials at the Westheimer and Fredenburg sites. Radiocarbon dates of AD

410 +/- 80 and AD 450 +/- 80 were obtained from the Westheimer Site, while the Medenburg Site yielded a date of AD 360 +/- 100 years (ibid:4). According to Funk, "The ceramics evince relatively late connections with the Middle Woodland...but represent a developmental stage preceding the Kipp Island styles"(ibid:3).

References: Funk 1968:5 (Plate 4:19); Kaeser 1968:9 (lower group:7; upper group:6, 10).

Type 32 (Plate:23)

General Description: Large, thin, broad stemmed point with weakly developed shoulders.

Dimensions:

Length: 58 mm.
width: 32 mm.
thickness: 6 mm.
length/width ratio: 1.5:1

Blade: Reconstruction of the broken point suggests a broad and symmetrical blade that is ovate in outline. Transverse cross-section was biconvex.

Haft Elements:

Shoulders: Symmetrical, very weak in development, and broadly rounded.
Stem: Extremely broad and expanding slightly towards the base. Upper and lower subelements of the haft join in a broad, rounded, very shallow oblique angle.

Base: Concave in outline and symmetrical, and equal to the shoulders in width. Zones of juncture are angular.

Workmanship: Skillfully percussion flaked, with flat, carefully placed primary flake scars. Base is slightly thinned, and the edges of the stem and base are evenly retouched and exhibit a slight degree of grinding.

Material: Dark brown chert of poor quality.

Number of Specimens: 1

Chronology and Cultural Affiliation: Although this stem fragment is more symmetrical and more skillfully flaked than the points of Type 31, it readily conforms to Ritchie's (1961:51) description of the Steubenville Stemmed type. A late Middle Woodland provenience is suggested for this specimen in view of the demonstrated association of like forms with Middle Woodland ceramics at the Westheimer and Medenburg sites

in New York; where they are a diagnostic trait of the recently defined Fox Creek complex (Fox Creek Stemmed) (Funk 1968:1-7).

References: Funk 1968:5 (Plate 4:4,6); Ritchie 1961:109 (Plate 30:3).

Remarks: Although both this specimen and Type 31 derive from the same (Fox Creek) complex, their separate taxonomic status is maintained because of significant differences in material, quality of workmanship, dimensions, and configuration of the haft/base complex.

Type 33 (not illustrated)

General Description: Medium sized; relatively thin and narrow, corner-removed point.

Dimensions:

length: 38-60 mm.
width: 22-24 mm.
thickness: 7-9 mm.
length/width ratio: 1.6:1 to 2.7:1

Blade: Long and relatively narrow. Ovate in outline and asymmetrical. Transverse cross-section is asymmetrical biconvex. Maximum thickness is across the shoulders.

Haft Elements:

Shoulders: Very weak and asymmetrical in development. Rounded or angular. Blade and upper sub-element of the haft form an oblique angle.

Stem: Shallow removal of the basal corners form a very broad asymmetrical stem which expands towards the base. Upper and lower sub-elements of the haft articulate in rounded zones of juncture.

Base: Slightly convex in outline. Zones of juncture are slightly rounded. Width approaches that of the shoulders.

Workmanship: Flaking is bold and discontinuous, with large, deep, expanding, primary chipping scars on both faces of the blade. A weakly developed median ridge is present on one face. Lateral edges are slightly irregular, with no marginal re-touch. Basal thinning is present. No grinding of the base or notches.

Material: Low-grade brown chert.

Number of Specimens: 1

Chronology and Cultural Affiliation: A search of the literature failed to produce an established type that included a really comparable specimen. However, affinity to the Chesser Notched type defined by Prufer (1967:34) is suspected. This type appears to be associated with early Late Woodland occupation in Ohio (ibid:21,22,54). Affinity to late Middle Woodland styles is also possible.

Type 34 (Plate 1:23)

General Description: Narrow, thick, stemmed points of medium length.

Dimensions:

length: 36-51 mm.
width: 18-20 mm.
thickness: 7-9 mm.
length/width ratio: 1.9:1 to 2.5:1

Blade: Long and slender, symmetrically or asymmetrically ovate in outline. Maximum thickness occurs between the shoulders. Transverse cross-section is asymmetrically biconvex.

Haft Elements:

Shoulders: Weakly-developed. Slightly rounded and symmetrical on some specimens. Broadly rounded and sloping and asymmetrical on the others. Articulation of upper sub-element of the haft with the blade forms and obtuse angle.
Stem: Broad, expanding towards the base. Upper and lower sub-elements of the haft intersect in broadly rounded obtuse angle.

Base: Straight or slightly convex in outline and symmetrical. Equal to the shoulders in width. Zones of juncture are angular.

Workmanship: Quality of workmanship is variable. On four specimens primary flaking is crude. Lateral edges are irregular and exhibit little secondary flaking. Basal edges are even. The remaining point exhibits flaking of high quality, with flat, expanding, regularly-placed primary flake scars and continuous retouch of the lateral edges. A median ridge bisects one face of the blade, and the base is ground.

Material: Grey argillite; Bald Eagle jasper; high grade red jasper of unknown origin; black flint with grey white inclusions.

Number of Specimens: 5

Chronology and Cultural Affiliation: These specimens conform well both dimensionally and morphologically to the Chesser Notched type defined by Prufer (1967:21). Prufer assigns this type to a Late Woodland context at the Chesser Cave Site in southeastern Ohio where it constitutes a dominant point type of the Late Woodland Scioto Tradition. He notes the occurrence of very similar points in Late Middle Woodland contexts at other sites in Ohio. Shane and Murphy (1967:342) report a Late Woodland provenience for the Chesser Notched type at the Shaw Rock Shelter in the Hocking Valley of Ohio. At the Workman Site, Type 34 is provisionally assigned to the early Late Woodland period.

References: Prufer and McKenzie 1967:54 (Fig. 5, N-R); 324 (Fig. 5); 355 (Fig. 5).

Type 35 (Plate 2:3)

General Description: Small, broad, moderately thick side-notched points.

Dimensions:

length: 20-42 mm.
width: 17-26 mm.
thickness: 5-9 mm.
length/width ratio: 1.2:1 to 1.9:1

Blade: Broad, asymmetrical and ovate in outline. Transverse cross-section is symmetrically or asymmetrically biconvex. Maximum thickness is across the shoulders.

Haft Elements:

Shoulders: Development is weak to moderate, and usually asymmetrical. Rounded on most specimens, occasionally angular. Articulation of blade and upper sub-element of the haft usually forms an oblique angle, but occasionally the angle is acute in the more deeply notched specimens.

Stem: Short and very broad. Notches are shallow to medium in depth. Expands sharply towards the base. Upper and lower sub-elements of the haft usually form an oblique angle.

Base: Straight or slightly convex. Zones of juncture usually rounded, but sometimes angular. Very broad, equalling the width of the shoulders on some specimens.

Workmanship: The quality of the flaking is variable. Some points are crudely chipped, with large, deep flake scars and irregular lateral edges having little or no retouch. Other specimens are more skillfully made, with small, shallow, regularly-placed flake scars and fairly continuous retouch of the base and lateral edges. No grinding of the base or haft elements.

Material: Black chalcedony; tan chert; low-grade brown chert.

Number of Specimens: 9

Chronology and Cultural Affiliation: Although these points in some ways resemble the Late Archaic Brewerton Corner-Notched point (Ritchie 1961:19), similarity to points of the Middle Woodland (Prufer 1967:323) and to the Late Woodland Chesser Notched type (Prufer 1967:54, 324) is also noted. Some of the specimens are reworked into hafted scrapers which are nearly identical to an illustrated example of Middle Woodland affiliation (Shane and Murphy 1967:355). Although Type 35 may contain some specimens of Late Archaic origin, most of the specimens are considered to be of late Middle to early Late Woodland affiliation.

Type 36 (Plate 1:14)

General Description: Medium-sized, moderately thick, narrow, side-notched points.

Dimensions:

length: 45-47 mm.

width: 17-20 mm.

thickness: 7-8 mm.

length/width ratio: 2.3:1 to 2.6:1

Blade: Long and narrow, symmetrically ovate in outline, with slightly excurvate lateral edges. Maximum thickness is about a third of the distance above the shoulders. Transverse cross-section is asymmetrically biconvex.

Haft Elements:

Shoulders: Weak in development and broadly rounded, with an obtuse angle formed between the blade and the upper sub-element of the haft.

Stem: Short and broad, expanding sharply towards the base.

Side-notches are shallow, with the articulation of the upper

and lower sub-elements of the haft producing an oblique angle.

Base: Very slightly concave in outline, with rounded or squared corners. Approximately equal to the shoulders in width.

Workmanship: Flaking is very rough in appearance and irregular, with little or no retouch along the lateral edges.

Material: Mottled grey chert; low-grade grey chert.

Number of Specimens: 2

Chronology and Cultural Affiliation: The size, flaking quality, and morphology of these specimens appear to be virtually identical to those of a point that was found at the Erb Rock Shelter in Lancaster County, Pa. (Kent and Packard 1969:33 (Fig. 3, j)). Kent and Packard suggest an Early Woodland affiliation for the point because of its stratigraphic provenience and because similar points have been discovered elsewhere in association with Early Woodland pottery (e.g. at the Heck Rock Shelter and at the Sheep Rock Shelter).

References: Bebrich 1967:593-594 (Type 29); Kinsey 1958: 2-4).

Type 37 (Plate 1:18)

General Description: Large, stemmed points of medium thickness.

Dimensions:

length: 48-65 mm.

width: 31-34 mm.

thickness: 9-10 mm.

length/width ratio: 1.6:1 to 1.9:1

Blade: Ovate in outline, and asymmetrical. Maximum thickness is about a third of the distance above the shoulders. Transverse cross-section is asymmetrally biconvex.

Haft Elements:

Shoulders: Development is pronounced and asymmetrical.

Either rounded or angular in configuration. An obtuse angle is produced by the intersection of the blade with the upper sub-element of the haft.

Stem: Short and of medium width. Expands slightly towards the base. Upper and lower sub-elements of the haft articulate in a rounded right angle.

Base: Straight, with rounded zones of juncture. About half as broad as the shoulders.

Workmanship: Blade exhibits large, regular, shallow primary flake scars. Lateral edges are even, with careful marginal retouch. Basal edge on one point is irregular, while delicate retouch and thinning are present on the base of the other specimen. No grinding of the base or stem.

Material: Dark brown low-grade chert.

Number of Specimens: 2

Chronology and Cultural Affiliation: These points are believed to be a variant of the Perkiomen Broad Spear. The only significant difference noted between Type 37 and the specimens illustrated by Witthoft (1953:29-31) is the narrower blade width of the Workman Site points.

Reference: Witthoft 1953:29 (Plate I:46).

Type 38 (Plate 1:25)

General Description: Broad, thin, corner-notched point of medium size and thickness.

Dimensions:

length: 39 mm.
width: 23 mm.
thickness: 6 mm.
length/width ratio: 1.6:1

Blade: Broad and symmetrical, ovate in outline, with maximum thickness located between the shoulders. Transverse cross-section is biconvex and thin.

Haft Elements:

Shoulders: Prominent and well-developed. Angular configuration. Roughly horizontal in orientation, forming a right angle with the blade.
Stem: Short and moderately broad, slightly expanding. Articulation of upper and lower sub-elements of haft form a right angle. Relatively symmetrical.

Base: Broad and convex, with angular zones of juncture. Irregular in contour.

Workmanship: Skillfully chipped blade; with shallow primary flake scars. Irregular retouch along the base. Neither the base nor the notches are ground.

Material: Medium-grade grey chert.

Number of Specimens: 3

Chronology and Cultural Affiliation: A search of the literature failed to produce comparable specimens belonging to an established type. The configuration of the haft-base complex suggests a late Middle Woodland origin.

Type 39 (Plate 3:3)

General Description: Broad, medium-sized point having a long lobate stem.

Dimensions:

length: 42 mm.
width: 24 mm.
thickness: 8 mm.
length/width ratio: 1.75:1

Blade: Short, broad and strongly ovate in outline, with excurve lateral edges. Slightly asymmetrical. Maximum thickness is above the shoulders. Transverse cross-section is nearly plano-convex and is of medium thickness.

Haft Elements:

Shoulders: Weakly-developed and asymmetrical, sloping upward to form a broadly rounded or nearly angular obtuse angle with the blade.

Stem: Relatively broad and long, contracting to form a lobate outline.

Base: Deeply convex, nearly pointed in configuration. About one-half as wide as the shoulders.

Workmanship: Quality of flaking is slightly coarse. Placement of retouch scars along lateral, stem, and basal edges is somewhat uneven. No trace of grinding on the edges of the stem or base.

Material: Dark grey chert of low grade.

Number of Specimens: 1

Chronology and Cultural Affiliation: This specimen unmistakably corresponds to the lobate-stemmed point that is characteristic of the Early Woodland Adena Culture (Ritchie 1961:12,13), which has been radiocarbon dated between 800 BC and 800 AD. Ritchie notes that most of the New York specimens often are smaller than the Adena points of the Upper Ohio Valley, and that most are made of local lithic materials rather than Flint Ridge chalcedony. He suggests that most of the New York specimens may represent local copies of introduced Adena points. This suggestion may be valid for the Workman Site specimen also. The Workman Site specimen is made of poor quality material, and the length falls within the lower range given for the New York points. The discovery of this point lends support for the proposed affiliation of Type 26 with the Adena Culture.

References: Ritchie 1961:61 (Plate 1, no. 5).

Type 40 (Plate 2:15,16)

General Description: Thick, crudely-flaked triangular points of medium size.

Dimensions:

length: 18-39 mm.
width: 14-31 mm.
thickness: 6-11 mm.
length/width ratio: 1:1 to 2.3:1

Blade: Triangular, ranging in width from slender to equilateral, with straight, slightly excurvate or incurvate lateral edges. Usually asymmetrical. Transverse cross-section is asymmetrically biconvex, plano-convex, plano-triangular, or bitriangular.

Base: Concave, straight, or slightly convex in outline, with angular or rounded zones of juncture. Frequently asymmetrical.

Workmanship: Crudely percussion-flaked with minimal retouch of the basal and lateral edges. Prominent median ridge frequently bisects one or both faces to form a pronounced hump. Coarse lateral beveling and incurvate lateral edges on two specimens indicates utilization as drills.

Material: Red jasper and cherts of poor quality.

Number of Specimens: 10

Chronology and Cultural Affiliation: Late Woodland. This point type is not defined elsewhere in the literature.

