This document contains information on Native American burials. Images considered to be culturally insensitive, including images and drawings of burials, Ancestors, funerary objects, and other NAGPRA material have been redacted.

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THE TUNACUNNHEE SITE:
Evidence of Hopewell Interaction in Northwest Georgia

RICHARD W. JEFFERIES

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THE TUNACUNNHEE SITE:
Evidence of Hopewell Interaction In Northwest Georgia.

RICHARD W. JEFFERIES

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Preface

This report on the excavation and subsequent analysis and interpretation of the Tunacunnhee Site is a somewhat revised and shortened version of a masters thesis submitted to the University of Georgia in 1975.

Any archaeological research project invariably involves the efforts and assistance of a great number of individuals, and the Tunacunnhee project was no exception.

I am particularly indebted to the late Dr. Joseph R. Caldwell for giving me the opportunity to assist in the direction of the excavation of the Tunacunnhee Site and entrusting me with the responsibility of analyzing the data.

The actual excavation of the Tunacunnhee Site was a cooperative project involving the University of Georgia, Covenant College, the Dade County Public School System, the Ani-Yun-Wiya Society, and the Tennessee Valley Authority. The Tunacunnhee site is located on land owned by Mr. J. C. Vice, who generously gave the University of Georgia permission to excavate. Financial support for the excavation phase of the project was provided by a group of citizens of Dade and Walker County, Georgia, and Hamilton County, Tennessee. Special thanks is offered to Dr. Joseph Johnson of Lookout Mountain, Tennessee, for organizing the financial backing for the excavation phase of the project. Archaeological investigation of the Tunacunnhee Site would not have been possible without his deep interest, great enthusiasm, and friendship.

The Department of Anthropology, University of Georgia, provided financial support for the subsequent analysis phase of the project, which was carried out at the Laboratory of Archaeology, University of Georgia. A number of individuals contributed their time and expertise during this analysis phase of the project. Dr. Ronald Butler, then with the Department of Anthropology, University of Georgia, assisted in determining the sex and age of human skeletal material recovered from the site. Dr. Grace Thomas of the Department of Zoology, University of Georgia, identified shell material recovered from the site. Dr. Donald Scott, Department of Zoology of the University of Georgia, identified fish remains from the site. Dr. Paul Parmalee, Department of Anthropology, University of Tennessee, offered suggestions concerning possible species identification of fauna represented on platform pipes. Dr. W. H. Duncan, Department of Plant Science, University of Georgia, identified plant remains from the site. Dr. Kent Schneider, Department of Natural Resources, State of North Carolina, provided x-ray florescence of copper artifacts from the site and commented on the results of the analysis. Ms. Martha Potter Otto, Associate Curator of Archaeology, the Ohio Historical Society, identified chert material from Ohio. Mr. Jerry Elkins, Department of Geology, University of Georgia, assisted in the identification of lithic material and in the preparation of x-rays of copper artifacts.

Throughout the analysis phase of the project and the actual writing of this report a number of faculty members in the Department of Anthropology provided suggestions, comments, and guidance. Dr. David J. Hally served as my major professor and directed my thesis work, while Drs. Donald A. Graybill and Wilfrid C. Bailey served as the reading committee.

Dr. Bruce D. Smith made many of the suggestions concerning revision and rewriting of both the earlier and final versions of this report. His efforts are greatly appreciated. The typing and preparation of the final draft of the report were provided with patience and concern for accuracy by Mrs. Louise Brice and Mrs. Kathy Butler.

Finally, I would like to thank my family for their understanding and patience during the period of research and writing of this report.

Contents

Preface v
List of Tables vii
List of Figures vii
List of Plates viii
I. Introduction 1
1) Environmental Setting
2) Description of the Site and University of Georgia Excavations 3
II. The Excavation Phase of the Tunacunnhee Project 6
1) Mound A
2) Mound C
3) Mound D
4) Mound E
5) Non-Aboriginal Stone Mounds (Mounds B, F, G, H)
6) Non-Mound Features
7) Habitation Area
III. Analysis of Cultural Material From the Tunacunnhee Site 21
1) Panpipes
2) Earspools
3) Plates
4) Pins
5) Adze or Celt
6) Copper analysis
7) Mica
8) Clay and stone pipes
9) Ground Stone Celts
10) Gorgets
11) Shell
12) Bear canines
13) Shark vertebrae
14) Shark teeth
15) Turtle shell rattles
16) Bone awls
17) Perforated deer antler socket
18) Hairpins
19) Human skeletal remains
20) Lithic material
21) Ceramics
22) Wood
IV. Burial Analysis 33
1) Classification of Burials
2) Relative Social Status of Tunacunnhee Burials
3) Status and Social Composition
V. Similar Sites in the Southeast United States 42
1) Stone mounds
2) Earth mounds
3) Copena mounds
4) Cave burial sites
5) Stone enclosures
VI. Tunacunnhee and the Hopewell Interaction Sphere 45

Bibliography 68

Tables

1. Copper Panpipes at Tunacunnhee: data summary 22
2. Results of X-ray Fluorescence of Materials Recovered from the Tunacunnhee Site 25
3. Percentage Distribution of Habitation Area Ceramics 32
4. Burial Attribute Associations 34
5. Significant Artifact Classes within Agglomerative Burial Clusters 41

Figures

1. The Location of Lookout Valley in the Extreme Northwest Corner of Georgia 1
2. The Location of the Tunacunnhee Site within Lookout Valley 2
3. Topographic Map of the Tunacunnhee Site, Arbitrary One Foot Contour Interval 3
4. The Mound Area Excavated at the Tunacunnhee Site 4
5. Floor Plan of Mound A, Showing Unexcavated Areas, Central Burial Pit, Location of Burials, and Stone "Apron" on the East Side of the Mound 6
6. Vertical Cross Section of Mound A at the N170 Line, Looking North 7
7. Floor Plan of Mound C, Showing Central Submound Burial Pit, Slablined pit, Location of Burials, and Red Clay Ring 8
8. Vertical Cross Section of Mound C, at the North 120 Line, Facing North 9
9. The Location of Artifacts on the Floor of the Central Submound Burial Pit (Feature 30) of Mound C 10
10. The Location of Artifacts Associated with Burial 18F on the Floor of the Central Submound Burial Pit (Feature 34) of Mound D 13
11. The Floor Plan of Mound E, Showing Unexcavated Areas and Central Burial Pit 14
12. Vertical Cross Section of Mound E, Facing South (See Figure 11 for Profile Location) 15
13. The Location of Artifacts Associated with Burial 17 on the Floor of the Central Submound Burial Pit (Feature 33) of Mound E 16
14. The Location of Artifacts Associated with Burials in a Stone Filled Pit Between Mounds A and C (Feature 1) 17
15. The Location of Features in the Block Excavation in the Village Area 19

16. Tree Diagram Showing Critical Variables by Analysis Using Whallon's Program with Tunacunnhee Burial Data 37
17. Tree Diagram with Burials Showing Results of Association Analysis Using Whallon's Program with Tunacunnhee Burial Data 38
18. Dendrogram Showing Results of Cluster Analysis Using Ward's Method 41
19. Major Hopewellian Affiliated Sites in the Southeast 46
20. Major Indian Trails as Presented by Myer (1928) in the Area of the Tunacunnhee Site. Other Trails in the Area Have Been Omitted 50

Plates

1. View of Tunacunnhee Site (center of photograph) Looking West from the Top of Lookout Mountain 51
2. Mound A and Mound B 51
3. Mound D and Mound C 52
4. Stone Mantle—Mound C 52
5. Differential Clay Fill—Mound C 53
6. Profile of N110 line—Mound C 53
7. Copper Artifacts on Bottom of Feature 30—Mound C 54
8. Feature 7 54
9. Feature 1 55
10. Burial 7A—Feature 1 55
11. Test Excavations in Tunacunnhee Habitation Area 56
12. Feature 13 56
13. Copper Breastplate and Mica Disc from Feature 30–Mound C 57
14. Earspools, Shark Vertebrae, Shark Teeth, and Copper Awl from Feature 30 58
15. Copper Artifacts from Burial 17 59
16. Celt and Platform Pipe from Burial 17 60
17. Copper Breastplate and Mica from Burial 18F 61
18. Additional Material from Burial 18F 62
19. Pipes Associated with Burial 18F 63
20. Artifacts Associated with Burials 9A and 9B (Mound A) and Burials 8, 15A and 15C (Mound C) .. 64
21. Ceramic Vessels from the North Side of Mound C 64
22. Ceramics from the Habitation Area 65
23. Lithic Material Recovered from Habitation Area 66
24. Wooden Spools and Copper Adze from the South Side of Mound E 67

I. Introduction

Environmental Setting

Topography

The Appalachian Plateau Province, which extends from Central Alabama north to southern New York State, contains a complex pattern of mountain ranges interspersed with narrow, isolated river valleys running in a northeast-southwest direction. The Tunacunnhee site is situated within one of these narrow, isolated river valleys in the Cumberland Plateau (Fig. 1, Plate 1), a southern subdivision of the Appalachian Plateau (Fenneman 1938:338).

Lookout Valley, part of which is located in Dade County, Georgia, and Hamilton County, Tennessee, is a narrow isolated valley oriented northeast-southwest and is bordered on the east by Lookout Mountain and on the west by Sand Mountain (Fig. 2). Lookout and Sand Mountains are actually parallel mountain ridge systems ranging in altitude from 1500 to 2100 feet above sea level. Lookout Mountain averages about 500 feet higher than Sand Mountain. The floor of Lookout Valley ranges in altitude from 680 feet ASL where Lookout Creek crosses the Georgia-Tennessee border to 1300 feet ASL further southwest. The valley is bounded by very steep mountain slopes on both the east and west sides. The numerous chert ridges found throughout the valley average around 1200 feet ASL in elevation. These chert ridges are quite steep and narrow and are oriented northeast to southwest, paralleling the higher mountain ridge systems (Taylor, et al., 1942:3).

The dramatic topographic relief of the area is the result of weathering and stream erosion acting on material with varying resistivity to erosional activities. Chert beds are highly resistant to such activity while the limestone and shale are less resistant. Limestone and chert formations are found below the valley floor along with small deposits of shale, sandstone, and iron ore. The Fort Payne chert formation (Mississippian series) is the most extensively developed formation in the valley (Taylor, et al., 1942:3–4).