Type 41 (Plate 2:17, 18)

General Description: Small to large-sized triangular points having wide isosceles or equilateral blades and concave bases.

Dimensions:

length: 22-47 mm.
width: 20-33 mm.
thickness: 3-7 mm.
length/width ratio: 1:1 to 1.4:1

Blade: Broadly isosceles to equilateral in outline. Lateral edges typically straight but occasionally slightly excurve or incurvate. Thin, biconvex to biplane in transverse cross-section.

Base: Concave, triangular-concave, or excurve-concave (rarely) in outline. Frequently with a high degree of curvature. Occasionally asymmetrical. Proximal zones of juncture are angular and sharp, or less frequently rounded.

Workmanship: Flaking is good to excellent in quality, with fine, regular retouch of lateral and basal edges. Proximal zones of juncture often form extremely sharp and delicate "barbs".

Material: Black and grey chert of varying grades; white quartzite.

Number of Specimens: 17

Chronology and Cultural Affiliation: Same as Type 37 of Sheep Rock Shelter. Affinities with Owasco and Clemson's Island. Early Late Woodland in date.

Type 42 (Plate 2:19)

General Description: Broad, medium-sized triangular points, generally having a straight base.

Dimensions:

length: 23-36 mm.
width: 21-26 mm.
thickness: 4-6 mm.
length/width ratio: 1:1 to 1.5:1

Blade: Outline forms broad isosceles or equilateral triangle. Occasionally asymmetrical. Lateral edges straight or (rarely) incurvate. Thin and biconvex to nearly biplano in transverse cross-section.

Base: Typically straight and symmetrical, but occasionally slightly concave. Proximal zones of juncture are sharp and angular or rounded.

Workmanship: Pressure flaking is slightly coarse in quality, with regular to mildly irregular retouch of lateral edges. Some points faintly serrated.

Material: Grey and black cherts of poor quality.

Number of Specimens: 18

Chronology and Cultural Affiliation: Same as Sheep Rock Shelter Type 38. Shenks Ferry cultural affiliation. Late Late Woodland period.

Type 43 (Plate 2:20)

General Description: Very small, thin, delicately flaked triangular points, having slender isosceles to equilateral blades.

Dimensions:

length: 16-30 mm.
width: 11-17 mm.
thickness: 3-5 mm.
length/width ratio: 1:1 to 1.7:1

Blade: Narrow isosceles to equilateral in outline, often asymmetrical. Lateral edges straight or occasionally excurvate or incurvate. Very thin, generally biplano in transverse cross-section, although one blade is plano-triangular.

Base: Straight, concave, or excurvate-concave in outline. Often asymmetrical. With one exception, proximal zones of juncture are sharp and angular.

Workmanship: Very finely executed pressure flaking, with delicate and precise retouch of lateral edges. Very shallow side-notching of one specimen results in very delicate "eared" proximal zones of juncture.

Material: Black and grey flints; grey chert.

Number of Specimens: 10

Chronology and Cultural Affiliation: Same as Sheep Rock Shelter

Type 39. The sample has mixed affinities with Susquehannock and Hughs Site Complex point specimens. There appear to be two variants: a Susquehannock variant of normal dimensions, and a diminutive variant that corresponds well to specimens within the Hughs Site Complex of Maryland. This type therefore appears to be Protohistoric in date.

Type 44 (Plate 2:22)

General Description: Long, extremely slender, thin, triangular point.

Dimensions:

length: 51 mm.
width: 19 mm.
thickness: 6 mm.
length/width ratio: 2.7:1

Blade: Outline forms extremely narrow isosceles triangle. Symmetrical, with straight lateral edges. Thin and biconvex in transverse cross-section.

Base: Very slightly concave in outline, and symmetrical. Angular proximal zones of juncture.

Workmanship: Skillfully pressure-flaked, with continuous fine retouch of the lateral edges and delicate thinning of the base.

Material: Onondaga flint.

Number of Specimens: 1

Chronology and Cultural Affiliation: This type is not defined in the literature. It appears to be an unusual form that occurs in very low frequencies. Morphology and dimensions indicate that it dates to the Late Woodland period.

DISCUSSION

The primary objective of this chapter is to provide a somewhat thorough analysis of the projectile points in order to secure some control over chronology and cultural affiliations for both the preceramic periods and the later Woodland and Proto-Historic periods. Cross dating was relied on exclusively for this purpose, since no valid cultural stratigraphy was present at the Workman Site. The cross-dating analysis was substantially aided by the fine stratigraphic controls for projectile points provided by the Sheep Rock Shelter Site, only a short distance away.

A summary of projectile point chronology and cultural affiliations is given in Table 1. A frequency distribution of points by type and period is provided in Figure 1. Using this data, we have been able to prepare a histogram (Figure 2) that reveals the occupational history of the Workman Site.

The Workman Site was occupied sometime during each of the principle culture historical periods of Central Pennsylvania, beginning with the Early Archaic. The two major occupational episodes are clearly seen to be Late Archaic and late Late Woodland. Points dating to the late Late Woodland tend to cluster in association with the post hole features that Kolb and Huner have interpreted as indicating the location of dwellings.

The balance of the lithic inventory from the site remains to be fully analyzed. A cursory review of the materials, however, indicates that they denote a wide range of activities.

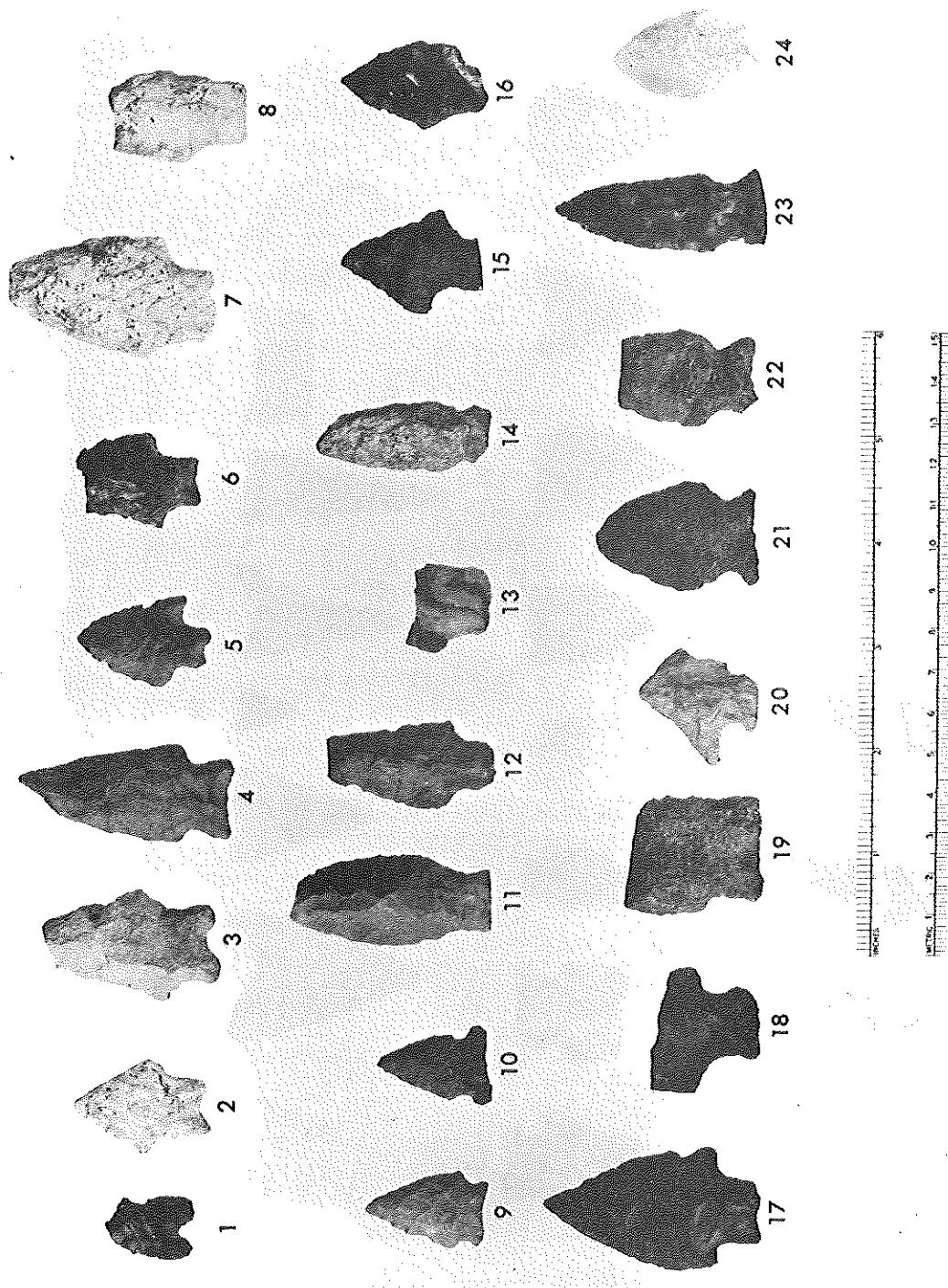


PLATE 1

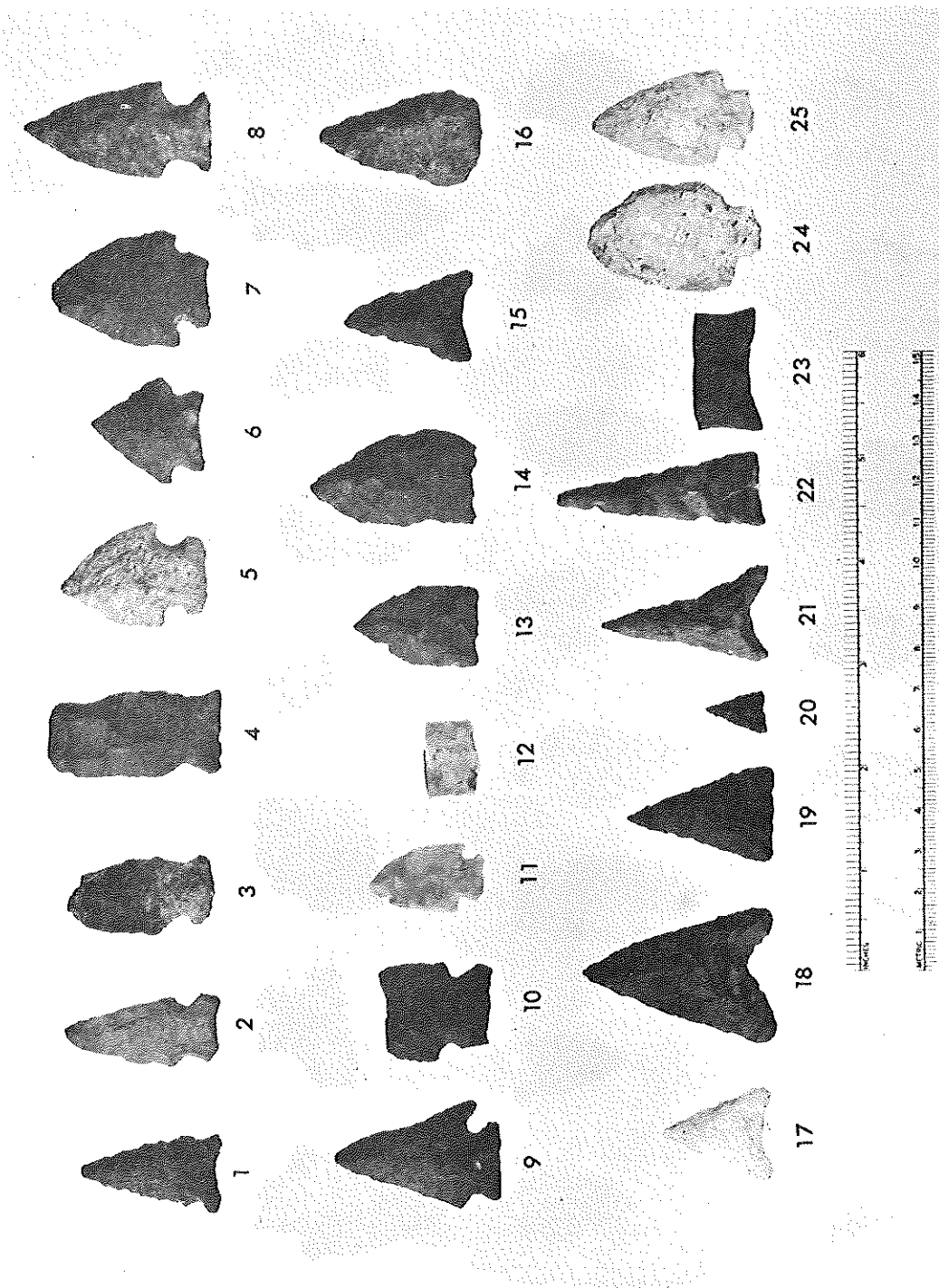
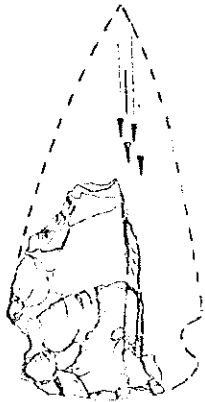
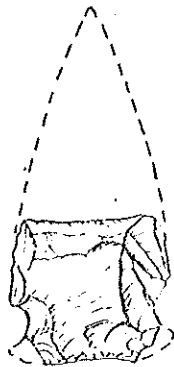