Drainage of the eastern portion of Sand Mountain

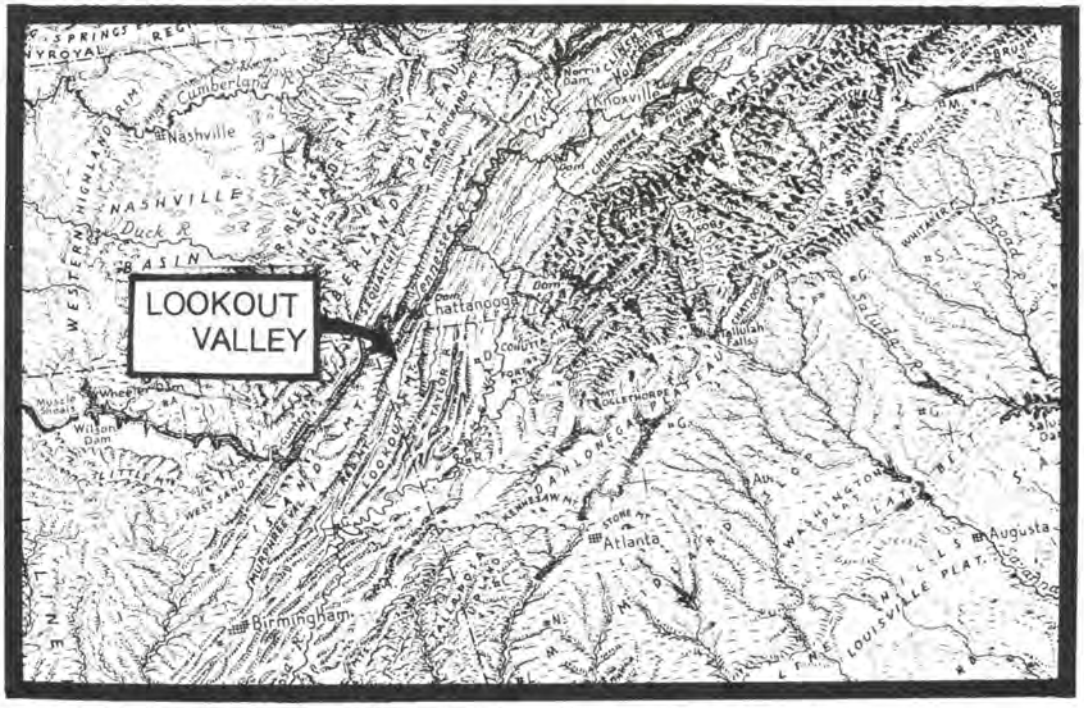


Figure 1. The Location of Lookout Valley in the Extreme Northeast Corner of Georgia.

Figure 2. The Location of the Tunacunnhee Site within Lookout Valley.

and the western side of Lookout Mountain flows into Lookout Creek. The creek is the only drainage for this portion of the valley and flows northeastward through the valley, eventually joining the Tennessee River. There are few permanent streams in the mountains to either side of Lookout Valley, but many small intermittent streams exist that flow only during wet periods. In the nineteenth and early part of the twentieth centuries it was not unusual for mountain people to haul water during the dry periods, while the valley would always have an adequate supply of water (Taylor, et al., 1942:3–4).

Soils

The soils found throughout the Lookout Valley area are light in color because the soil has developed in a forest environment that did not favor the accumulation of much organic material. The best developed soils are located on the well drained terraces and ridges where various processes have modified their physical and chemical properties. These high quality soils have been leached of calcium and magnesium carbonates. In areas where soils are poorly drained, the leaching process has been retarded with soils, as a result, being less developed (Taylor, et al., 1942: 58–59).

Approximately 60% of the land in Dade County is steep, ranging between 15–30 degree slope. Erosion of surface soils has kept up with soil building process and consequently there are no well developed soil profiles. The best soils in the county are classified as second class soils (28% of the soil in Dade County) which are considered good to fair for crops. Soils in this category include Sequatchie silt loam and Etowah silt loam found on terraces, Pope silt loam, found on floodplains and Allen loam, a colluvial. These four types of soil are found in the immediate vicinity of Tunacunnhee. Third class soils (8%) are considered fair to poor for cropland and generally occur on steeper slopes than second class soils. Fourth class soils (17%) as a group are difficult to till because of increased slope, impervious subsoil, or stoniness. Fifth class soils (47%) consist of rough, stony and mountainous areas and are presently best suited for forests (Taylor, et al., 1942:58–59).

Soils in the county may be placed in three groups based on parent material and physiographic relationships: (1) those developed from sandstone and shale on Lookout, Sand, and Fox Mountains (61%); (2) those developed from limestone, sandstone, chert and shale materials in Lookout and smaller valleys where relief ranges from rolling valley floors to steep narrow ridges (20%); (3) those developed from alluvial materials (19%). Many of the attributes found among the various classes of soil in Dade County directly reflect the characteristics of the parent material.

Climate

Dade County has a continental climate with long summers and relatively short mild winters. The average frost free period is 212 days extending from March 30 to October 28. The mean temperature ranges between 41.2°F in January and 78.4° in July. The annual mean is 60.4°F. The average rainfall for the county is 51.61 inches. This total is evenly distributed throughout the year.

Vegetation

The areas adjacent to the site provide a wide range of plants due to the great variation of soil and elevation in the valley and mountains. The predominant vegetation supported in the sandy, well drained soil of Lookout and Sand Mountains includes red oak, chestnut oak, post oak, hickory, sweet and black gum, and loblolly and Virginia pine. Vegetation found on the floor of Lookout Valley includes red cedar, black locust, white oak, red oak, black gum, loblolly pine, short leaf pine and hickory. The chert ridges in

Lookout Valley support varieties of oaks, pines and gums. Other less common trees include maple, wild cherry, birch, chinquapin, locust, ash, black walnut, butternut and elm (Taylor, et al., 1942:52).

According to Shelford (1963) the area of Lookout Mountain is located on the border of the Temperate Deciduous Forest Biome (Northern) and the Temperate Deciduous Forest Biome (Southern). The area is described as having a mixture of climax deciduous trees distributed through the forest with an admixture of coniferous trees in the climax area. There are approximately fifty species of deciduous shrubs and fifteen species of evergreen shrubs that are found in this forest area (Shelford 1963:20).

Studies carried out on Lookout Mountain and adjacent areas of the Cumberland Plateau indicate that forest composition has changed considerably due to the effects of disease and lumbering activities. At the turn of the century, Lookout Mountain was described as follows: "the mountain was recently covered with a fine hardwood forest, chiefly of oaks, and was noted for the abundance of white oak timber and tan bark oak" (Mohr, 1901). Further west in Alabama in the Warrior tableland above 1000 feet "the tan bark or mountain oak largely prevails, associated with black oak, occasionally with a scarlet oak, also with mockernut, pignut hickory and fine chestnut trees. . . ." (Mohr, 1901). Mohr reports that yellow pine formed 20–30% of the timber at lower elevations, with loblolly pine in the areas of deficient drainage. Compared with the soils found on the surface of Lookout and Sand Mountain, the soils found on the valley floor are richer and deeper, darker in color and have a small humus layer (Braun 1950:115). Mohr goes on to state that on the Cumberland Plateau in Alabama, just southwest of Lookout Mountain, deep valleys and gorges contain many upland trees as well as species of beech, elm, butternut, basswood and hemlock. It is probable that analogous valleys off Lookout Valley contain similar species of trees.

Braun reports that in an area of the Cumberland Plateau 20 miles northwest of Lookout Mountain the forest is mixed mesophytic. Beech, tulip tree and basswood comprise nearly 60 percent of the overstory. Higher on the east, southwest and south facing slopes of the plateau, oaks and hickories are more abundant with tuliptree, shagbark hickory and white oak comprising about 50 percent of the total (Braun 1950:115). While these areas are not part of the research area, they are in nearby sections of the Cumberland Plateau and can be used as analogous examples of what the forest of the Lookout Valley area may have been like in the past.

Description of the Site and University of Georgia Excavations

Site Description

The Tunacunnhee Mound Group (9Dd 25) is located 600 yards east of Lookout Creek on a slightly elevated area between two limestone outcroppings, against the western slope of Lookout Mountain. The habitation area associated with the mound group is situated on the level floodplain between the mound group and Lookout Creek to the west.

The mound group covers an area of approximately one acre and contains eight mounds (Fig. 3). Mound A was the largest of the eight mounds, covering an area of approximately 1500 ft.^{2} and constructed entirely of limestone slabs. The limestone for mound construction was most likely obtained from the limestone outcroppings to the east and west of the site. Four smaller limestone mounds were located in a partial arc around Mound A, with Mound F located directly north of Mound A, Mounds G and H located respectively to the northeast and southeast of Mound A, and Mound B located directly south of Mound A. All four of these

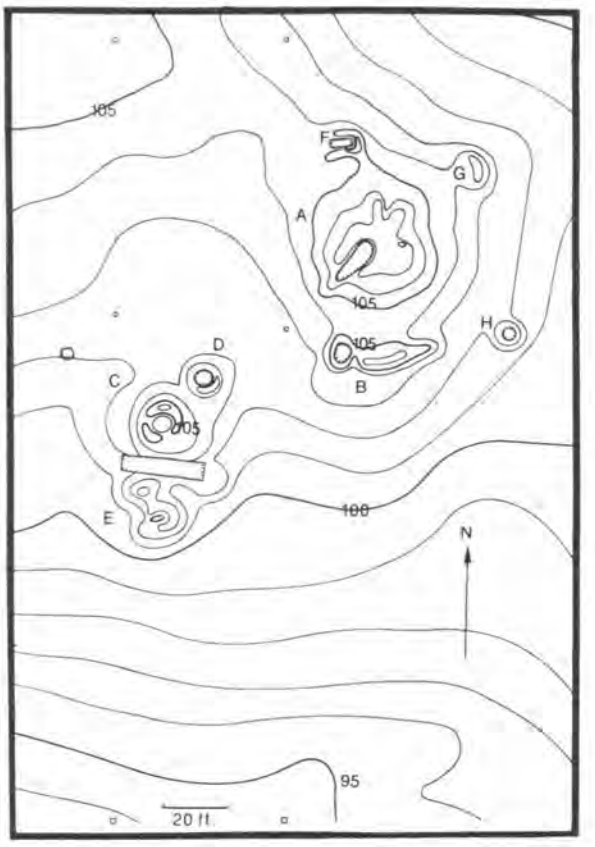


Figure 3. Topographic Map of the Tunacunnhee Site, Arbitrary One Foot Contour Interval.

smaller mounds surrounding Mound A were found upon excavation to be of modern origin.

Approximately one hundred feet to the southwest of Mound A were three tightly grouped limestone mantled circular earth mounds. Mound C was the largest of this group of three mounds, covering an area of 850 ft.^{2} Mound E was a slightly smaller mound, covering an area of 500 ft.^{2} and located to the south of and directly adjacent to Mound C. Mound D was the smallest of the three mounds, covering an area of only 113 ft.^{2} and located to the northeast of and directly adjacent to Mound C (Fig. 3).

Events Leading Up to Excavation

The existence of the Tunacunnhee[1] Mounds was known for many years, and all of the mounds had been victimized by pothunters over the last fifty years. Most of their activity had been concentrated in the centers of the mounds. Fortunately, major damage was restricted to the mound fill and did not reach the mound bases where most of the burials and features were located.

The notable exception to this was the damage done by pothunters in the winter of 1973. This digging was restricted to the southern edge of Mound C, but resulted in the destruction of at least six burials. Kenneth Pennington, Raymond Evans, and Vic Hood of the Ani-Yun-Wiya society were able to salvage and record some of the burials, features, and artifacts from this area. Members of this organization of amateur archaeologists from northern Georgia and eastern Tennessee subsequently brought the site to the attention of both the state archaeologists from Tennessee and to Pat Garrow, then at Shorter College, Rome, Georgia.

University of Georgia archaeologists were then no-

[1] The word Tunacunnhee, according to local tradition, is the Cherokee word for Lookout Creek.

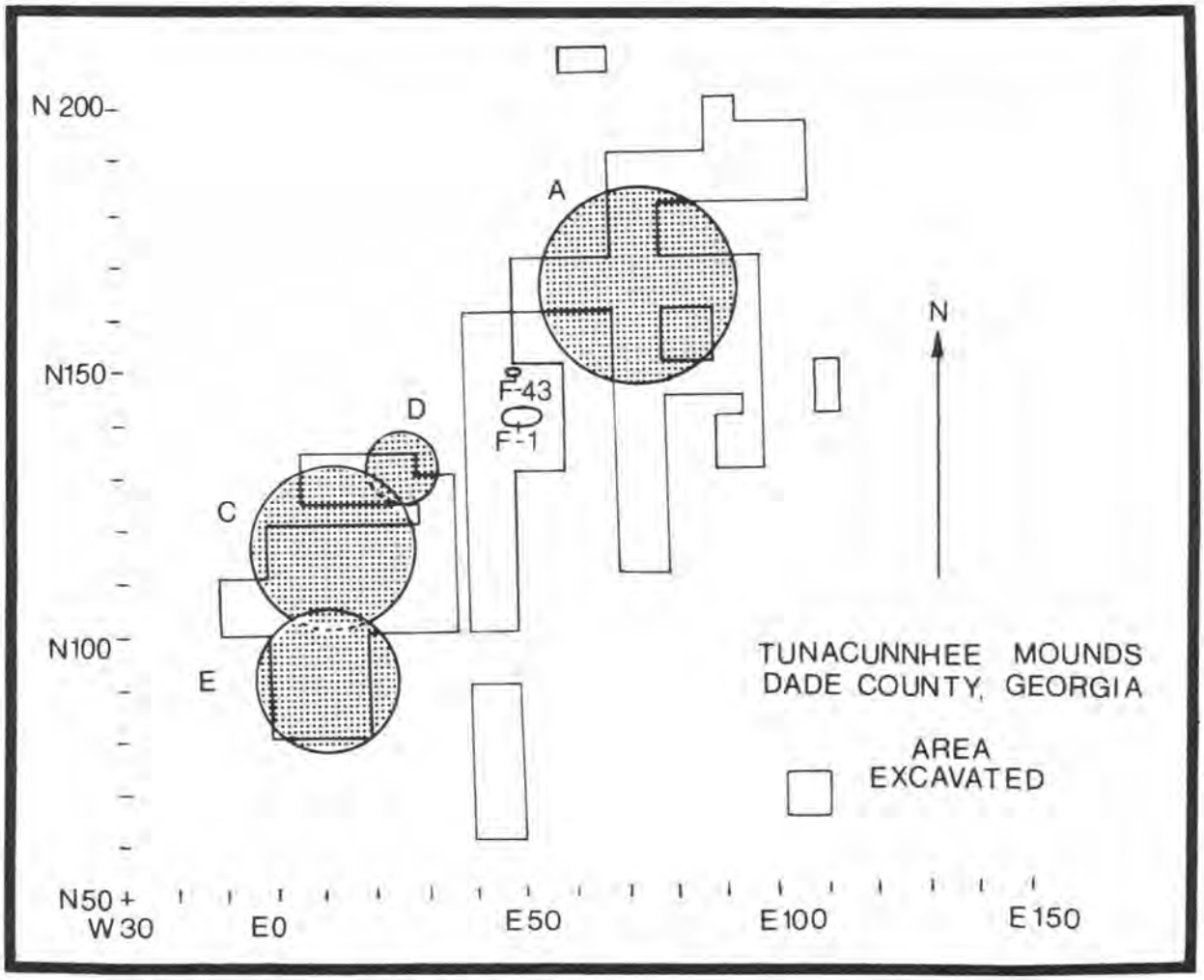


Figure 4. The Mound Area Excavated at the Tunacunnhee Site.

tified of the potential importance of the site, and with excellent support from a large sector of the local community, scheduled excavation for the summer of 1973.

University of Georgia Excavations: 1973

The material recovered from the south side of Mound C during the winter and spring of 1973 indicated that the Tunacunnhee site was closely associated with Hopewellian sites found in Ohio, Illinois and other parts of the eastern United States. A multistage research design for archaeological research at Tunacunnhee was formulated prior to the initiation of excavation in June, 1973. The initial goal of research was to determine on the basis of cultural data recovered from the site if Tunacunnhee could, in fact, be considered to be a Hopewellian site. Secondly, it was of the utmost importance to recover as much cultural evidence as possible from the site during the 1973 field season due to the immanent threat of destruction of the site by local pothunters. If the mounds were not fully excavated and as much data collected as possible, all remaining data would be destroyed by pothunters. The third goal of the research design was to test the hypothesis that the habitation area adjacent to the Tunacunnhee mounds was contemporary with the mound group thereby offering an opportunity to examine the cultural remains of the localized, domestic aspect of a Hopewellian society.

The excavations at the Tunacunnhee site during the summer of 1973 were under the overall direction of the late Dr. Joseph R. Caldwell, and covered a period of ten weeks. Excavation efforts during this period of time were focused on the mound group, with excavation of the habitation area restricted to a small test excavation.

All eight of the mounds at the Tunacunnhee site were tested during the 1973 field season, with a total area of 8000 ft.^{2} uncovered during excavation (Fig. 4). At the close of the field season the mounds were reconstructed in an attempt to return the site to its original topographic situation. The following chapter will present a detailed description of the excavations carried out at each mound, as well as the excavation units placed between Mound A and Mound C.

II. The Excavation Phase of the Tunacunnhee Project

The excavation phase of the Tunacunnhee project involved excavation of all eight mounds of the mound group, as well as excavation of areas between Mound A and C, and a limited excavation of the associated habitation area. Each of these separate excavations will be described in this section.

1. Mound A

General Description

On the basis of observation prior to to excavation, Mound A appeared to have more stone used in its construction than the other mounds at the site (Plate 2). It was decided that in order to obtain a complete understanding of the construction of Mound A it would be initially tested by starting a ten foot wide trench thirty feet from the southern edge of the mound and extending it northward through the center of the mound to a point twenty feet beyond the northern edge of the mound. A second ten foot trench was subsequently excavated on an east-west line, intersecting the north-south trench in the center of the mound (Fig. 5).

The excavation of Mound A disclosed that it was, in fact, quite different structurally from the three mounds tightly grouped to the southwest of Mound A (Mounds C, D, E). Mound A was constructed almost entirely of limestone rocks (Fig. 6). A layer of humus approximately one foot thick covered the underlying limestone rock mound matrix. Weathering action had carried additional humus down between the stones of the underlying mound matrix. None of the soil found on the surface of the mound or among the rocks of the mound core was the yellow-brown clay common in

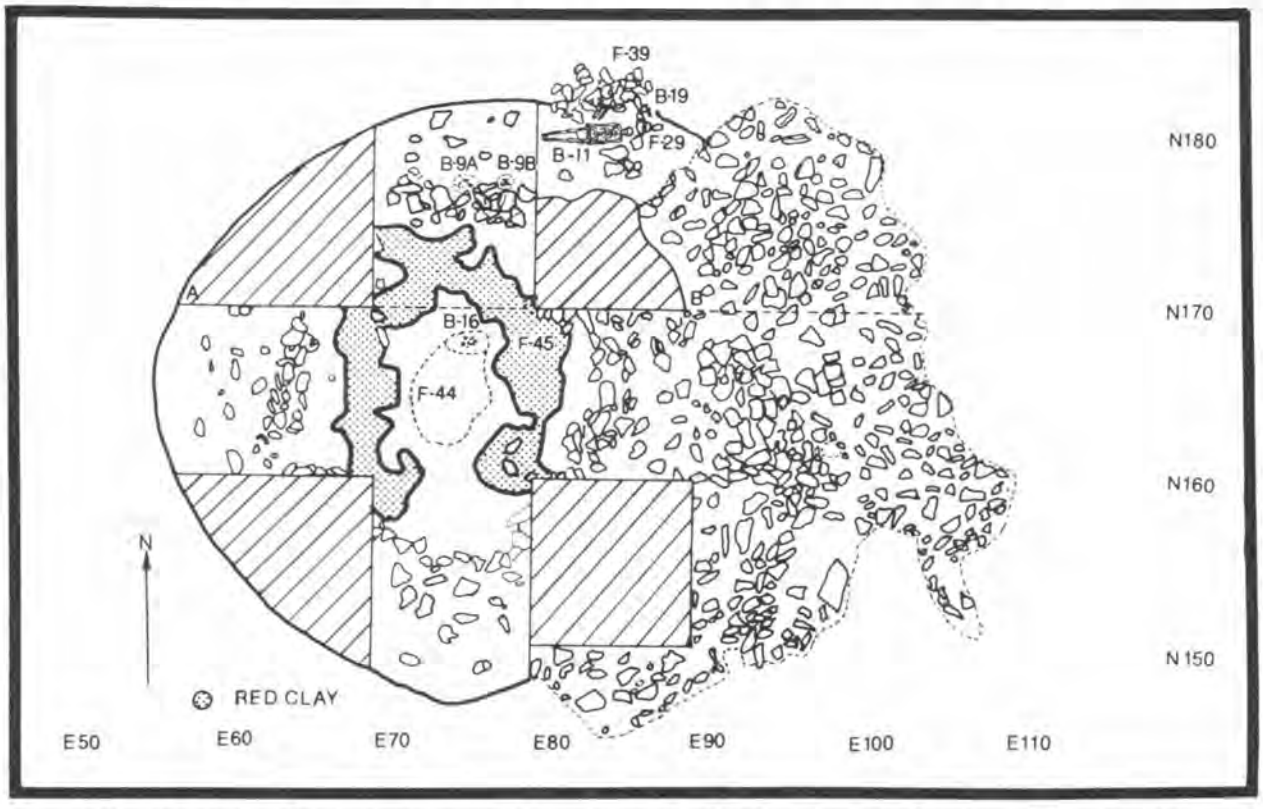


Figure 5. Floor Plan of Mound A, Showing Unexcavated Areas, Central Burial Pit, Location of Burials, and Stone "Apron" on the East Side of the Mound.