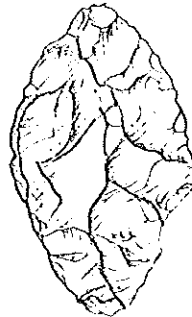
PLATE 2



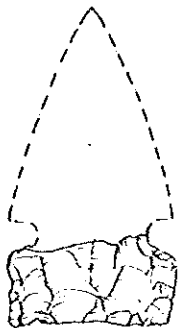
1



2



3



4



5

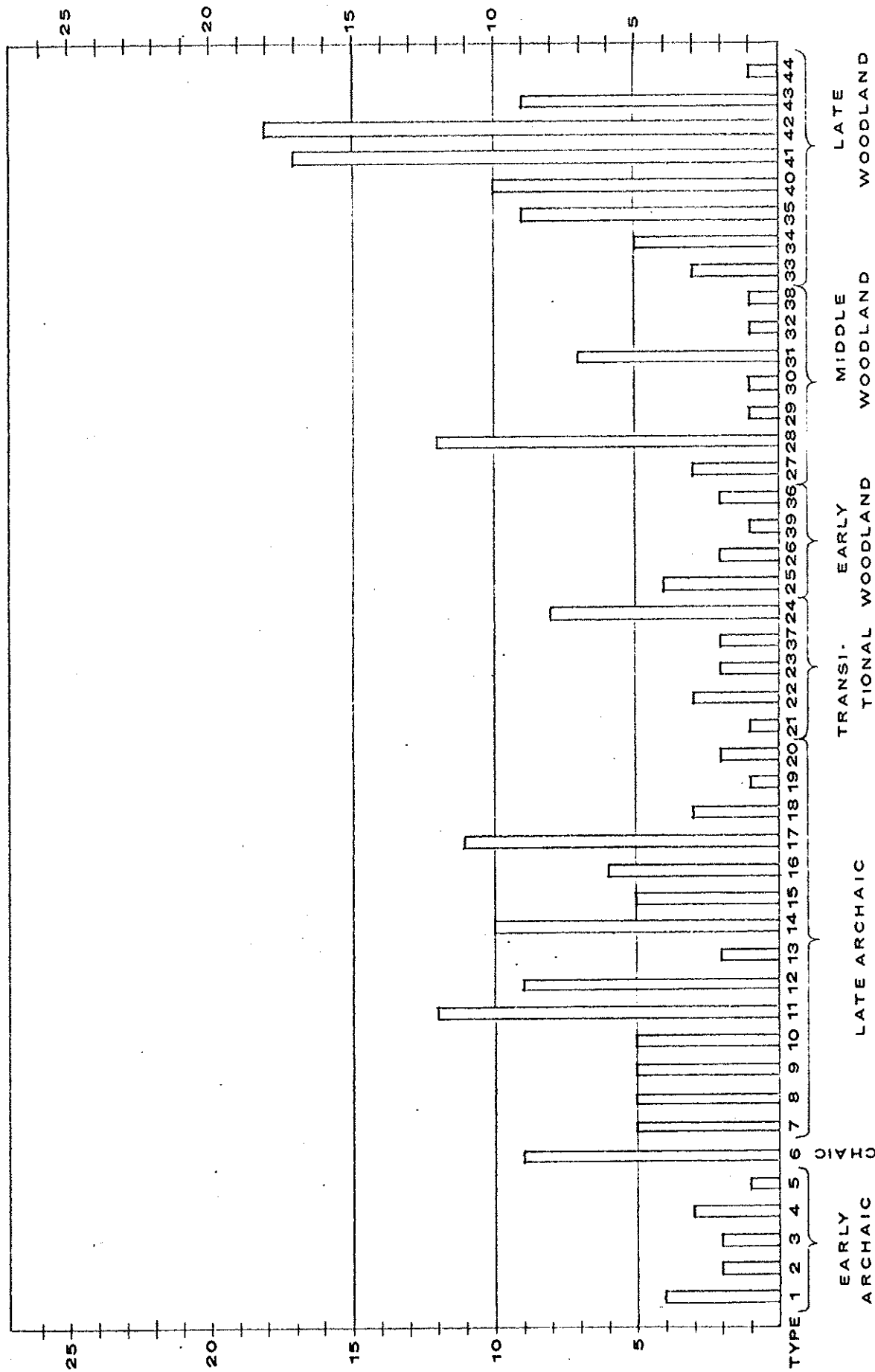


FIG. 1 FREQUENCY DISTRIBUTION OF POINTS BY TYPE AND PERIOD

FIG. 2 FREQUENCY DISTRIBUTION OF POINTS BY PERIOD

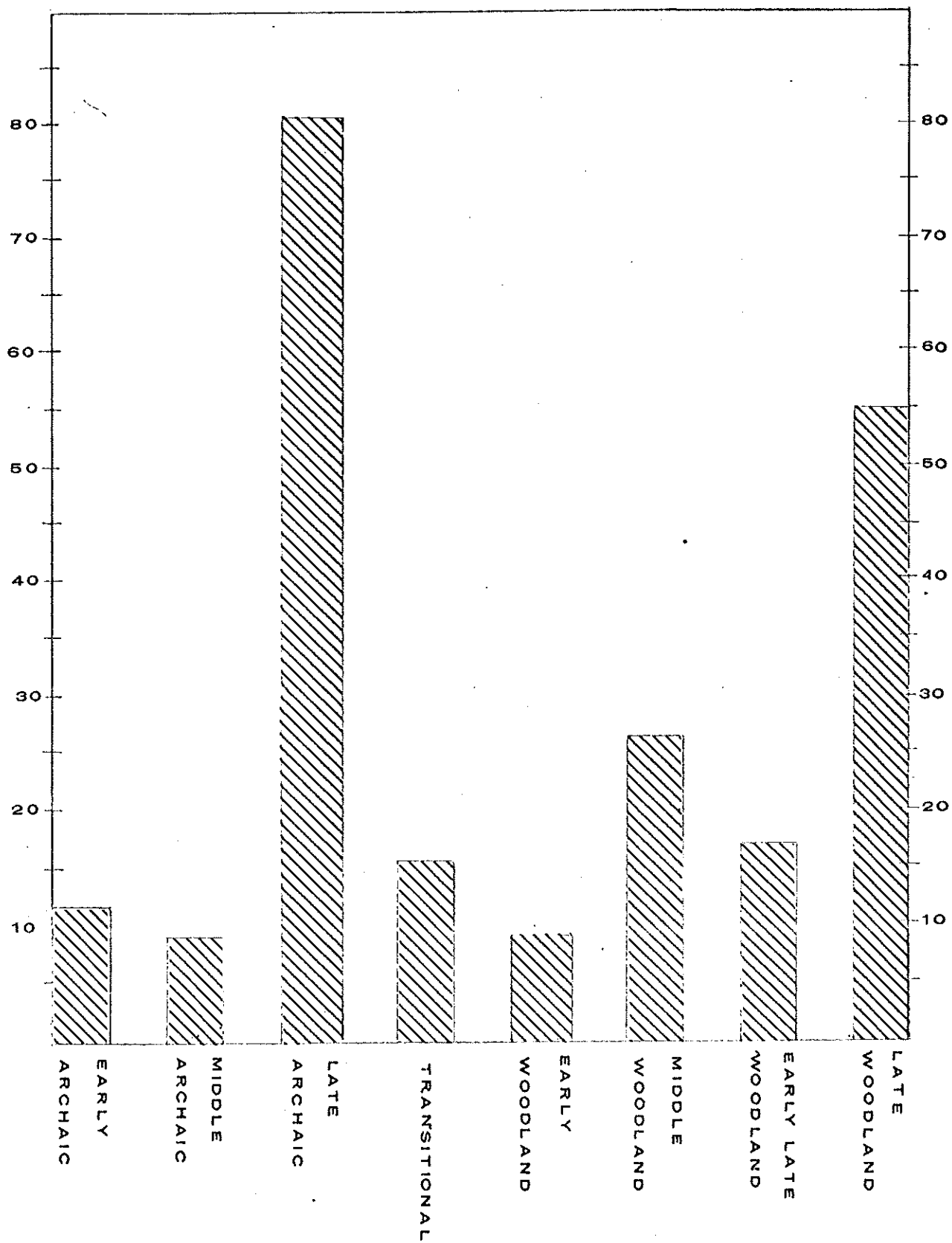


TABLE 1: SUMMARY OF PROJECTILE JOINT CHRONOLOGY AND CULTURAL AFFILIATIONS

Workman Site Type #	Sheep Rock Shelter Type #	Period	Cultural Affinity
1	1	Early Archaic	Kirk Corner-Notched
2	7	Early Archaic	Le Croy
3		Early Archaic	Undefined
4		Early Archaic	Kanawha Stemmed
5		Early Archaic	Stanly Stemmed
6	2	Middle Archaic	Raystown Stemmed
7		Late Archaic	Lamoka
8		Late Archaic	Lamoka
9		Late Archaic	Lamoka
10		Late Archaic	Brewerton Corner-Notched
11	5/8	Late Archaic	Brewerton Side/Corner- Notched (small)
12	9/10	Late Archaic	Brewerton Side/Eared- Notched (small)
13		Late Archaic	Brewerton Side-Notched
14	13	Late Archaic	Brewerton Side-Notched
15		Late Archaic	Brewerton Eared-Notched
16		Late Archaic	Brewerton Eared-Notched
17	22	Late Archaic	Squibnock (Wading River)
18		Late Archaic	Squibnock Stemmed
19	22	Late Archaic	Squibnock (Wading River)
20		Terminal Archaic	Savannah River
21	28	Transitional	Susquehanna Broadspear
22	25	Transitional	Susquehanna Broadspear
23		Transitional	Perkiomen Broadspear
24		Transitional	Orient Fishtail
25	26	Early Woodland	Meadowood
26		Early Woodland	Adena
27	46	late MW/early LW	Jack's Reef Corner-Notched
28		late MW/early LW	Jack's Reef Pentagonal
29		late MW/early LW	Jack's Reef Corner-Notched
30		Early Woodland	Meadowood
31	45	late Middle Woodland	Fox Creek
32	45	late Middle Woodland	Fox Creek
33		early Late Woodland	Chesser-Notched
34		early Late Woodland	Chesser-Notched
35		M/L Woodland	Chesser-Notched?
36	29	Early Woodland	Undefined (Juniata stemmed?)
37		Transitional	Perkiomen Broadspear
38		Middle Woodland	Undefined
39		Early Woodland	Adena
40		Late Woodland	Undefined
41	37	early Late Woodland	Owasco/Clemson's Island
42	38	late Late Woodland	Shenk's Ferry
43	39	Protohistoric	Mixed (Susquehannock, Hughs Site Complex)
44		Late Woodland	Undefined

Appendix A

POINT ATTRIBUTE LIST

This appendix presents the attribute list used for the description of the projectile point types enumerated earlier in this chapter. It represents a reworking of the list used by Bebrich for the analysis of projectile points from the Sheep Rock Shelter (1967:635-652). Some of the attribute classes contained in the earlier list have been ignored; others have been modified in order to further objectify the list, and to reduce ambiguity within and between attribute classes.

An entirely new attribute sub-system has been developed for description of the haft element; its sub-elements and their articulation with the base and/or tang and blade elements. A variety of other classificatory, metrical and technological attribute classes have also been added under the titles: blank, characterization and functional classification.

In the list below each attribute class is defined by alternative discrete attributes, which are numerically coded. Preceding each attribute class in this list is a set of numbers enclosed by parentheses which specify the card and card column numbers in which an attribute code may be found in Appendix B. For example, Field Catalog Number occupies columns 2-5 of machine punch cards 1 and 2; Provenience occupies columns 7-13 of card 1 only.

Attribute classes were selected and defined in such a way as (1) to minimize data overlap (codifying for two or more attribute classes which defined essentially the same typological characteristic); (2) to maximize the possibility of reconstructing uncoded metrical characteristics from primary coded data; (3) to maximize objectivity, relevance, and completeness within the allotted space; and (4) to accommodate the wide range of morphological variability represented by projectile points from the Sheep Rock Shelter and the Workman Site.

In terms of the present study the list has functioned in two ways: (1) to provide comparable objective criteria for the written description of types and (2) to provide the unique characterization of each projectile point regardless of type. As similar data are collected elsewhere in the region they may provide the basis for the investigation of such problems as the evolution of style and subregionalization in stylistic variation indicative of corporate social groups.

For two reasons the data obtained through application of the list are incapable of yielding a statistically derived typology of the level of specificity presetned in this chapter:

- (1) comparable data are lacking in the literature of those areas of the Eastern United States which are significant for this study.

- (2) the sample size of the Sheep Rock Shelter collection of points is insufficient to generate the recognized types.

As a result, the methodology used for the recognition of types followed a simple but time consuming procedure: look-a-like visual comparison of the Workman Site specimens with established types illustrated and defined in the literature. Conscious use was made of the criteria set forth in the attribute list of this appendix. In effect this procedure is a subjective way of increasing sample size sufficient to permit classification of the described level of specificity (ideally so as to account for all of the points in the collection). This procedure is subjective to the extent that criteria not included in the attribute list are used in the comparison. On the other hand, it insures inclusion of relevant criteria which may not be included in the list. An effort has been made to define these criteria whenever used in the definitions of types.

Point Morphology (Figs. 1-3)

Stemmed-notched points are viewed in terms of three major morphological areas and edges: the blade, the haft, and the base. The blade constitutes those edges and surfaces of a point between the medial zones of juncture and the tip with the exception of the upper sub-element of the haft (see Figs. 2a and 2b). The haft constitutes those areas and edges between the blade and the base. Included here are the upper sub-element of the haft (the shoulder), the lower sub-element of the haft (forming the lower edge of the notch or lateral edge of the tang), the intermediate sub-element of the haft (if the point is side-notched), all zones of juncture along those edges from the distal to the proximal zones, and all surfaces between these edges and zones (or what is commonly referred to as the stem or tang). The base is the lateral edge connecting the proximal zones of juncture.

In this context the phrase "zones of juncture" is used in place of Bindord's "points of juncture" (1963:196-197) because the edges on a projectile point often connect in an arc rather than a point, as his terminology would imply. This distinction between point and arc is known to have typological significance and the term "zone" is thus favored over "point." In all other respects, however, the concepts of juncture as used here are identical to those of Binford. Where measurements are concerned distances between zones of juncture are taken from the midpoints of arcs, as shown in Fig. 3.

The concept of haft element as used here differs from Bindord's in that it is inclusive of what Binford defines as the haft and tang elements and the modified sub-element of the tang

POINT ANATOMY

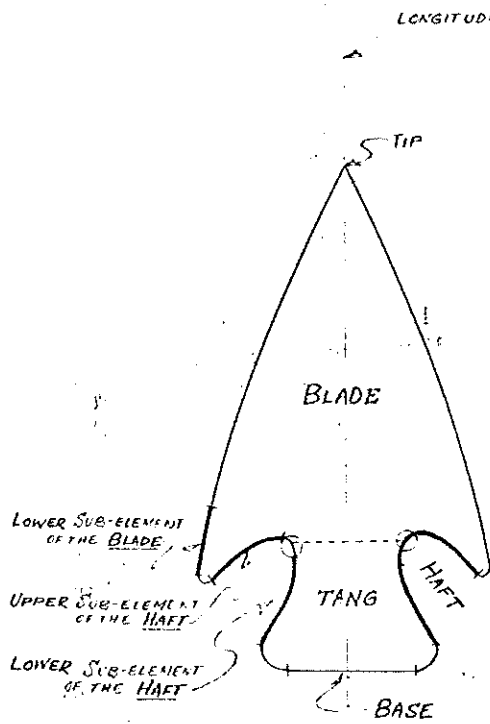


Fig. 1a: CORNER-NOTCHED POINT

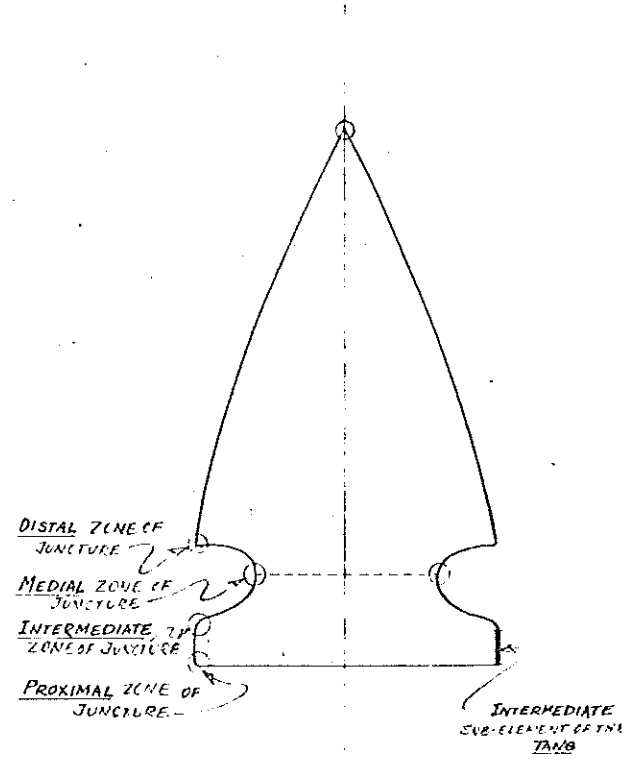


Fig. 1b: SIDE-NOTCHED POINT

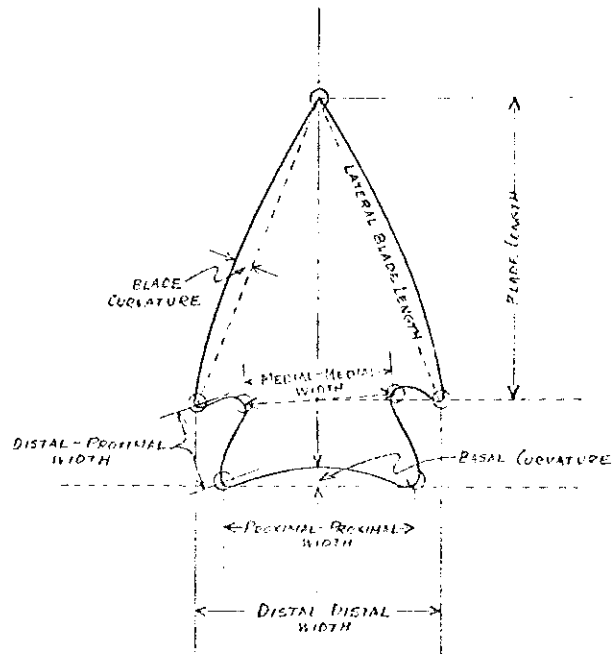


Fig. 2: METRIC ATTRIBUTES

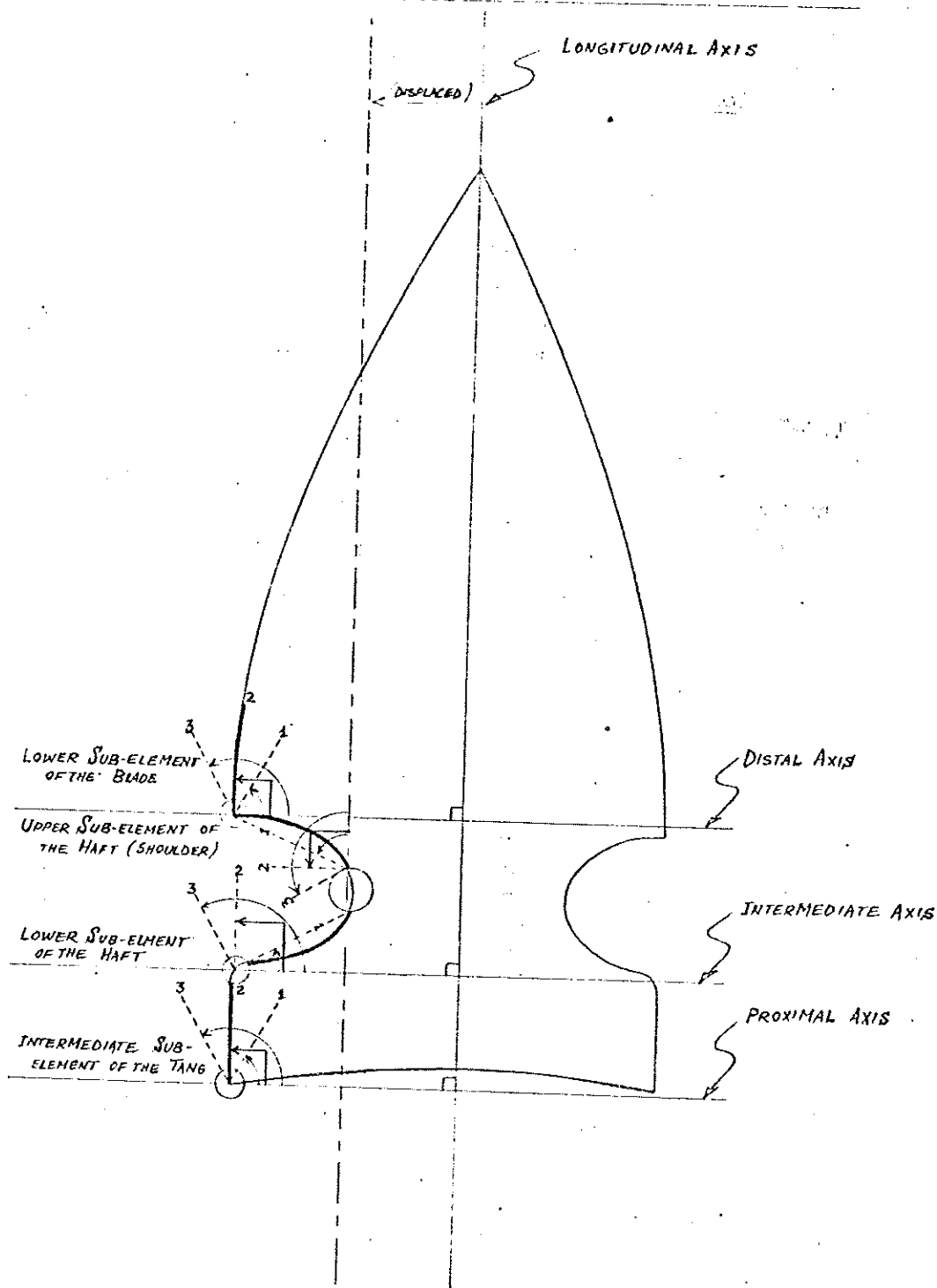
(here termed the upper and lower sub-elements of the haft), and the unmodified sub-element of the tang (here termed the intermediate sub-element of the haft) (Ibid.:197-198).

As used here, the upper sub-element of the haft is the lateral edge joining the distal and medial zones of juncture (see Fib. 2b). In a similar manner, the lower sub-element of the haft joins the medial to the intermediate as proximal zones of juncture depending on the presence/absence of an intermediate sub-element when absent (as most frequently happens) the medial and proximal zones join directly.

Most of the stylistic variation manifested by stemmed-notched points is the product of formal variation in the configuration of the haft-base complex, the combination of formal attributes characterizing the haft and base elements.

Triangular points lack the complicating features associated with the haft-base complex. In effect they constitutes only the blade and base elements and proximal zones of juncture of these points and are therefore relatively simple in formal content.

Fig. 3 ORIENTATION AND ARTICULATION OF SUB-ELEMENTS OF THE
BLADE, HAFT AND TANG



LEGEND

- ZONE OF ARTICULATION
- FORMAL SUB ELEMENT
- HYPOTHETICAL ORIENTATION (1,2,3)

POINT ATTRIBUTE LIST

1. Identification

(1:1) Collection Number: each site collection is given a unique number

Code

6 - 1966 Catalog

2 - 1967 Catalog

J - Juniata College Catalog

(1:2-5) Field Catalog Number: catalog number assigned by original excavator.

2. Provenience

(1:7-13) Horizontal: excavation unit designation (grid square, etc.).

3. Blank Characterization

(1:28) Blank Class

Code

0 - Indeterminate

1 - Flake (tool prepared on a variably shaped flake)

2 - Macro Blade (tool prepared on a large rectangular, parallel-sided flake)

3 - Micro Blade (tool prepared on blades struck from a conical core)

4 - Biface (tool prepared on a bifacially prepared preform)

5 - Core (core tool)

(1:29-31) Length: maximum length measured along longitudinal axis (reconstructed for broken specimens).

(1:32-33) Width: maximum width.

(1:34-35) Thickness: maximum thickness.

(1:36-38) Weight: (measured for complete specimens only).

Blank Retouch

(1:39) Placement of Functional Retouch

Code

- 0 - None
- 1 - Bit Area Only
- 2 - Haft Area Only
- 3 - Bit and Haft Areas

(1:40) Placement of Structural/Stylistic Retouch

Code

- 0 - Indeterminate
- 1 - Unilateral-Unifacial
Marginal Retouch
- 2 - Unilateral-Bifacial
Marginal Retouch
- 3 - Bilateral-Unifacial
Marginal Retouch
- 4 - Alternating Faces
Marginal Retouch
- 5 - Bilateral-Bifacial
Marginal Retouch
- 6 - Bifacial (systematic
retouch on both faces,
including 5)

4. Functional Classification of the Tool

(1:41)

Code

- 0 - Indeterminate
- 1 - Simple-Single Bit-Unhafted (one
function-one bit)
- 2 - Simple-Multiple Bit-Unhafted (one
function-two or more bits)
- 3 - Composite-Single Bit-Unhafted (two
or more functions-same bit)
- 4 - Composite-Multiple Bit-Unhafted (two
or more functions-two or more bits)
- 5 - Simple-Single Bit-Hafted (same as 1
above)
- 6 - Simple-Multiple Bit-Hafted (same as 2
above)
- 7 - Composite-Single Bit-Hafted (same as 3
above)
- 8 - Composite-Multiple Bit-Hafted (same as
4 above)
- 9 - Composite-Multiple Bit (Sequential)-
Hafted (tools of this class have been
sequentially modified to serve two or
more functions, with each modification
involving the preparation of a new
morphologically and functionally distinct
bit)

5. Functional Classification of the Working Area (Bit)

(1:42-43)

Code

- 0 - Indeterminate
- 1 - Piercing (projectile point)
- 2 - Punching (perforator)
- 3 - Drilling (drill)
- 4 - Conical Scraping (concave scraping bit)
- 5 - Plane Scraping (straight scraping bit)
- 6 - Rasping (convex scraping bit)
- 7 - Incising (burin, graver)
- 8 - Sawing (denticulate)
- 9 - Chopping (heavy duty cutting bit-axe, celt, adze)
- 10 - Hammering (dense, blunt, abraded bit)
- 11 - Soft Cutting (no edge abrasion)
- 12 - Hard Cutting (edge abrasion through bifacial chipping and/or grinding)
- 13 - Indeterminate Cutting
- 14 - Indeterminate Cutting and/or Piercing
- 15 - Chisel

6. Cross Reference:

(1:44-45) In cases where it is necessary to code an artifact twice in order to fully describe a tool's having multiple bits or composite functions, this field is used to indicate the functional class of the bit under observation. Thus, a projectile point reused as a drill would be coded as a penetrating tool and would be cross-referenced to a drilling bit. The blank is coded for a second time with different bit attribute observations.

7. Typology:

(1:46-47) The number given to each type described in this chapter.

8. Point Characterization

Blade Element:

(1:48-49) Medial Length: the distance along the longitudinal axis from the tip to a line joining the medial zones of juncture (Fig. 2)

Code

- 00 - Indeterminate
- 01-99 - mm

(1:50-51) Lateral Length: the distance along an imaginary line connecting the tip and the distal zone of juncture (Fig. 2)

Code

00 - Indeterminate

01-99 - mm

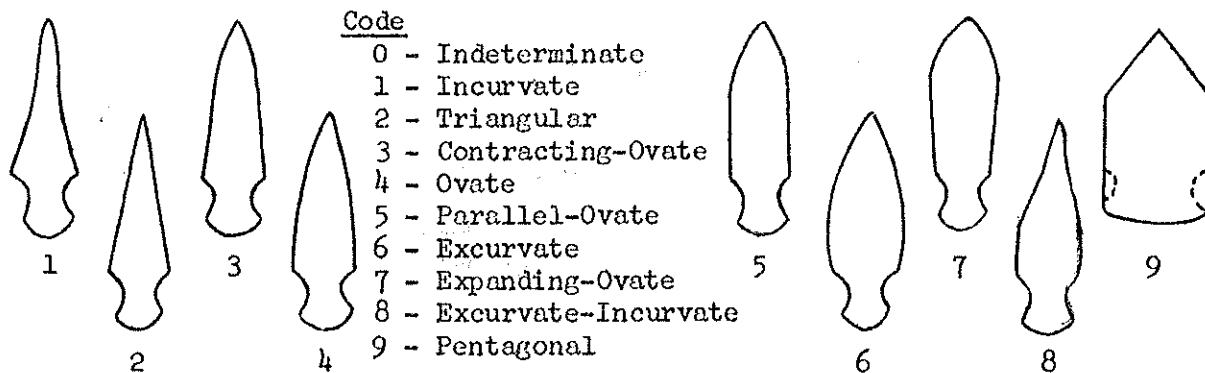
(1:52-53) Curvature: the maximum perpendicular distance between the lateral edge of the blade and an imaginary straight line connecting the tip and the distal zone of juncture (or proximal zone if the two are coincidental) (Fig. 2)