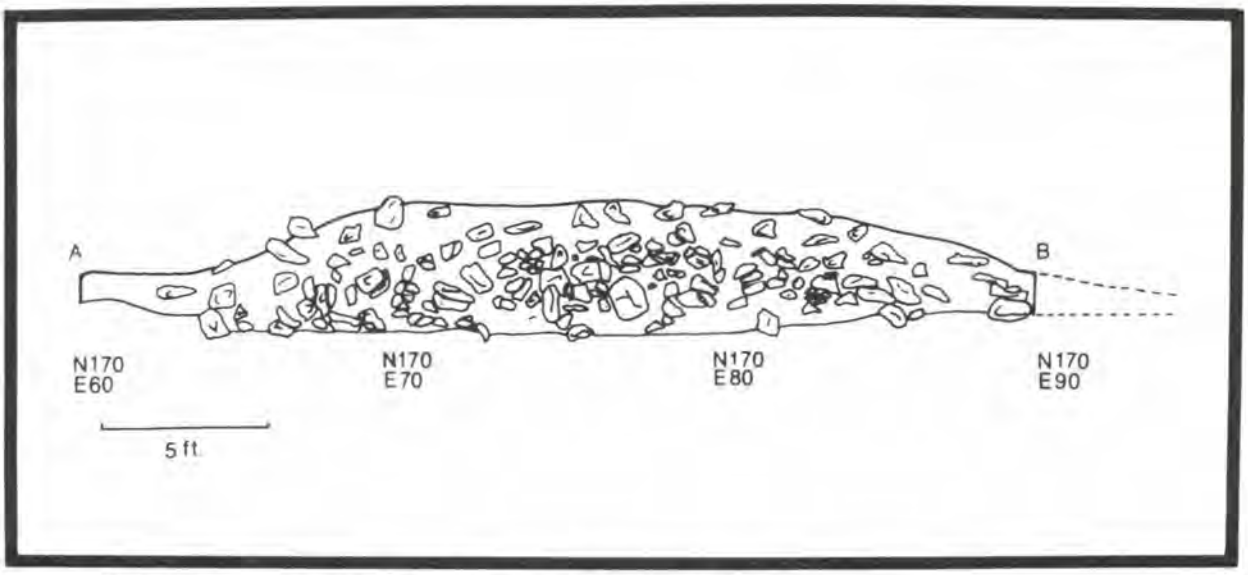


Figure 6. Vertical Cross Section of Mound A at the N170 line, Looking North.

the fill of the other mounds. The size of the stones used in the construction of Mound A varied in weight from a few pounds to well over one hundred pounds.

Construction of Mound A appeared to have taken place in three stages: (1) the digging of a central pit located below the core, (2) construction of the central stone core measuring 37 feet north-south, 40 feet east-west, and 4.0 feet high, and (3) the addition of the stone "apron" on the eastern side of the mound (Fig. 5). On the eastern side of the east-west trench, there was a deposit of brown humus above the surface of the rock core. The brown soil separated the rock core from the mass of rocks lying to the east which formed the "apron." The "apron" had been plowed in the past making the exact outline difficult to determine. Stones from the "apron" may have been the sources of rocks for the stone piles made by farmers during the historic period (Mounds B, F, G, and H). There remained a sizeable area of the "apron" that seems to be undisturbed. It is possible that the "apron" was added long after the first two stages and may be the result of non-aboriginal field clearing.

A total of five burials was recovered during the partial excavation of Mound A. The central submound burial pit, Feature 44 (Fig. 5), yielded the calcined remains of one or more individuals, while the northern fringe of the mound yielded four additional burials (Burials 9A, 9B, 11 and 19, Fig. 5).

Central Submound Burial Pit (Feature 44)

Limestone rocks protruding from the pit fill of the central submound burial pit were exposed while cleaning the floor of the mound. Further excavation of Feature 44 disclosed that the rocks extended downward and formed a major part of the pit fill. Removal of the fill, both rocks and earth, revealed a large pit extending 2.0 feet into the subsoil. The excavated pit measured 5.0 feet east-west and 6.5 feet north-south and was roughly oval in shape (Fig. 5).

Fragments of calcined and unburned bone recovered from the northern portion of the submound pit were designated Burial 16. No bone fragments were large enough, however, to conclusively determine that they represented a human cremation, or how many individuals were represented. Pieces of charcoal and fragments of calcined and unburned bone were scattered on the bottom of the remainder of the pit. The only artifacts found in association with Burial 16 were the central portion of a copper earspool recovered from the south-central portion of the pit and a small fragment of shell.

Red Clay Ring (Feature 45)

Surrounding the central submound burial pit on the west, north, and east side was a ring or low ridge of red clay (Feature 45, Fig. 5). This low ridge of clay ranged between 1.0 and 4.0 feet in width, and was approximately 1.0 foot thick.

Burials on the northern Edge of Mound A

A total of four additional burials was recovered from the northern edge of Mound A.

The remains of an adult placed in a flexed position

human mandible (Burial 9B) may have been a burial artifact of Burial 9A.

It should also be mentioned that Mound A had been subject to pothunting activities over the years. Evidence of the most obvious attempt was a large pit several feet deep located in the top of the mound. According to local collectors, "an extended burial with associated copper artifacts" had been removed from the pit "some years ago." The validity of the statement must, however, be questioned. The pit did not reach the premound humus layer and appeared to penetrate only the stone core. Furthermore, no skeletal material was found in or around the pothunters pit, tending to support the nonexistence of the burial. In other instances where burials were removed by pothunters the area was littered with skeletal remains of the burials.

One disc of a copper earspool was found on the southeastern slope of the mound 0.2 foot below the surface of the mound. One possible explanation for the presence of the copper at the location is that it was lost by a pothunting collector.

2. Mound C

General Description

Mound C was the second largest of the four aboriginal mounds at the Tunacunnhee Site, covering an area of 850 ft.^{2}, reaching a height of 5 feet, and measuring 35 feet east-west by 31 feet north-south (Fig. 7 and 8, Plate 3). It was a circular earthen structure with a mantle of limestone rocks. The stone mantle averaged about one foot in thickness and was covered by approximately 0.5 foot of humus overlay (Plate 4). The mound core underlying the limestone mantle was comprised of a sterile yellow-brown clay. This type of soil is found throughout the area and normally overlies a darker red-orange clay subsoil (Plate 5).

The southern edge of the mound had been dug into prior to the University of Georgia excavations, both by pothunters and members of the Ani-Yun-Wiya Society. The initial trench excavated by the University of Georgia field crew was as a result placed along the southern edge of the mound, and incorporated all earlier excavations (Plate 6). This initial 25 × 6 foot trench was subsequently expanded northward until Mound C was completely excavated, except for a four foot east-west baulk (Fig. 7).

The eleven burials recovered from Mound C included three burials recovered from the center of the mound, three from the northern edge of the mound, and five from the southern edge of the mound (Fig. 7).

Central Submound Burial Pit (Feature 30)

A large subrectangular pit located in the horizontal center of Mound C measured 9.7 feet east-west and 6.2 feet north-south, and extended to a depth of 2.5 feet into the sterile red clay below the mound (Fig. 7, Fig. 8).

No cultural material was recovered from the dark pit fill, but a great number of items were uncovered lying on the floor of the pit (Fig. 9). A large mica disc was uncovered in the center of the pit, just to the south of an area of dark organic material (Plate 13B). The dark material may be the remains of a container