Code

0-8 - mm

9 - Indeterminate

(1:54) Blade Outline



(1:55) Outline of the Longitudinal Section of the Blade Element

Code

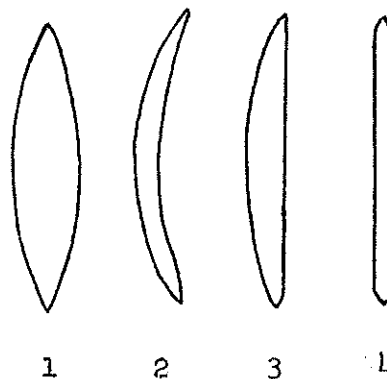
0 - Indeterminate

1 - Biconvex

2 - Concavo-Convex

3 - Plano-Convex

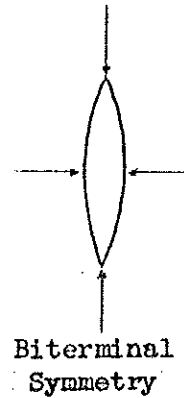
4 - Biplano



(1:56) Biterminal Symmetry

Code

- 0 - Indeterminate
- 1 - Symmetrical
- 2 - Asymmetrical

Bilateral
Symmetry

(1:57) Bilateral Symmetry

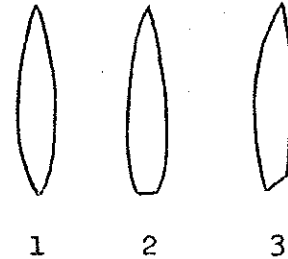
Code

- 0 - Indeterminate
- 1 - Symmetrical
- 2 - Asymmetrical

(1:58) Basal Truncation

Code

- 0 - Indeterminate
- 1 - Absent
- 2 - Present-Transverse
- 3 - Present-Oblique



1

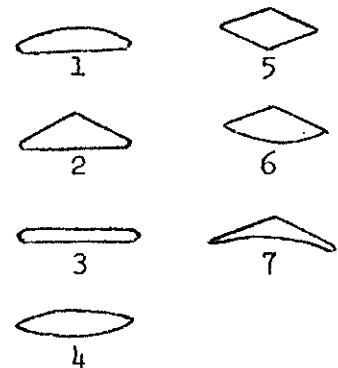
2

3

(1:59) Outline of the Transverse Section of the Blade Element

Code

- 0 - Indeterminate
- 1 - Plano-Convex
- 2 - Plano-Triangular
- 3 - Biplano
- 4 - Biconvex
- 5 - Bitriangular
- 6 - Convexo-Triangular
- 7 - Concavo - Triangular



1

5

2

6

3

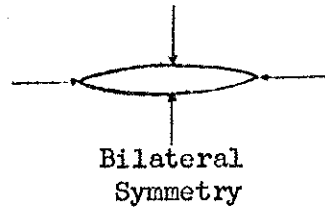
7

4

(1:60) Biterminal Symmetry

Code

- 0 - Indeterminate
- 1 - Symmetrical
- 2 - Asymmetrical



Biterminal
Symmetry

(1:61) Bilateral Symmetry

Code

- 0 - Indeterminate
- 1 - Symmetrical
- 2 - Asymmetrical

(1:63) Bilateral Symmetry of the Blade

Code

- 0 - Indeterminate
- 1 - Symmetrical
- 2 - Asymmetrical

(1:64) Edge Form of the Blade

Code

- 0 - Indeterminate
- 1 - Irregular
- 2 - Irregular-Even Chipped (opposite lateral edges)
- 3 - Irregular-Even Ground (opposite lateral edges)
- 4 - Irregular-Serrated (opposite lateral edges)
- 5 - Even-Chipped (both lateral edges)
- 6 - Even-Ground (both lateral edges)
- 7 - Serrated-Even Chipped (opposite lateral edges)
- 8 - Serrated-Even Ground (opposite lateral edges)
- 9 - Serrated (both lateral edges)

(1:65) Beveling of the Blade

Code

- 0 - Indeterminate
- 1 - Absent
- 2 - Present-Gentle
- 3 - Present-Steep

(1:67) Placement of Laterally Originating Secondary Retouch Scars

Code

- 0 - Indeterminate
- 1 - Unilateral-Unifacial
- 2 - Unilateral-Bifacial
- 3 - Bilateral-Unifacial
- 4 - Alternating Faces-Bilateral
- 5 - Bilateral-Bifacial

(1:68) Pattern of Laterally Originating Secondary Retouch Scars

Code

- 0 - Indeterminate
- 1 - Continuous
- 2 - Discontinuous

Haft Element (Fig. 3)

The haft element is characterized in terms of the form, articulation and orientation of four sub-elements: (1) lower sub-element of the blade; (2) upper sub-element of the haft (shoulder); (3) lower sub-element of the haft (proximal portion of the notch); and (4) intermediate sub-element.

Form is characterized in relation to the body of the point as concave (incurvate), straight and convex (excurvate). Articulation refers to the manner in which sub-elements join at a zone of juncture: point (angular articulation); arc (rounded articulation).

Orientation denotes the angle formed between a sub-element and a specified axis at a zone of juncture (see Fig. 3). Orientation of the lower sub-elements of the blade and haft and the intermediate sub-element is determined in relation to a transverse (distal, intermediate or proximal) axis. Orientation of the upper sub-element of the haft (shoulder) is determined in relation to an axis which passes through the medial zone of juncture and is parallel to the longitudinal axis. Three types of angles are differentiated: acute, perpendicular and oblique, corresponding to the angle formed by the respective sub-element and axis.

Form, Articulation and Orientation are coded for each sub-element as follows:

Form

Code

- 0 - Indeterminate
- 1 - Absent

- 2 - Concave
- 3 - Straight
- 4 - Convex

Articulation

Code

- 0 - Indeterminate
- 1 - Absent
- 2 - Point
- 3 - Arc

Orientation

Code

- 0 - Indeterminate
- 1 - Absent
- 2 - Acute
- 3 - Perpendicular
- 4 - Oblique

Data for these observations are recorded in the attribute listing of Appendix B as follows:

Lower Sub-element of Blade

- (1:69) Form
- (1:70) Articulation (with upper sub-element of haft if point is notched; with base if point is not notched.).
- (1:71) Orientation (with respect to distal transverse axis).

Upper Sub-element of Haft

- (1:72) Form
- (1:73) Articulation (with lower sub-element of haft).
- (1:74) Orientation (with respect to longitudinal axis).

Lower Sub-element of Haft

- (1:75) Form
- (1:76) Articulation (with intermediate sub-element if side-notched, with base if corner-notched).
- (1:77) Orientation (with respect to intermediate transverse axis).

Intermediate Sub-element of Tang

- (1:78) Form
- (1:79) Articulation (with base).
- (1:80) Orientation (with respect to proximal transverse axis).

(2:6) Symmetry of the Haft

Code

- Blank - Absent
- 0 - Indeterminate
- 1 - Symmetrical
- 2 - Asymmetrical

(2:7) Type of Retouch on the Haft Element

Code

- 0 - Indeterminate
- 1 - Single Scar Retouch
- 2 - Multiple Scar Retouch
- 3 - Both single and multiple scar retouch same haft elements.
- 4 - Both single and multiple scar retouch different haft elements.

(2:8) Preparation of the Haft Element

Code

- 0 - Indeterminate
- 1 - Obscuring lateral originating scars
- 2 - Obscuring basal originating scars
- 3 - Obscuring both lateral and basal scars
- 4 - Obscured by lateral originating scars
- 5 - Obscured by basal originating scars
- 6 - Obscured by both lateral and basal scars
- 7 - Obscuring lateral scars and obscured by basal originating scars
- 8 - Obscuring basal originating scars and obscured by lateral originating scars

(2:9) Placement of Haft Element Retouch

Code

- 0 - Indeterminate
- 1 - Unifacial-unilateral
- 2 - Unilateral-bifacial
- 3 - Bilateral-unifacial
- 4 - Alternating faces-bilateral
- 5 - Bilateral-bifacial

(2:10) Edge Form of the Haft Element

Code

- 0 - Indeterminate
- 1 - Irregular

- 2 - Irregular - even chipped (opposite lat. edges)
- 3 - Irregular - even ground (opposite lat. edges)
- 4 - Irregular - serrated (opposite lat. edges)
- 5 - Even chipped (both lateral edges)
- 6 - Even ground (both lateral edges)
- 7 - Serrated - even chipped (oppos. lat. edges)
- 8 - Serrated - even ground (oppos. lat. edges)
- 9 - Serrated (both lateral edges)

(2:11) Beveling of the Haft Element

Code

- 0 - Indeterminate
- 1 - Absent
- 2 - Present - gentle
- 3 - Present - steep

Dimensions of the Haft Element (in mm)

(2:12-13) Distal - Distal

(2:14-15) Distal - Proximal

(2:16-17) Medial - Medial

(2:18-19) Proximal - Proximal

(2:20-21) Medial Thickness: taken on longitudinal axis between the medial zones of juncture.

(2:22-23) Proximal Thickness: taken on the longitudinal axis 3 mm above intersection with the base.

Base Element

(2:24) Outline

Code

- 0 - Indeterminate

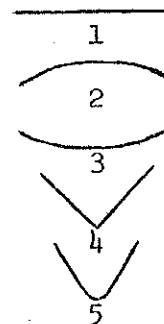
1 - Straight

2 - Concave

3 - Convex

4 - Triangulo-convex (point)

5 - Triangulo-convex (arc)

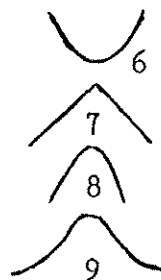


6 - Parabolic

7 - Triangulo-concave (point)

8 - Triangulo-concave (arc)

9 - Recurvate-concave



(2:25-26) Curvature (in mm)

Code

99 - Indeterminate

0-99 mm

(2:27) Orientation

Code

0 - Indeterminate

1 - Transverse relative to longitudinal axis

2 - Oblique relative to longitudinal axis

(2:28) Bilateral Symmetry

Code

0 - Indeterminate

1 - Symmetrical

2 - Asymmetrical

(2:29) Edge Form

Code

0 - Indeterminate

1 - Unretouched - broken

2 - Striking platform present

3 - Retouched - even chipped

4 - Retouched - even chipped, even ground

5 - Irregular - chipped

6 - Serrated

(2:30) Beveling

Code

0 - Indeterminate

1 - Absent

2 - Present - gentle

3 - Present - steep

Appendix B

COMPUTER LISTING OF POINT ATTRIBUTE DATA

The following table presents attribute codes for the majority of the points recovered from the Workman Site. Unfortunately, the points recovered during 1968 by the Juniata Field School excavation were received too late for all to undergo attribute analysis in time for this report. As an expedient, therefore, additional analyses were prepared only for those specimens necessary to provide at least one analysis per point type.

The two rows of numbers set apart at the top of each page of the table designate column numbers 1-80 of the machine punch cards. The data on each coded point is represented by two such punch cards. On both cards, columns 1-5 specify the identification (collection and artifact) number of the specimen. Data fields within each card are defined in Appendix A by parenthetical numbers preceding the attribute class they designate. For example, blade outline is designated (1:54), indicating that the blade outline code may be found in column 54 of card 1 (card 1 is the initial card in the two-card set); base outline is designated (2:24), indicating that the base outline code may be found in column 24 of card 2.

The coded points are ordered by type number as assigned in the main body of this chapter. The type number may be found in columns 46 and 47 of card 1.

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

SUMMARY OF THE INVESTIGATION
OF SITES IN
THE RAYSTOWN RESERVOIR

by

John B. Huner

ABSTRACT

Site Survey and salvage was conducted in the Raystown Reservoir by the 1967 Joint Penn State-Juniata College Archeological Field School. Nine sites were investigated of which two were test excavated. While the testing did not prove to be satisfactory, a historical site sequence was established and the status of several sites was revised. Recommendations as to the "direction" of investigation were also made.

ACKNOWLEDGEMENTS

Archeological investigations are impossible without the aid of many persons. Those offering "background" contributions to this report consist of all members of the 1967 Joint Penn State-Juniata College Archeological Field School and the staff and fellow graduate students of the Department of Anthropology at Penn State. However, several should be singled out for their outstanding criticism and aid. They are: Paul Heberling, Charles C. Kolb, J.W. Michels, Harvey Smith, Ira Smith, Pam Smith, and Lorraine Willey.

TABLE OF CONTENTS

	<u>Page</u>
ABSTRACT	285
ACKNOWLEDGEMENTS	286
TABLE OF CONTENTS	287
LIST OF ILLUSTRATIONS	288
LIST OF TABLES	289
I. INTRODUCTION	291
II. HUNTINGDON COUNTY SURVEY SITES	291
"Cemetery" Site - 36Hu10	291
"Stone House"	291
36Hu11	292
"Quarry" Site - 36Hu16	292
36Hu19	294
Entriiken Bridge Site - 36Hu24	294
Baker Sites Nos. 1 and 2 - 36Hu26 and 36Hu25	297
III. BEDFORD COUNTY SURVEY SITES	298
Workman Upper Field - 36Ba38	298
Jack Rhodes Farm Site - 36Ba39	298
IV. STATUS OF SALVAGE IN THE RAYSTOWN RESERVOIR: REMARKS AND RECOMMENDATIONS	300

LIST OF ILLUSTRATIONS

	<u>Page</u>
Figure 1. Map of James Creek Confluence	293
Figure 2. Map of Entriiken Bridge Area	295
Figure 3. Map of Saxton Area	299

LIST OF TABLES

	<u>Page</u>
Table 1. Material Recovered from 30Hu24	296

INTRODUCTION

Scientific investigation began in the Raystown Reservoir in the summer of 1965 by Ira Smith (1966). While this is the first published report, it is almost certain that Smith was aided by Witthoft, Kinsey, and the other early workers at Sheep Rock. Smith located 35 sites. Four were tested and surface collections were taken from the majority of the remainder, with the additional recommendation that further excavations be conducted at ten other sites. During the 1966 field season, the Penn State Archeological Field School, under the direction of Michels, excavated at three of them, including the Workman Site. The others were the Cunningham Site (36Hu9) and Mussel Rockshelter (36Hu6).

The 1967 Joint Penn State-Juniata Field School continued salvage operations in the Raystown Reservoir based on the recommendations of Smith and Michels. Nine sites were investigated in addition to the two major excavations at Workman and Sheep Rock.

"Cemetery" Site - 36Hu10

Smith (1966:23) has stated that in the area of E3385 (See map 1) there were reports of an Indian Cemetery. In addition, the 1967 Field School received several reports of a "cemetery" in the same area. Like Smith, we tended to be very skeptical. Also large "mounds" were reported by our informants and Smith had reported a cleared area. When a reconnaissance of the area was made, it was discovered that logging operations, which were in process, had caused a great deal of disturbance and the area would be impossible to excavate. The surface disturbance, however, made it possible to examine the area for artifacts or signs of occupation of which none were found. This area is on the side of a hill with a rather steep gradient directly across the river from the Cunningham Site (36Hu9). The Cunningham Site is located on a level terrace and it does not seem likely that occupation or even disposal of the dead would occur in the area of 36Hu10 but rather in the immediate area of the Cunningham Site.

There were several earth ridges along the river which are assumed to be the mounds that were referred to in the local information. These proved to be nothing more than natural levees, accretion ridges, and various flood channels of the Raystown; certainly not planned structures. Thus it is the author's opinion that there is no site in the area marked 36Hu10 and future investigation in the Raystown Reservoir should take this into account.

"Stone House"

This is not an aboriginal site per se but rather a well preserved, two-story stone structure which appears to have been occupied from the mid-nineteenth century to as late as the early twentieth

century. Smith originally investigated this location because of reports of bones and aboriginal artifacts being recovered from the cellar of this house during its construction (1966:39). Its location (at the confluence of Jones Creek and the Raystown Branch) and its proximity to other known aboriginal sites, make it plausible that this area was utilized by prehistoric groups (See map 1). The area, however, is densely covered with vegetation and neither Smith nor the 1967 investigations recovered any prehistoric artifacts.

However, the "Stone House" did produce a profusion of historic artifacts, particularly ceramics and glass, and it is felt that herein lies its value. While it is not possible to make a complete analysis of the historic artifacts at this time, the overlap exhibited between the later "Stone House", 36Hul9, and 36Hull will make it possible to establish a chronological sequence of historic artifact types for the Raystown Reservoir area. This would allow reasonably accurate dating of other historic occupations where records have been destroyed or are not sufficient.

36Hull

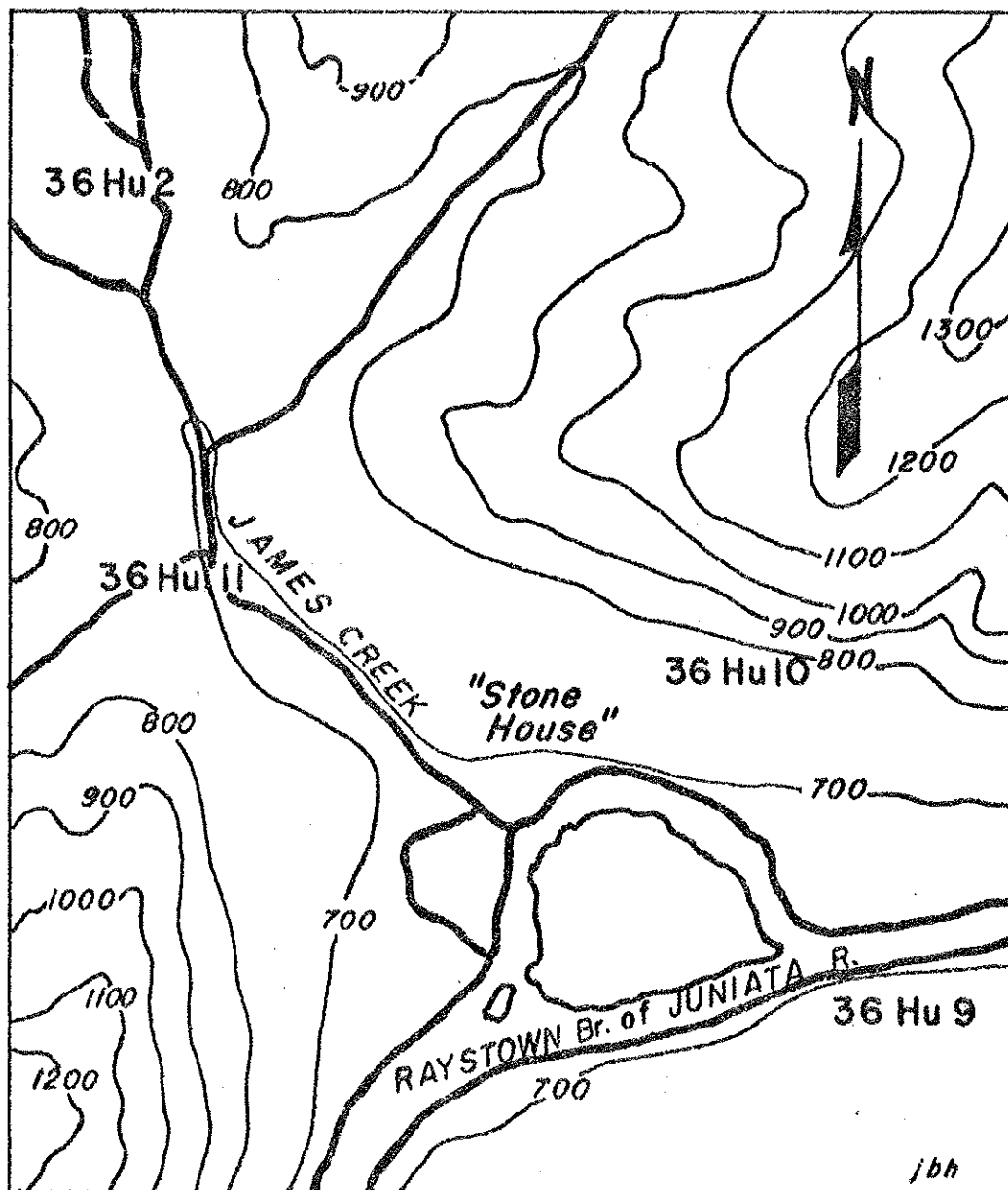
Although this site exhibits aboriginal occupation, its prime importance is its historic artifact yield. Smith dates the historic materials as 19th century based on identification by Blair (1966:29), indicate an earlier date. The aboriginal artifacts collected during several visits to this site during the 1967 season included lithic artifacts and detritus which support Smith's estimate of a Late Archaic occupation. It is surprising that more remains are not found in this area because its location, at the confluence of Jones Creek and the Raystown Branch, provided access to rolling hill country, an obvious source of food during both the Archaic and Woodland periods. It can be conjectured that the major concentration of occupation was across the river, in the vicinity of the Cunningham Site (See Figure 1).

"Quarry" Site - 36Hul6

As Smith has pointed out, this site is not a living area but rather an early iron furnace and limestone quarry (1966:30). He has stated:

Between this quarry and site W9558 we found many blocks of flint like material. It is felt that this material is associated with the nearby limestone outcrop. Therefore we have called this a site because it was probably an area from which local Indians obtained some of their raw materials (Smith 1966:30-31).

This position is entirely untenable. Examination of the material collected by Smith showed no indication of chipping other than the random flaking produced by crushing of the limestone in preparation for the iron furnace. In addition, this grey flint is not unique to this outcrop and is found widely throughout the reservoir. In fact, numerous river cobbles examined at many points along the river proved to be of a silicious nature, not only flint but other forms such as jasper, chert, etc. It appears as though the only silicious materials found in the Raystown Reservoir which



James Creek Confluence
 Sites: 36 Hu 2; 36 Hu 9; 36 Hu 10;
 36 Hu 11; & "Stone House"



Contour Interval 100ft.

after U.S.G.S. Quadrangle "ENDRIKEN, PA." (7.5')

can be traced to specific outcrops are of an exotic nature; that is, they were traded from well-known sources whose materials are widespread throughout the Northeast.

36Hu19

This site is located on the opposite side and upstream about two miles from the confluence of Great Trough Creek and the Raystown Branch. As noted earlier, this site forms the middle link between the historic artifacts of 36Hu11 and the Stone House. Our analysis is incomplete at this time but Smith dates the historic occupation of the site c. 1840-1880 based on four pieces of English Ironstone (1966:31). The Early Archaic occupation postulated by Smith (1966:31) was not confirmed since only a few chips and flakes were recovered by the 1967 Field School.

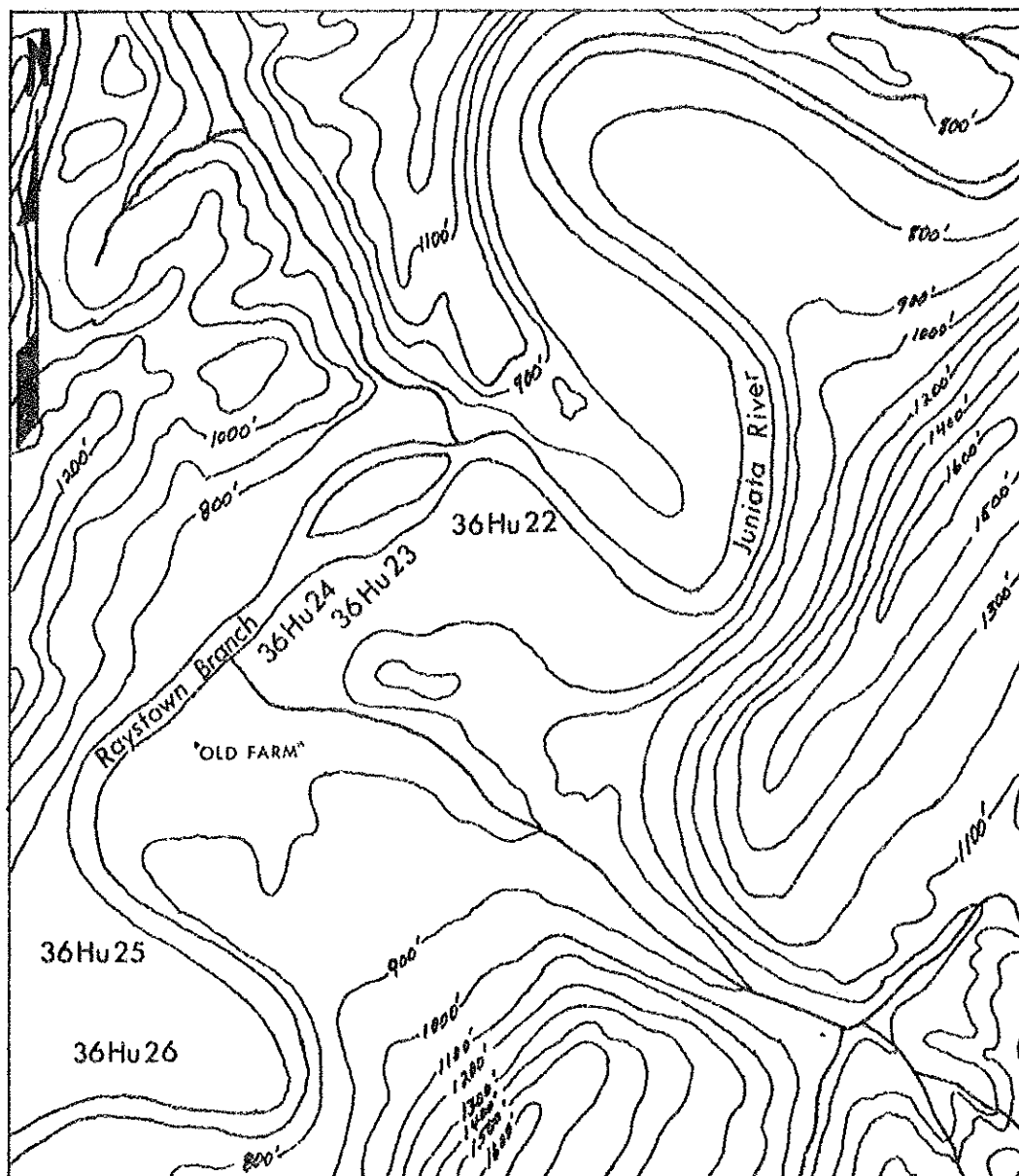
Entriaken Bridge Site - 36Hu24

The Entriaken Bridge site is located about twenty miles south of Huntingdon on a terrace-like deposit at the confluence of Tateman Run and the Raystown Branch (See Figure 2). First reported by Smith (1966:32), the site is presently an over-grown field. This and the alluvial deposits made it impossible to determine its full extent.

The site was laid out in a series of five foot squares numbered "A" through "M" on a North-South line from a temporary datum stake. This stake was related to a datum point established by the U.S. Corps of Engineers (DH 713/740.2 feet msl); measuring 261 feet from DH 713 twenty degrees west of south. Additional "sights" were made to two telephone poles and the coordinates were 214 feet 1 1/4 inches 64 degrees east of north from a pole "A" (REA Pole #J69A/AS/112) and 203 feet 6 inches 98 degrees east of north poles "B" (UTC of Pa. # 118).

As stated above, the series of five-foot squares formed a trench which ran in a north-south direction from a high point (square A) on the terrace closest to the river down hill toward the river (square M). In this way, it was hoped that any in situ deposits would be found, or if the site has been eroded, the talus or down slope would produce an artifact assemblage from which the site could be dated. Unfortunately, very little was found in either location and the only statement which could be made is that the site was inhabited by prehistoric groups (see Table 1 for summary of material found).

The recovery of a Brewerton Side-Notched point and the "archaic" point that Smith recovered tends to confirm his estimation of an archaic date for the site (1966:32). The negative evidence, i.e., lack of pottery, also tends to support the period of occupation. However, the artifact recovery is woefully low to make any positive statements. Another possibility is that the 1967 excavations "missed" the actual habitation area and the trench was placed on the periphery of the site. Since the artifact recovery was greater in squares "A" through "G" it might be indicated that the site is located to the south and east of the temporary datum point. Intensive surface collecting by amateurs



ENTRIKEN BRIDGE AREA

Sites: 36 Hu 22,
36 Hu 23, 36 Hu 24.
36 Hu 25, 36 Hu 26

Scale 1:24000
($\frac{1}{4}$ " = 1000')
contour interval 100 ft.

after U.S.G.S. quadrangle "ENDRIKEN, Pa." (7.5') 1963

SQUARE	A	B	C	D	E	F	G	H	I	J	K	L	M
PLow ZONE DEPTH	7"	8"	6 1/2"	7 1/2"	7"	7"	7 1/2"	5 1/2"	9"	8"	8 1/2"	7"	6 1/2"
ARTIFACTS	2 Whetted Stones (?)	1 Flint Core 1 Whetted Stone (?)	4 Whetted Stones (?)	2 Whetted Stones (?)	1 Chert Core (?)		1 Projectile Point (Bismuth Sulfide)			1 Flint Core			
DETRITUS	2 Flakes 1 Jasper Chip 1 Chert Chip 1 Flint Chip	2 Flakes 6 Chips	1 Chert Chip 1 Flint Chip 8 Medium Chips	2 Flint Chips 2 Chert Chips	2 Chert Chips	2 Flint Chips	2 Chips		3 Chert Chips 1 Yellow Chert Chip 1 Jasper Chip			1 Flint Flake	1 Chert Chip
OTHER LITHICS	1 Flint Flake (SS)	2 Flint Nodules	3 Flint Nodules 1 Exotic Stone	3 Flint Nodules 1 Jasper Nodule	1 Flint Nodule 2 Exotic Stones	2 Flint Nodules 1 Mohave Pebble		1 Chert Nodule 1 Mohave Pebble	1 Chert Nodule	1 Flint Nodule 2 Jasper Nodules	1 Flint Nodule		
OTHER	2 Pieces of Carnelian												

Table 1

MATERIAL RECOVERED FROM 36Hu24

over the years might also account for the paucity of materials, but it has been the authors' observation that while surface collectors denude a site of points they very often overlook such items as scrapers, grinding and hammer stones, cores, etc. The lack of artifacts might also indicate that 36Hu23 and 36Hu24 are the same site and there is actually a continuous "line-type" settlement along the terrace. It should be noted that the terrace is probably Pleistocene in age and of alluvial nature, it appears to be similar to terraces that the Workman (36Bd36) and Cunningham (36Hu9) sites are located on.