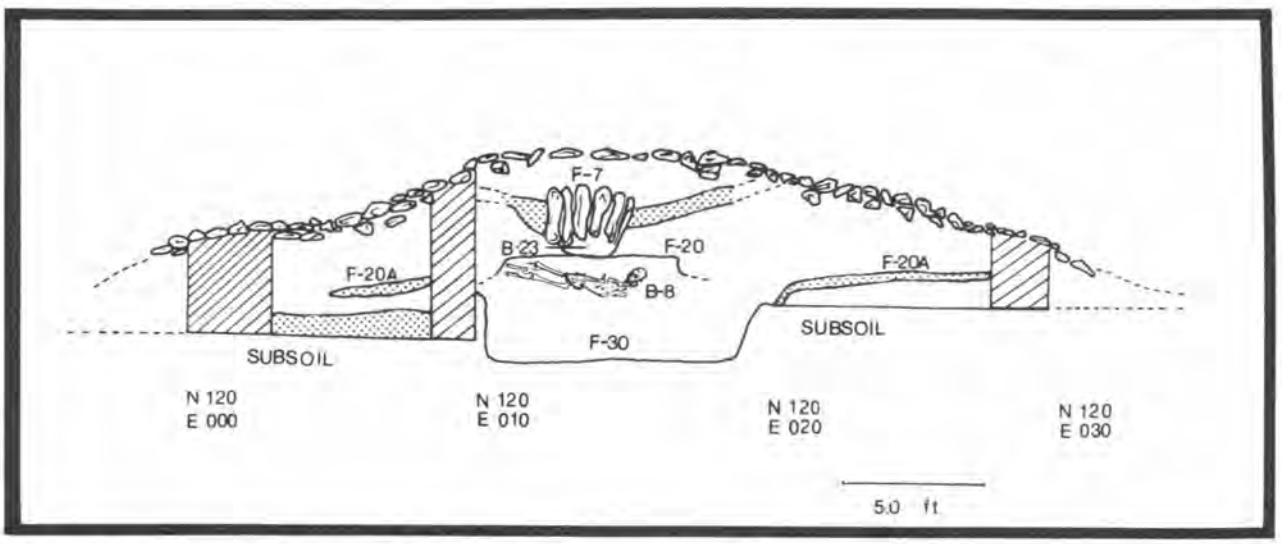


Figure 8. Vertical Cross Section of Mound C, at the North 120 Line, Facing North

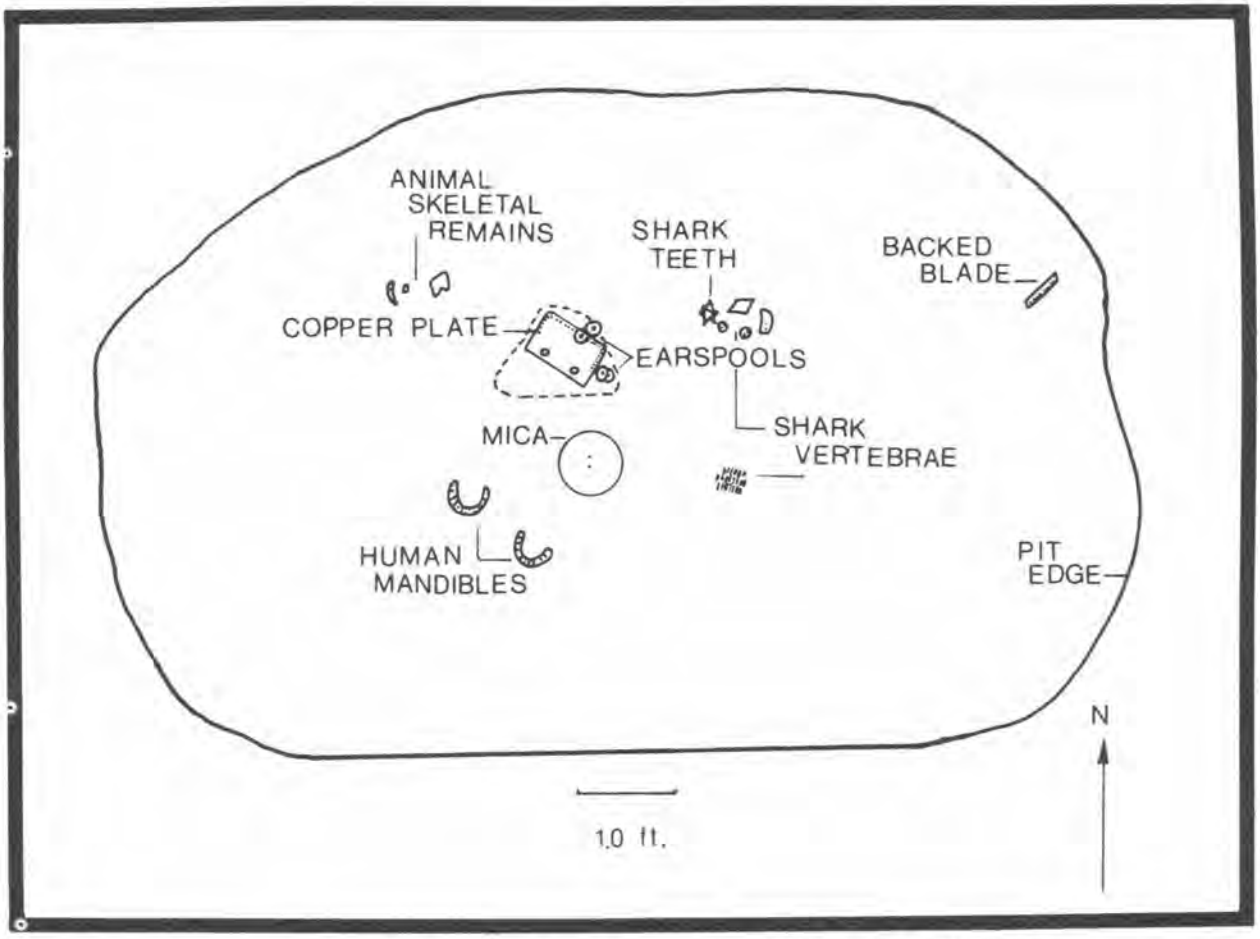


Figure 9. The Location of Artifacts on the Floor of the Central Submound Burial Pit (Feature 30) of Mound C.

or bag. Several copper artifacts were found between the two layers of the bag. Two dark bands .1 foot wide crossed the surface of the dark area joining and forming a "V" at the southern edge (Plate 7). Impressions of two types of weaving were preserved by the copper salts on the artifacts in the bag.

The top layer of fabric was removed and was easily separated from the bottom layer of the same material. Between the two layers of the bag were several copper artifacts. A rectangular copper plate (Plate 7 and Plate 13A) was found under the center of the top layer of the bag. The two dark bands visible on the surface of the bag were clearly visible as dark stains on the copper plate. Two sets of bicymbal copper earspools (Plate 7 and 14A and B) were also in the bag. One set was placed at the northern edge of the plate and the second set was at the eastern edge. Both the plate and the earspools were extremely corroded and, as previously mentioned, had impressions of the fabric of the bag preserved in the copper salts on the surface of the copper. Pieces of the fabric were still visible at several locations on the plate. Removal of the plate revealed approximately 30 small beads made from the vertebrae of a small animal below the lower side of the bag. A copper awl or pin (Plate 14E) was also found below the plate near the beads.

The material from the top layer of fabric was used for a radiocarbon determination. Analysis of the material provided a date of A.D. 150 ± 95 (UGA–ML–8). An additional number of artifact concentrations were found positioned in a roughly circular arrangement around the copper plate and earspools including: approximately 37 shark vertebrae in four parallel rows, each row with roughly an equal number of vertebrae; two adult human mandibles (Burial 12); two drilled shark teeth and two shark vertebrae (Plate 14C and D); 26 small pebbles overlying a small piece of mica and bone; and a drilled bear canine. The two human mandibles initially labelled Burial 12 may well represent grave goods rather than a partial burial. A black chert backed knife or scraper was found three feet to the east of the copper material.

Placed directly on top of the dark fill of the central submound pit was an extended burial oriented east to

west, head to the east (Burial 8). It was noted during excavation that the feet of this adult male individual (approximate age—35 years) were elevated about 0.5 foot above the skull, as if the upper portion of the skeleton had collapsed (Fig. 8). The cause of the collapse was most likely the slumping of the fill of the central submound pit, strongly suggesting that the burial was placed on top of the pit fill soon after the pit was filled.

A large mica cutout in the shape of a claw or hook was found on the top of the skull of Burial 8 (Plate 20D). The mica was placed so that the hook of the claw circled the right eye. A second piece of mica (uncut) was uncovered 0.5 foot east of the skull. At least seven bone pins were found in association with this second piece of mica. A large notched pin was positioned perpendicularly to the top of the skull. Six smaller pins were placed at a 90° angle to the first pin. All seven of the pins had been ground to a point on one end. It is possible that the pins and mica may have been part of a hair ornament or have served to hold the hair in a desired arrangement.

Red Clay Ring (Feature 20A)

A red clay ring or low ridge (Fig. 7) was found to encircle the central submound pit, and ranged from 2.0 to 4.0 feet in width and from 0.5 to 1.0 feet in thickness. This red clay band, like the similar feature observed at the base of Mound A, was most likely formed by the placement of subsoil removed from the central submound pit.

Red Clay Platform (Feature 20)

All of the red clay removed from the submound pit was not, however, placed in the circular band of red clay. A certain amount of it was employed in the construction of a platform directly over Burial 8 (Fig. 8).

The platform measured 6.0 feet east-west and 3.2 feet north-south. The thickness of the platform varied but averaged about 0.6 foot, being slightly thicker in the center than at the edge. Excavation of the platform showed that it was not solid clay but contained inclusions of brown sandy soil.

Limestone Slab Lined Pit (Feature 7)

Located in the approximate horizontal center of Mound C, two feet above the red clay platform, was a limestone slab lined pit (Feature 7) (Plate 8, Figs. 7 and 8). The top of the pit was 1.0 foot below the surface of the mound. The inside diameter of the pit (including the thickness of the slabs) was approximately three feet. The depth of the pit from the top of the rock slabs to the bottom of the pit was 2.2 feet. The pit outline could be traced by variation in soil color as well as by the outline of the rocks. The pit fill was loose in texture and darker than the surrounding soil. The soil outside of the pit was red clay, quite similar in appearance to the subsoil found below the mound. Later excavation and profiling of the pit revealed that the stone slabs had been set in a larger pit approximately 10.0 feet in diameter that had been dug in the top of the mound. The clay had been used to fill around the slabs to support them in a vertical position. The red clay fill sloped downward from the periphery of the larger pit to a depth of 3.0 feet below the mound surface. Very little red clay was found at the bottom of the larger pit, directly below the rock walls of Feature 7, indicating that the rocks of Feature 7 had been positioned on the bottom of the larger pit. Feature 7 closely resembles other stone structures reported at the Wright Mound Group, Ohio (Shetrone 1924:349). As in the case of Feature 7, the stone feature at the Wright Mounds contained human skeletal material. The burial of a child (Burial 23) was recovered from the base of the limestone slab-lined pit. Most of the skeletal material had deteriorated, but fragments of a small skull, mandible, teeth, and a number of ribs were recognizable. Dental evidence indicated that the child was in the 2–3 year age range. A three tube copper panpipe was positioned directly above the remains of the ribs and other small bones, which were preserved by the presence of the copper. A number of other artifacts, including a drilled bear canine, a hollow piece of deer antler, and numerous deer bones, were recovered from the pit. No postcranial skeletal material was found beyond the limits of the copper.

Burials on the Northern Edge of Mound C (Burial 14, 15A, 15B, 15C, 20)

A total of three additional burials (representing 10 individuals) was recovered from the northern edge of Mound C. Two of these three burials were recovered from a rock lined basin that was 2.9 feet deep and 6.6 feet east-west by 3.0 feet north-south. The top of this pit (Feature 32), was 1.0 foot below the surface of the mound (Fig. 7).

Three adult male individuals were placed in the rock lined basin directly on top of each other. The lowermost of these burials (Burial 15C) was an adult male 35 years of age. The burial was in a semiflexed position facing south, head to the east, at a depth of 2.0 feet below the mound surface. A three tube copper

panpipe was found on the chest with the long axis of the panpipe oriented northwest-southeast. The distal half of a ceramic bird effigy platform pipe was positioned 0.3 foot east of the skull (Plate 20B). A piece of extremely deteriorated shell was uncovered 1.0 foot south of the pipe.

Located directly above Burial 15C, at a depth of 1.4 feet below the mound surface, was the burial of an adult male in a flexed position (Burial 15B). The burial was oriented east-west, head to the east, facing south. No cultural material was associated with the burial.

Burial 15A was an extended adult male about 25 years old, located directly above Burials 15B and 15C, and at a depth of 1.1 feet below the rock facing of the mound. The burial was oriented east-west, with the skull to the east. A three tube copper panpipe was found on the chest area of the burial, and two dark gray chert projectile points (Plate 20C) had been placed on the right knee.

Located at the feet of the uppermost of these three vertically stacked burials (Burial 15A) at the western end of the rock lined basin, was a mass bundle burial of at least six individuals (Burial 14). The upper limits of the skeletal material was 1.0 foot below the surface of the mound, and the burial covered an area 2.0 by 3.0 feet. Preservation of the skeletal material was extremely poor, but judging from the material that was large enough to identify, all of the individuals were adults. Artifacts associated with the burial included two chert projectile points, a portion of a two hole bar gorget, and one piece of uncut mica. Burial 14 had been subjected to a great amount of disturbance by roots of trees that have grown on the mound, and for that reason it was not possible to determine the relationship of the artifacts and the burials.