Perhaps it is appropriate to mention at this point that while talking to the head of the Johnstown Y.M.C.A. Camp Reynolds (present owners of the Entriiken Bridge Site) stone mounds were reported. Upon checking this out, Huner and Kolb found several piles of field stone and two or three stone fences in a wooded area to the south of Camp Reynolds. A tree-ring count of a recently felled tree indicated a growth of fifty to sixty years and there is virtually no indication of a farm existing in the area from the records. This is probably similar to the area E8232 that Smith reported (1966:40). This has undoubtedly occurred in other areas and indicates the need for both a strong historical chronology and search of the wooded areas of the Raystown Reservoir are necessary before a complete assessment can be made.

Baker Sites, Nos. 1 and 2--36Hu25 and 36Hu26

The Baker Sites, No. 1 (36Hu26) and No. 2 (36Hu25) are to be found on a point on the northern side of the Raystown Branch of the Juniata River just down stream of the confluence of Shy Beaver Creek, (see Figure 2). These sites might be one site but Smith observed an area between the two sites which was relatively sterile. This served as the demarkation line (1966:25). Smith reported artifacts which indicated Paleo-Indian, Archaic, Transitional and Woodland Components (1966:24-26) and recommend that these sites be tested. The 1967 Field School was most eager to do so but the fields were under cultivation. However, Mr. Baker was willing to allow excavation of a wooded area approximately half-way between the two sites. The wood area occupied a shallow gully and it was felt that erosion would have deposited materials in it. This, unfortunately, was not the case.

A ten foot square was excavated to a depth of sixteen inches below the surface with the only soil change being from a dark, sandy loam top soil which was about three inches deep to the yellow clay subsoil. There was a trace deposit of charcoal. This deposit could be the result of aboriginal occupation or of clearing and burning practices of the present owners. The only artifacts which were recovered included one nondescript, broken projectile point, two crudely chipped chert scrapers, and four flint chips. It was concluded that the test pit was on the periphery of both sites and a surface collection indicated that the major area of concentration was on a knoll to the east of the test pit.

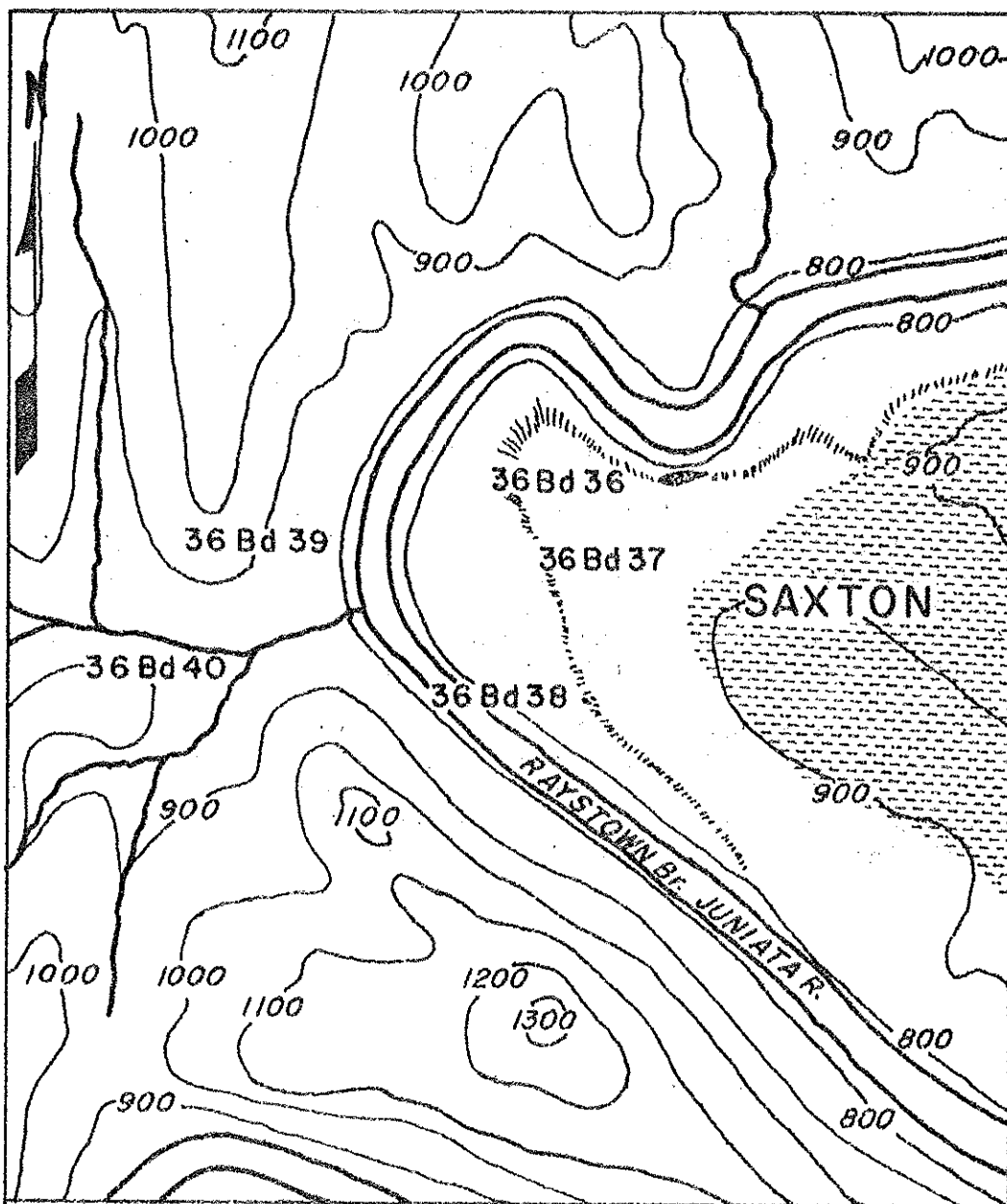
Bedford County Survey Sites

Workman Upper Field--36Bd38

This site is located in the "bottoms" on the same meander as the Workman site. (See Figure 3). Its location is in the direct path of any crevasse channel which might develop. This, in fact, did occur during the "1936" Flood and Mr. Workman has informed the authors that as much as five feet of soil was scoured from the field and deposited at the other end of the field. (Personal inspection confirmed this disturbance.) This would certainly remove any change of stratigraphy or settlement pattern and it is felt that anything more involved than surface collection would be futile

Jack Rhodes Farm Site--36Bd39

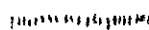
The Jack Rhodes Farm Site is located on the Pleistocene terrace across the Raystown Branch from the Workman Site. (See Figure 3). Smith reported that several points of the plano tradition have been found and that there is a heavy concentration of Archaic materials as well as a Middle and Late Woodland component (1966:22). The 1967 Field School was very anxious to test this site. The owner, however, was not cooperative.



SAXTON AREA

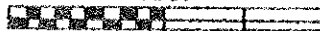


Clay Lens



Terrace Edge

feet



1000 500 0 500 1000

CONTOUR INTERVAL 100 ft.

after U.S.G.S. Quadrangle "EVERETT, PA." (15') 1900

jbh

STATUS OF SALVAGE IN THE RAYSTOWN RESERVOIR; REMARKS AND RECOMMENDATIONS

Smith (1966) reported thirty-six sites in the Raystown Reservoir. Approximately one-third (13) have been re-examined. Of the sites designated as of primary importance by Smith all except one (the Jack Rhodes Site) have been extensively tested. Of the six sites designated as of secondary importance, three have been tested. Of the remaining seventeen sites, seven have been tested or extensively surface collected.

While there now exists fairly good coverage of the sites in the Raystown Reservoir, several questions have been raised as to certain "gaps" in the sequence. There is a definite lack of Early and Middle Woodland Period sites, and it is felt that the predominance on "Paleo" and Archaic sites is not a true representation of the settlement history of the area. This may be due to the fact that assessment was based on site samples of only a few artifacts. Also, due to the discovery of a completely different early Late Woodland ceramic complex at the Workman site, two other sites should be tested (36Hu9 and 36Hu22) to determine the extent of merger between the northern Clemson's Island/Owasco complexes and the southern limestone tempered complexes.

Two settlement patterns can now be recognized. The first, noted by Smith, (1966:40-42), is that of a satellite hunting camp system located at the confluence of secondary streams. These are generally single component archaic sites. The second pattern is that of settlements located at river points, with preference given to "flood-proof" Pleistocene terraces where they exist. This pattern occurs throughout the sequence.

It is recommended that future researchers concentrate on more extensive excavation of known sites, such as 36Hu9; 36Hu22; 36Hu25; 36Hu26; until time when condemnation and clearing permits easy access to the wooded areas which offer possibilities for the discovery of sites similar in their productivity to The Workman Site.

BIBLIOGRAPHY

Azer, John H.

- 1967 Initial Analysis of Charcoal Materials. In Michels and Smith, Eds., Archaeological Investigations of Sheep Rock Shelter, Vol. 2, pp. 825-864. Department of Sociology and Anthropology, The Pennsylvania State University, University Park.

Bebrich, Carl A.

- 1967 Lithic Artifacts from Sheep Rock. In Michels and Smith, Eds., op. cit., Vol. 2, pp. 553-739.

Binford, Lewis R.

- 1963 A Proposed Attribute List for the Description and Classification of Projectile Points. In James B. Griffin, Ed., Miscellaneous Studies in Typology and Classification, pp. 193-221. The University of Michigan, Ann Arbor.

Brothwell, D. R.

- 1963 Digging Up Bones. William Clowes and Sons, Limited. London.

Broyles, Bettye J.

- 1964 Mill Pond Site, 46 Me 2. The West Virginia Archaeologist, No. 17, pp. 10-45. Moundsville.
- 1966 Preliminary Report: The St. Albans Site (46 Ka 27), Kanawha County, West Virginia. The West Virginia Archaeologist, No. 19, pp. 1-43. Moundsville.

Butler, Mary

- 1939 Three Archaeological Sites in Somerset County, Pennsylvania. Pennsylvania Historical Commission, Bulletin No. 753. Harrisburg.

Camehl, Ada Walker.

- 1948 The Blue-China Book. Tudor Publishing Company. New York.

Coe, Joffre L.

- 1964 The Formative Cultures of the Carolina Piedmont. Transactions of the American Philosophical Society, n.s., Vol. 54, Pt. 5. Philadelphia.

Cotter, John L., Ed.

- 1968 Handbook for Historical Archaeology, Part 1.
Privately published. Wyncote.

Curtis, Sue Ann

- 1968 Preliminary Investigations at the Seneca Farm Site,
Northwestern Pennsylvania. A paper delivered at
The 1968 Central States Anthropological Society-
American Ethnological Society Joint Meeting.
Detroit.

Dragoo, Don W.

- 1955 Excavations at the Johnstown Site, Indiana County,
Pennsylvania. Pennsylvania Archaeologist, Vol. 25,
No. 2, pp. 85-141. Gettysburg.
- 1963 Mounds for the Dead: An Analysis of the Adena
Culture. Annals of the Carnegie Museum, Vol. 37,
pp. 1-315. Pittsburgh.
- 1966 Personal Communication.

Epstein, Diana

- 1968 Buttons. Walker and Company. New York.

Evans, Clifford

- 1955 A Ceramic Study of Virginia Archaeology. Smithsonian
Institution, Bureau of American Ethnology, Bulletin
160. Washington, D. C.

Ferraro, Pat and Bob

- 1965 The Past in Glass. Western Printing and Publishing
Company. Sparks.

Fontana, Bernard L.

- 1965 The Tail of a Nail: On the Ethnological Interpretation
of Historic Artifacts. Florida Anthropologist, Vol.
18, No. 3, Part 2, pp. 85-103.

Fontana, Bernard L., et. al.

- 1962 Johnny Ward Rance: A Study in Historic Archeology.
Kiva, Vol. 28, Nos. 1-2, pp. 1-115. Arizona
Archeological and Historical Society. Tucson.

Funk, Robert E.

- 1968 A New Middle Woodland Complex in Eastern New York.
Bulletin of the New York State Archaeological Association,
No. 44, pp. 1-7. Ann Arbor.

Godden, Geoffrey A.

- 1964 Encyclopedia of British Pottery and Porcelain Marks.
 Crown Publishers, Inc. New York.
- 1967 An Illustrated Encyclopedia of British Pottery and
Porcelain. Crown Publishers, Inc. New York.

Guilday, John E. and Paul W. Parmalee

- 1965 Animal Remains from the Sheep Rock Shelter (36 Hu 1),
 Huntingdon County, Pennsylvania. Pennsylvania
Archeologist, Vol. 35, Part 1, pp. 34-49.

Harrington, M. R.

- 1908 Catawba Potters and Their Work. American Anthropol-
ogist, Vol. 10, pp. 399-407.

Higbee, Henry

- 1934 Soil Survey, Huntingdon County, Pennsylvania. United
 States Department of Agriculture. Washington.

Heisey, Henry W. and J. Paul Witmer

- 1964 The Shenk's Ferry People: A Site and Some Generalities.
Pennsylvania Archaeologist, Vol. 34, No. 1, pp. 8-34.
 Harrisburg.

Howells, W. W.

- 1967 Personal Communication to Frank P. Saul.

Huner, John B., et. al.

- 1967 A Preliminary Report on the Stealite Vessels,
 Ceramics, and Pipes of Sheep Rock. In Michels and
 Smith, Eds., op. cit., Vol. 2, pp. 427-551.