Located just inside the rock facing on the northeast side of Mound C, 1.1 feet below the surface, was a portion of a human skull (Burial 20). No burial pit was observed and it appeared that the material had been included in the mound fill. The skull was badly fragmented and most of the maxilla, as well as the mandible, was missing. No teeth were found in association with the skull. Artifacts associated with the skull included a piece of uncut mica, a chert projectile point, a unifacial chert scraper, and a quartz flake.

Burials Along the Southern Edge of Mound C (Burials 1–6)

Prior to the excavation of Mound C by University of Georgia personnel, pothunters had taken several burials from the southern area of Mound C. Members of the Ani-Yun-Wiya Society talked with the people who had done the digging, and were able to obtain valuable information concerning location and description of the burials and associated artifacts. A map was prepared by E. Raymond Evans and Victor Hood from this information. While it is recognized that the accuracy of the data may not be as good as desired (through no fault of Mr. Evans or Mr. Hood) it is significant enough to be incorporated in Figure 7.

Five burials, representing from four to six individuals, were removed from the southern edge of the mound according to the informants. Most of the burials were located near the periphery of the mound. Some seem to have been placed in the mound fill, while at least one (Burial 5) had been buried in a submound pit.

Burial 5 was first uncovered in the north profile at the base of an "exploratory" trench placed along the south edge of Mound C prior to the University of Georgia field season in 1973. The burial was partially destroyed by pothunting activity sometime after it was first uncovered, during the winter of 1973 (Evans and Hood, Personal communication, 1973). Scattered pieces of skull were found in the vicinity of the burial during excavation by the University of Georgia.

The remainder of Burial 5 was excavated during the summer field session, disclosing an extended adult burial oriented east-west, head to the east. It appeared as though the burial was interred in a submound pit; however much of the pit had been destroyed by the pothunters. The outline of the northern portion was still visible but most of the southern half of the pit had been obliterated. Maximum length was 7.7 feet east-west. An accurate measurement of the width could not be obtained. The only article clearly associated with Burial 5 was a small purple stone 0.5 inch in diameter located on the right side of the abdomen, near the right elbow. The object has not been positively identified but may be the remains of a gallstone. Comparisons have been made by staff members of the University of Georgia Geology Department with modern gallstones and there is a great similarity observed.

Two copper earspools and 21 drilled shell beads were also found along the north profile of the "exploratory trench," in association with one human tooth and some small pieces of bone. It was initially believed to be a separate burial from Burial 5, and was assigned burial number 6, but since no additional material was subsequently uncovered, it is possible that this material represents part of Burial 5. Due to

the lack of accurate records, however, this cannot be positively established.

Burial 1 was located to the southwest of Burial 5 at a depth of approximately one foot below the mound surface. The burial was extended with the skull to the east. Bones, including teeth and a small section of frontal bone were recovered by Evans and Hood from dirt outside the trench. Bone fragments suggested an adult roughly 30–40 years of age. There were no associated artifacts (Evans and Hood, Personal communication, 1973).

Burials 2 and 3 were described by Evans and Hood as unarticulated bones scattered among the stones making up the mound mantle at a depth of between one foot to 2.5 feet below the mound surface. Examination of the teeth and bone fragments found around the excavated area indicate that the burials were of a child (Burial 2) and an adult (Burial 3). Some of the bone fragments appeared to Evans, Hood, and Pennington to be partially carbonized.

Burial goods associated with Burial 3 included: one complete bicymbal copper earspool; one partial bicymbal copper earspool; a three tube copper panpipe covered with sheet silver; a piece of sheet copper or breastplate; several polished bone tools; cut mica; a small chert projectile point; and a small stone celt. A flint blade found in the backdirt pile associated with Burials 2–3 by members of the Ani-Yun-Wiya Society has been identified by Martha Potter Otto, of the Ohio Historical Society, as being manufactured from material from Flint Ridge, Ohio (Evans and Hood, Personal communication, 1973).

Burial 4 was found in a semiflexed position to the east of Burial 3 (Fig. 7). The bones were in a poor state of preservation and were somewhat disarticulated due to the shifting of the stone mantle through time. The remains that were uncovered appeared to be those of a young adult. There was evidence that the bones had been burned to some extent. No artifacts were found in association with the burials (Evans and Hood, Personal communication, 1973).

Ceramics From Mound Fill

The only ceramics directly associated with burials or mounds at the site were recovered from the very northern edge of Mound C. Two small sand tempered vessels with tetrapods were uncovered at the base of the mound, 1.5 feet below the mound surface (Plate 21). Two small stone celts were found near the vessels. There was no human skeletal material associated with these artifacts.

3. Mound D

General Description

Mound D was the fourth largest of the four aboriginal mounds at the Tunacunnhee Site, covering an area of 113 ft.^{2}, reaching a height of 3 feet and measuring 12 feet in diameter (Plate 3). It is difficult to interpret the structure of the mound for several reasons. First, a large hole resulting from pothunting activities was located in the center of the top of the mound and the stone originally located on Mound D had been removed and scattered around the edge of the mound. Secondly, the close proximity of Mound C to the southwest and stones on and near Mound D removed from Mound C by pothunters added to the problem of interpreting the original size and shape of Mound D.

Removal of the surface humus and the stone mantle disclosed a rock and clay core measuring 5.6 feet east-west and 3.2 feet north-south, and 1.2 feet high. A large quantity of unarticulated fragments of human bone was scattered among and below the rock of the core.

Central Submound Burial Pit (Feature 34)

A large subrectangular pit (Fig. 10) located in the horizontal center of Mound D measured 5 feet east-west, 3 feet north-south and 3 feet deep. Excavation of the pit disclosed that it was filled with red clay and limestone rocks and contained at least six burials (Burials 18A–F) of which five were in a flexed position, one extended and an undetermined number of cremations.

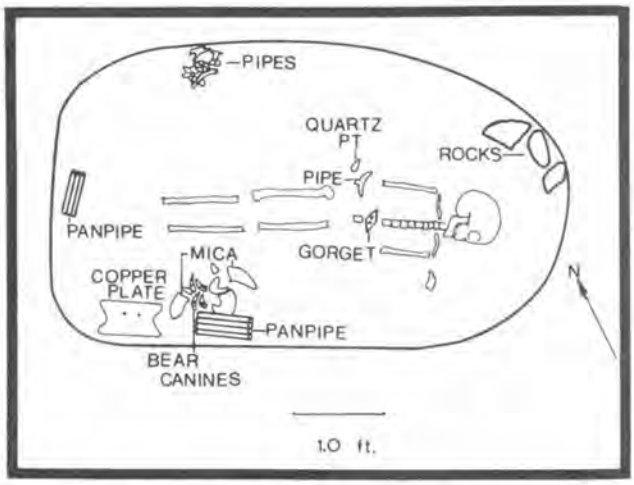


Figure 10. The Location of Artifacts Associated with Burial 18F on the Floor of the Central Submound Burial Pit (Feature 34) of Mound D.

Placed directly on the pit floor was an extended burial (Fig. 10) oriented east-southeast to west-northwest, head slightly to the south of east (Burial 18F). A cache of three platform pipes and one tubular pipe was located along the northern wall of the pit. A number of artifacts were found on the pit floor along the southern wall, including a rectangular copper breastplate and a four tube silver covered copper panpipe. A mica cutout in the shape of a bird with its wings outstretched was located north of the aforementioned panpipe (Plate 17B). Five drilled bear canine teeth were placed around the neck of the bird with a small piece of quartz crystal forming the bird's tail. A small three tube panpipe was located at the feet of Burial 18F. A narrow band of sheet silver was found near the panpipe, but apparently was not part of the panpipe. Several artifacts were placed on the abdominal area of the burial, including a quartz crystal projectile point, a diamond shaped two hole bar gorget, and a fourth platform pipe.

At least five additional burials were placed in Feature 34 in a superior position to that of Burial 18F. Burial 18E was a flexed adult oriented north-south, head to the south. The one unique feature of Burial 18E is that it had no associated skull. One fragment of sheet copper was uncovered at the approximate level of Burial 18E. It is probable, however, that the copper was originally associated with Burial 18F.

Burial 18D was a flexed adult oriented north-south, head to the south. Burial 18D was located at the approximate level of Burial 18E, and like Burial 18E, had no associated artifacts. Burial 18C consisted of a mandible and scattered bone fragments. Due to the condition of the remains, it was not possible to conclusively determine the position of Burial 18C. Burial 18B was oriented east-west, head to the east. Bone preservation was extremely poor, the remains consisting largely of scattered bone fragments. Several limestone rocks were positioned across the chest of the burial. No artifacts were found in association with Burial 18B. Burial 18A was an adult placed in a flexed position .5 foot below the top of Feature 34. Orientation was east-west, head to the east. One drilled bear canine and one crinoid stem bead were found near the burial.

4. Mound E

General Description

Mound E (Fig. 11) was the third largest of the four aboriginal mounds at the Tunacunnhee Site. The mound covered an area of 491 ft.^{2} and measured 25 feet in diameter and 4 feet high. The external appearance of Mound E was very similar to that of Mound C. Mound E was a circular earthen structure covered with a mantle of limestone rocks (Fig. 12). Many of the rocks had been removed by pothunters in the past, making it difficult to determine the original extent of coverage of the mantle.

Construction of Mound E apparently took place in three major phases: (a) digging of the central pit (Feature 33) at the original ground level; (b) construction of the central earthen core; (c) placement of the rock facing over the earth core. A layer of dark soil approximately .1 foot thick was located below the mound fill indicating that the original premound humus layer had not been removed prior to the construction of Mound E. Later excavation disclosed several pieces of cut mica on the surface of the humus layer immediately below the mound fill.

Mounds C and E appeared to overlap at the area of contact. Excavation of Mound E was initiated at the western edge of the mound and proceeded eastward to a point midway through the mound. A north-south profile was established at that point to aid in determining the relative age of the two mounds. It was determined that Mound C was located below the earth fill of Mound E, supporting the hypothesis that Mound C was built prior to the construction of Mound E.