Jones, Robert W.

- 1931 The Clemson Mound. Pennsylvania Historical Commission,
Fifth Annual Report, pp. 89-111. Harrisburg.

Kaesser, Edward J.

- 1968 The Middle Woodland Placement of Steubenville-Like Projectile Points in Coastal New York's Abbott Complex. Bulletin of the New York State Archaeological Association, No. 44, pp. 8-26. Ann Arbor.

Kent, Barry C. and Vance P. Packard

- 1969 The Erb Rockshelter. Pennsylvania Archaeologist, Vol. 39, Nos. 1-4, pp. 29-39. Harrisburg.

Kinietz, W. Vernon

- 1940 The Indians of the Western Great Lakes, 1615-1760. Ann Arbor: University of Michigan Press.

Kinsey, W. Fred, III

- 1958 An Early Woodland Rock Shelter. Pennsylvania Archaeologist, Vol. 28, No. 1, pp. 2-4. Harrisburg.

Lorrain, Dessamae

- 1968 An Archaeologist's Guide to Nineteenth Century American Glass. Historical Archaeology, Vol. II, pp. 35-44.

Luscomb, Sally C.

- 1968 The Collector's Encyclopedia of Buttons. Crown Publishers, Inc. New York.

MacCord, Howard A., Karl Schmitt and Richard G. Slattery

- 1957 The Shepard Site Study. Archaeological Society of Maryland, Bulletin No. 1. Baltimore.

McKearin, George S. and Helen

- 1948 American Glass. Crown Publishers. New York.

Manson, Carl, Howard MacCord and James B. Griffin

- 1943 The Culture of the Keyser Farm Site. Papers of the Michigan Academy of Science, Arts and Letters, Vol. 24, pp. 375-418. Ann Arbor.

Matson, F. R.

- 1937 Pottery. In E. F. Greenman, Ed., The Younge Site. Occasional Contributions, No. 6, pp. 99-124. Museum of Anthropology of the University of Michigan. Ann Arbor.

Mayer-Oakes, William J.

- 1955 Prehistory of the Upper Ohio Valley: An Introductory Archaeological Study. Annals of the Carnegie Museum, Vol. 34, Anthropological Series No. 2. Pittsburgh.

Michels, Joseph W. and Ira F. Smith, III, Eds.

- 1967 Archaeological Investigations of Sheep Rock Shelter. Department of Sociology and Anthropology, The Pennsylvania State University, University Park.

Michels, Joseph W.

- 1968 Settlement Pattern and Demography at Sheep Rock Shelter: Their Role in Culture Context. Southwestern Journal of Anthropology, Vol. 24, No. 1, pp. 66-82.

Nelson, Lee H.

- 1962 Nail Chronology as an Aid to Dating Old Buildings. National Park Services. Philadelphia.

Noël Hume, Ivor

- 1969 Historical Archaeology. Alfred A. Knopf. New York.
1970 A Guide to Artifacts of Colonial America. Alfred A. Knopf. New York.

Olsen, Stanley J.

- 1963 Dating Early Plain Buttons by Their Form. American Antiquity, Vol. 28, No. 4. Salt Lake City.

Prufer, Olaf H.

- 1967a Chesser Cave: A Late Woodland Phase in Southeastern Ohio. In Prufer and McKenzie, Eds., Studies in Ohio Archaeology, pp. 1-62. The Press of Western Reserve University. Cleveland.

Prufer, Olaf H.

- 1967b The Scioto Valley Archaeological Survey. In Prufer and McKenzie, Eds., op. cit., pp. 267-328.

Rhodes, Daniel

- 1959 Stoneware and Porcelain: The Art of High-Fired Pottery. Chilton Books. New York.

Ritchie, William A.

- 1961 A Typology and Nomenclature for New York Projectile Points. New York State Museum and Science Service, Bulletin No. 384. Albany.
- 1965a The "Small Stemmed Point" in New England. Pennsylvania Archaeologist, Vol. 35, Nos. 3-4, pp. 134-138.
- 1965b The Archaeology of New York State. The Natural History Press. Garden City.
- 1969 The Archaeology of Martha's Vineyard. The Natural History Press. Garden City.

Robbins, Maurice with Mary B. Irving

- 1965 The Amateur Archaeologist's Handbook. Thomas Y. Crowell Company. New York.

Saul, Frank P.

- 1967 An Osteobiographical Study of Sheep Rock Woman. Paper presented at Sheep Rock Symposium at William Penn Memorial Museum. May 27. Harrisburg.

Shane, Arrión C. and James L. Murphy

- 1967 A Survey of the Hocking Valley, Ohio. In Prufer and McKenzie, Eds., op. cit., pp. 329-356.

Smith, Ira F., III

- 1966 Raystown Reservoir Archaeological Salvage and Survey Program. Report to the National Park Service, Northeast Region. The Pennsylvania State University, University Park.

Smith, Ira F., III

- 1967 Survey Excavations in the Raystown Drainage. In Michels and Smith, Eds., op. cit., Vol. 2, pp. 741-799.

South, Stanley

- 1964 Analysis of the Buttons from Brunswick Town and Fort Fisher. Florida Anthropologist, Vol. 17, No. 2.

Spargo, John

- 1926 Early American Pottery and China. Garden City Publishing Company. New York.

Stearns, Richard E.

- 1940 The Hughes Site: An Aboriginal Site on the Potomac River in Montgomery County, Maryland. Natural Historical Society of Maryland, Proceedings No. 9.

Stewart, T. D.

- 1957 Distortion of the Pubic Symphyseal Surface in Females and its Effect on Age Determination. American Journal of Physical Anthropology, Vol. 15, pp. 9-18. Washington.

Trotter, M. and G. C. Gleser

- 1952 Estimation of Stature from Long-bones of American Whites and Negroes. American Journal of Physical Anthropology, Vol. 10, pp. 462-514. Washington.
- 1958 A Re-evaluation of Estimation of Stature Based on Measurements of Stature Taken During Life and Long-bones After Death. American Journal of Physical Anthropology, Vol. 16, pp. 79-123. Washington.

Wallace, Paul A.

- 1965 Indians in Pennsylvania. Pennsylvania Historical and Museum Commission. Harrisburg.

Wheat, J. B., J. C. Gifford, and W. W. Wasley

- 1958 Ceramic Variety, Type Cluster, and Ceramic System in Southwestern Pottery Analysis. American Antiquity, Vol. 24, No. 1, pp. 34-47. Salt Lake City.

Witthoft, John

- 1953 Broad Spearpoints and the Transitional Period
 Cultures. Pennsylvania Archaeologist, Vol. 23, No.
 1, pp. 4-31. Harrisburg.
- 1965 Indian Prehistory of Pennsylvania. Pennsylvania
 Historical and Museum Commission. Harrisburg.

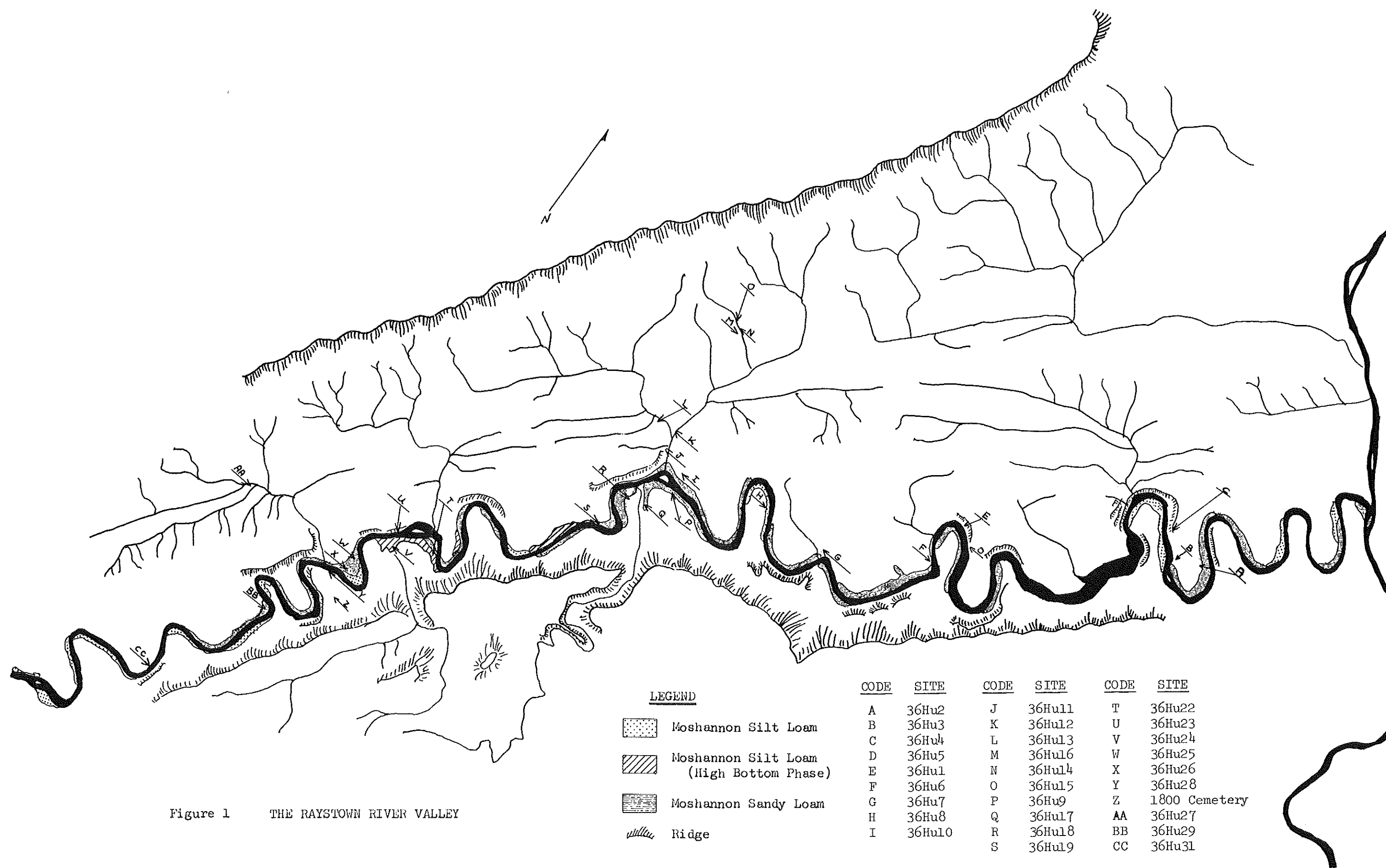


Figure 1 THE RAYSTOWN RIVER VALLEY

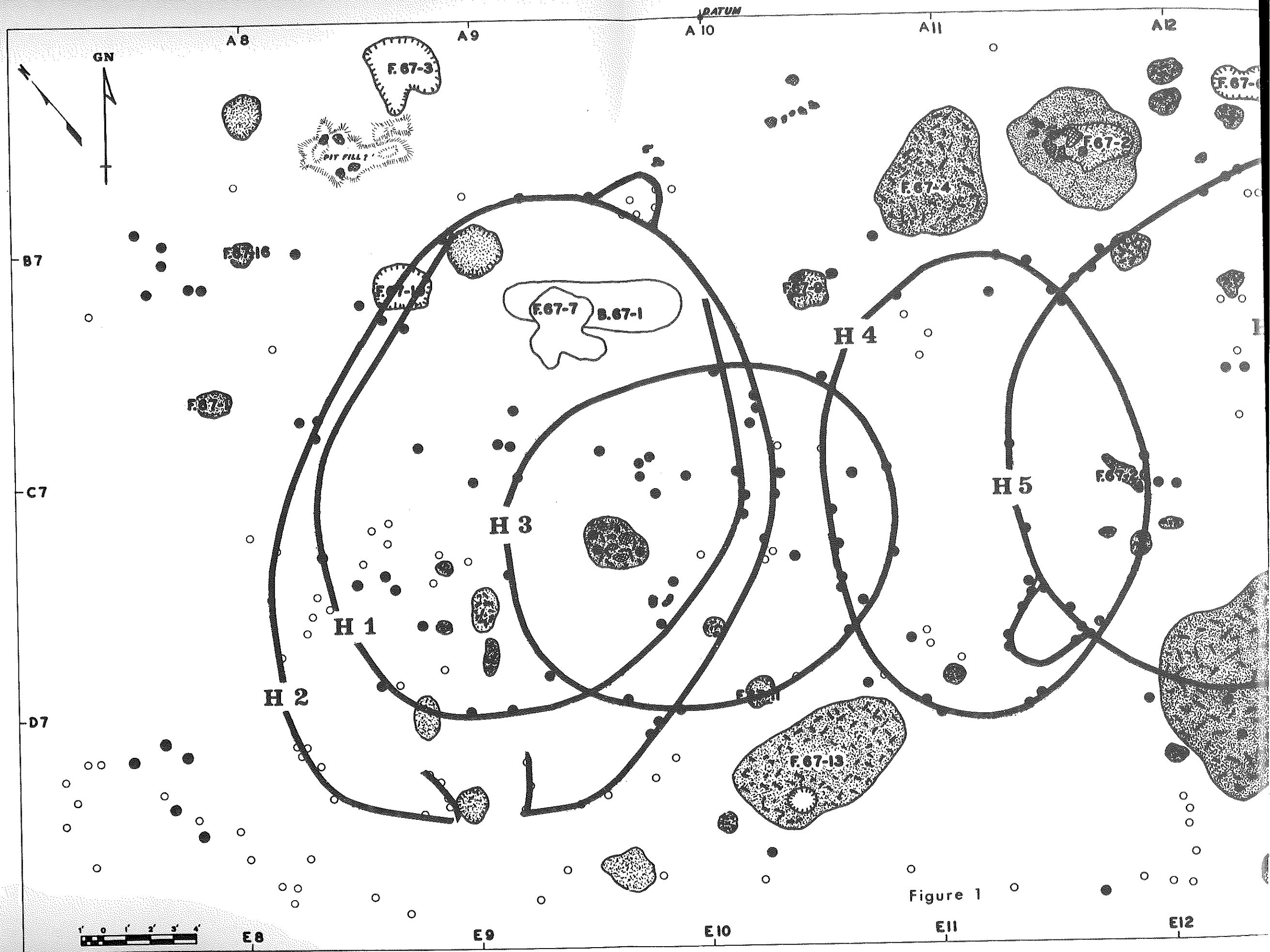


Figure 1