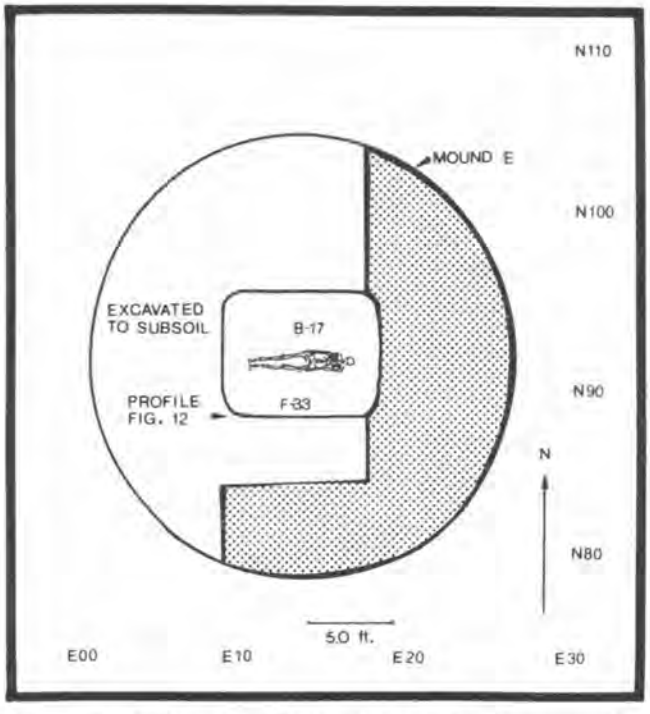


Figure 11. The Floor Plan of Mound E, Showing Unexcavated Areas and Central Burial Pit.

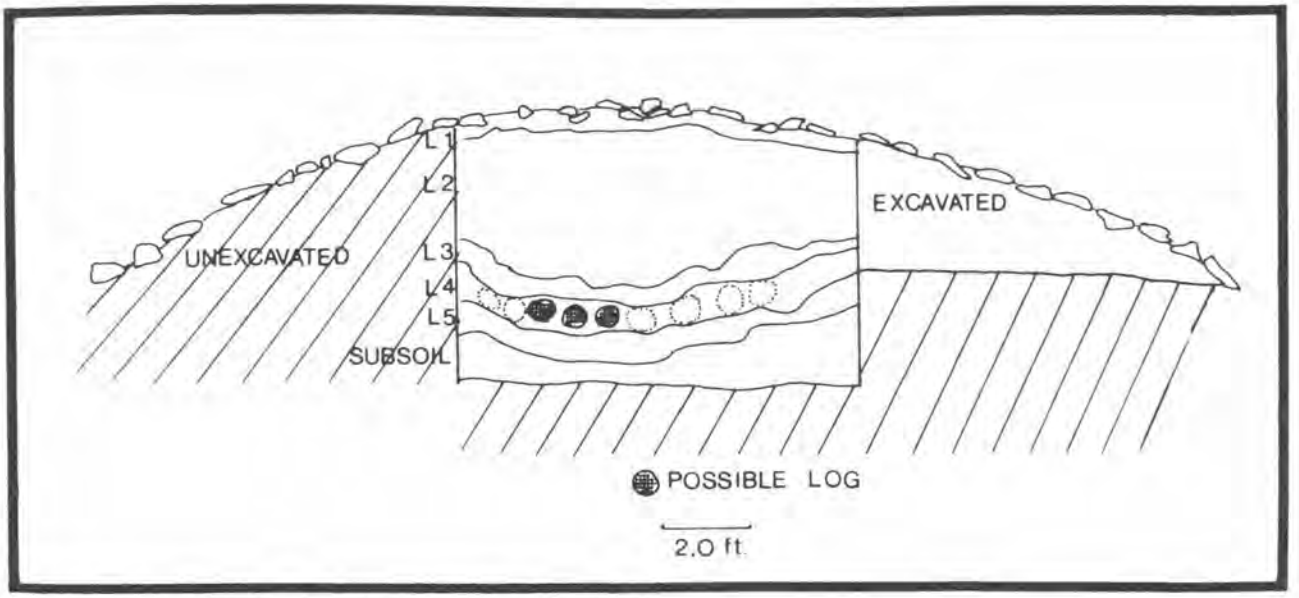


Figure 12. Vertical Cross Section of Mound E, Facing South (See Figure 11 for Profile Location).

Central Submound Burial Pit (Feature 33)

A large central submound burial located in the horizontal center of Mound E measured 10.3 feet east-west, 7.4 feet north-south and 2.6 feet deep (measured from the original ground level). Excavation of Feature 33 uncovered an extended adult (Burial 17) resting on the red clay subsoil at the bottom of the pit oriented east-west, head to the east (Fig. 13).

Burial 17 was an extended adult male, 35–40 years old, located in Feature 33. The burial was placed directly on subsoil, there being no indication that there was any type of pit lining between the burial and the pit floor. Preservation of the skeletal material was quite poor, only the skull and the long bones being fully preserved. The pelvis and some of the vertebrae were indicated by white stains.

Numerous artifacts were found in association with Burial 17 (Plates 15 and 16). Three copper panpipes were located in the chest area. Two copper earspools were also present, one being located 0.5 foot north of the skull, the other near the left hand. A monitor platform pipe made of polished rhyolite porphyry (Plate 16B) was uncovered 2.0 feet north of the right tibia, near the north wall of the pit. A large ground stone celt was found against the east wall of the pit (Plate 16A).

A cremation designated as Burial 17A was represented by an area of calcined bone located between the left and right tibia of Burial 17 (Fig. 13). There was no indication that the cremation had taken place in the pit. The pieces of bone that remained were too small for identification as to sex or age.

Mound E contained the only evidence of logs being utilized in construction of either the mound or submound burial structures at Tunacunnhee. Examination of the north and south profiles of the mound disclosed six separate strata (Fig. 12). The upper level (L–1) was formed by the present topsoil-humus layer. Underlying the humus was a layer of mottled red and black clay (L–2) 2.0–3.5 feet thick. The third level (L–3) contained red clay with small pieces of angular black chert scattered throughout. L–3 was .50–1.0 foot thick and quite similar in appearance to the clay subsoil below the central submound burial pit. Level 4 (L–4) was a layer of dark brown soil .50–.75 foot thick. Level 5 (L–5) was a yellow loamy clay 1.0–1.5 feet thick. The red clay subsoil was located below L–5.

The dark brown soil of L–4 appeared to contain circular stains 0.5–1.0 foot in diameter, possibly representing logs placed north to south across the top of the pit. In this layer, small pieces of charcoal were observed that somewhat conformed to the circular shape of the logs. The dark circular stains in the northern and southern profiles of L–4 were dug out disclosing that they projected into the walls of the pit several inches before terminating. The level of the logs approximated the original premound ground surface, as if they had been placed on the ground to cover the top of Feature 33. A semicircle of red clay was disclosed near the western edge of the mound at a depth of approximately 1.5 feet below the mound surface. This structure was formed when the earth was removed during the digging of Feature 33 and placed

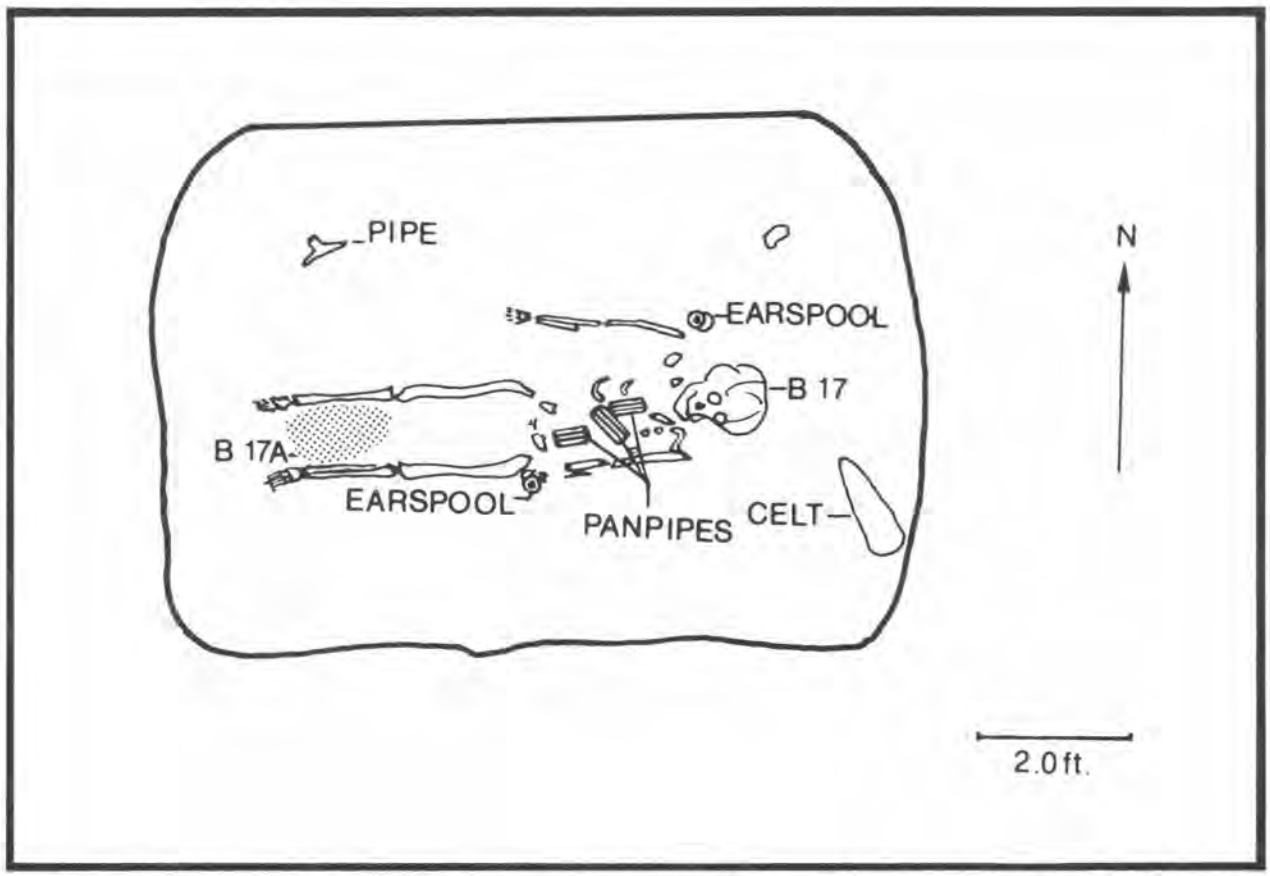


Figure 13. The Location of Artifacts Associated with Burial 17 on the Floor of the Central Submound Burial Pit (Feature 33) of Mound E.

around the edge of the pit. It is analogous to Features 20A and 45 found in Mounds C and A respectively. Outside the red clay structure was an area of dark soil, apparently the original humus layer previously discussed.

Burials from the South Side of Mound E

Three burials were located in the mound fill of Mound E south and above Feature 33. Burial 21 was an extended adult oriented east-west, head to the east. Burial 13A and 13B were positioned .5 foot above Burial 21. Burial 13A was a flexed adult oriented east-west, head to the east. Burial 13B was placed in a flexed position below Burial 13A. No artifacts were found in association with these three burials. Bone fragments of another individual were scattered among the bones of Burial 13A and 13B indicating that there may have been an additional burial present. No pit outline was visible in the area of these three burials, thus making it likely that all three were inclusive burials placed in the mound fill at the time of the construction of Mound E.

An additional burial was removed from an unexcavated area on the south side of Mound E by non-professional archaeologists following the completion of the University of Georgia excavation. The burial was described as being in a semiflexed position with the head to the east. It is estimated that this burial was located approximately 2.0 feet below Burial 21. Due to the unique artifacts associated with this burial it is considered to be worthy of mention in this report. A small copper adze was positioned on the chest of the Burial (Plate 24C & D). The adze measured 2.95 inches long and weighed 103.9 grams. Two wooden spools associated with this burial were the only occurrence of wooden artifacts at Tunacunnhee (Plate 24 A & B).

5. Non-aboriginal Stone Structures

Four mounds at the Tunacunnhee Site (Mounds B, F, G, and H) were originally thought to be aboriginal but later proved to be of recent origin (Fig. 3).

Mound B. Mound B was a linear stone mound lo-

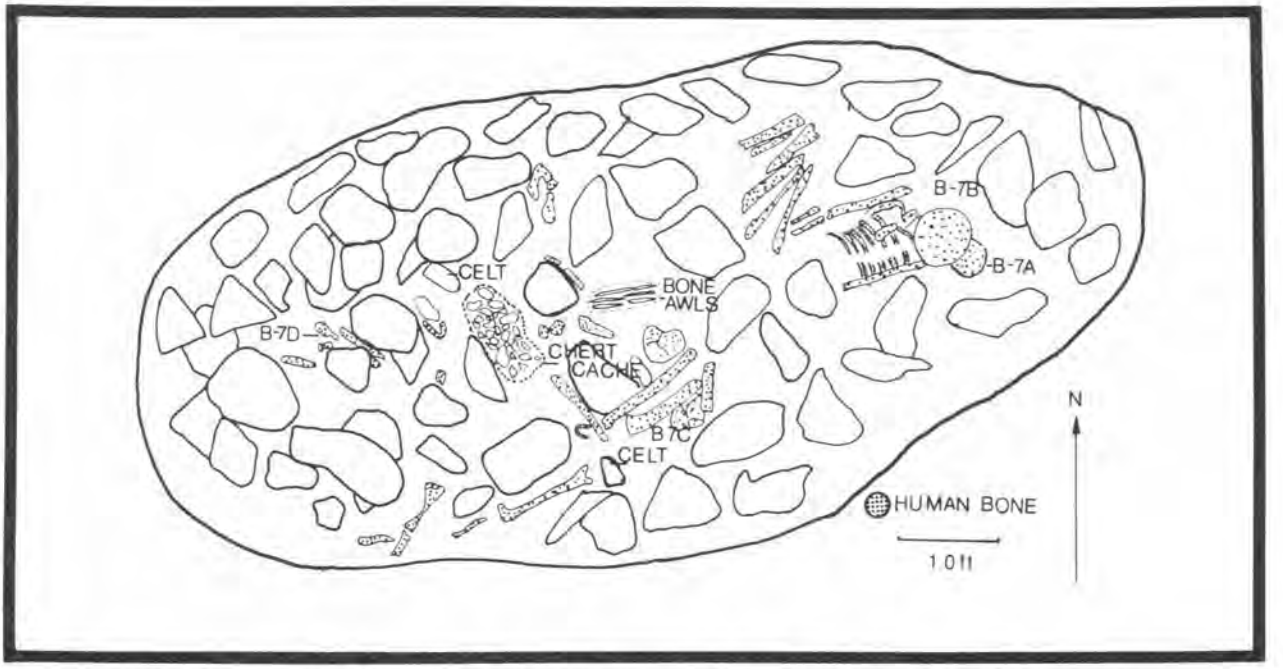


Figure 14. The Location of Artifacts Associated with Burials in a Stone Filled Pit Between Mounds A and C (Feature 1).

cated south of Mound A and measuring 35 feet east-west, 10 feet north-south, and 3.4–4.0 feet high (Plate 2). The mound was built entirely of loosely piled limestone rock and was excavated while digging the north-south trench through Mound A. An iron plowshare was uncovered 1.0 foot below the top of the mound. The presence of the plowshare in the mound casts doubt on the prehistoric origin of Mound B. No other artifacts were found in the mound.

Mound F. Mound F was a small circular limestone mound 10 feet in diameter and located 20 feet north of Mound A. An iron plowshare was also found in this mound. No other artifacts were found in the mound.

Mound G. Mound G was located 40 feet east of Mound F and 20 feet northeast of Mound A. This mound was similar in appearance to Mound F, being circular and made of loosely piled limestone rocks. The southern half of the mound was excavated and plow scars, oriented southeast-northwest, were observed in the subsoil below the mound base.

Mound H. Mound H was located 50 feet south of Mound G and 30 feet southeast of Mound A. The mound was similar to Mounds F and G in size and construction. No artifacts were associated with Mound H.

Construction of these four mounds was unlike that of mounds of aboriginal origin in that the more recent mounds did not have any of the dark humus soil on the surface of the limestone rocks or among the rocks in the interior of the mound core.

6. Non-Mound Features

Stone filled burial pits between Mounds A and C (Features 1 and 43)

In the process of excavating the first series of squares on a north-south line between Mounds A and C (Fig. 4), an area of limestone rocks was encountered approximately 10.0 feet southwest of Mound A and 0.75 foot below the ground surface (Plate 9). Excavation of the surrounding area disclosed an oval shaped pit measuring 9.35 feet east-west, 5.20 feet north-south, and 2.90 feet deep. Removal of the soil covering the feature revealed fragments of human bone among the rocks including pieces of skull, long bones, teeth, and ribs. Removal of the surface rocks disclosed two adult human skulls in the eastern end of the pit. All of the burials located in Feature 1 were designated as Burial 7, with letters assigned to each individual burial that could be isolated. The lack of separation of burials made association of artifacts and burials difficult. The associations discussed below were made during excavation.

The two skulls and associated skeletal material were designated as Burials 7A and 7B (Fig. 14, Plate 10). Both burials were flexed and approximately thirty-five years old. Burial orientation for both was east-west, head to the east. The upper skull (Burial 7B) was located 1.1 feet below ground surface, directly below Burial 7A. A perforated deer antler tool was found with Burial 7A, while a small greenstone

celt and a piece of a polished stone gorget were found with Burial 7B.

In addition to Burials 7A and 7B, numerous human skeletal parts were found among the rocks at the same depth as 7A and 7B, including pieces of adult skull and the partial remains of a child.

Below the upper level of burials (7A and 7B) several additional burials were located, as well as many fragments of bone that could not be associated with any particular burial. Numerous pieces of calcined bone were included among the scattered fragments. Burial 7C was found in the western end of the pit and consisted of several long bones, two ribs, and a mandible. No complete skull was found with 7C, but many fragments of skull were found in the surrounding area. Burial 7D consisted of an area of totally disarticulated bone in the western half of the pit. Burial 7E was a cremation located near the center of the bottom of the pit some 2.0 feet below the surface.

Numerous artifacts were found in Feature 1, but due to the movement of the burials and artifacts caused by the settling of the soil on the rocks, it was difficult to determine the particular burial with which the artifacts were originally associated. In addition to those items already mentioned, a cache of fifty-seven pieces of chert was located near the center of the pit, west of the feet of Burial 7C. A cache of six bird bone awls was found 1.0 foot east of the chert and two greenstone celts were found in the center of the pit near Burial 7C.

In summary, Feature 1 was a stone filled burial pit containing at least six individuals, five adults and one child. The burial goods from Feature 1 were quite different from those accompanying the burials in the mounds. The artifacts seem to be utilitarian items as opposed to artifacts that might be called "ceremonial" or "status" associated artifacts.

An additional limestone filled burial pit (Feature 43) was located 8.0 feet north of Feature 1. The top of the pit was 1.0–1.5 feet below the ground surface and covered an area 2.0 × 3.0 feet. Removal of the rocks revealed a number of disarticulated bones including pieces of a human skull at the eastern edge of the pit and fragments of femur and tibia at the western edge. The skeletal material was designated as Burial 22 and, judging from the few bones that could be identified, was identified as an adult flexed burial oriented east-west, head to the east.

7. Excavation of the Habitation Area

The location and analysis of habitation areas affiliated with Hopewellian mortuary activity has been a problem for archaeologists most of this century. The concern for lack of data pertaining to the domestic aspect of Hopewell is not new. There is evidence in published reports that archaeologists were puzzled by the lack of such habitation sites earlier in the 20th century, and numerous but unsuccessful attempts were made to locate them. Investigation at Fort Ancient and Fort Hill in Ohio were designed to locate the settlements associated with these hilltop enclosures (Pruefer 1965:125–126). The McGraw site, located in Ross County, Ohio, and excavated by Pruefer, has contributed much data toward the interpretation of the domestic aspect of Hopewellian societies in Ohio (Pruefer, 1965).

Historically there have been several problems that impeded the location and analysis of Hopewellian domestic areas. Emphasis was placed on the excavation of burial mounds for many years, leading most people to conceive of Hopewell as a mortuary-ceremonial complex. A long list of attributes commonly found in these burial mounds located throughout the eastern United States was compiled that included: copper earspools, copper panpipes, ceramic figurines, mica, obsidian, and other exotic items. Partially as a result of the emphasis placed on the excavation of mounds, any settlements associated with such burial mounds were neglected.

A second factor contributing to the problem of linking mounds with habitation areas developed as a consequence of the emphasis placed on mortuary activity. Artifacts associated with burials in the mounds were quite unlike those found in nearby habitation areas. Hopewellian burial artifacts found throughout the East are very similar in appearance, whereas there tends to be strong regional variability in domestic materials (Caldwell 1964:137). As an example, some ceramics found in Hopewellian burial mounds in Ohio are classified as "Hopewellian Series" pottery and have attributes including rocker stamping and cross-hatched rims, while different types of ceramics are found in the habitation area and are representative of the local tradition (Pruefer 1965:130).

A third problem was created by the presumptive nonagricultural subsistence base of Hopewell which deterred most archaeologists from looking for habitation areas on the floodplain where the best agricultural land would be located. Paradoxically, most archaeologists were searching for large settlements despite the hypothesized nonagricultural base of Hopewell, instead of smaller farmsteads or hamlets (Pruefer 1965:127).

Despite the growing data base pertaining to Hopewellian habitation or domestic areas, there is

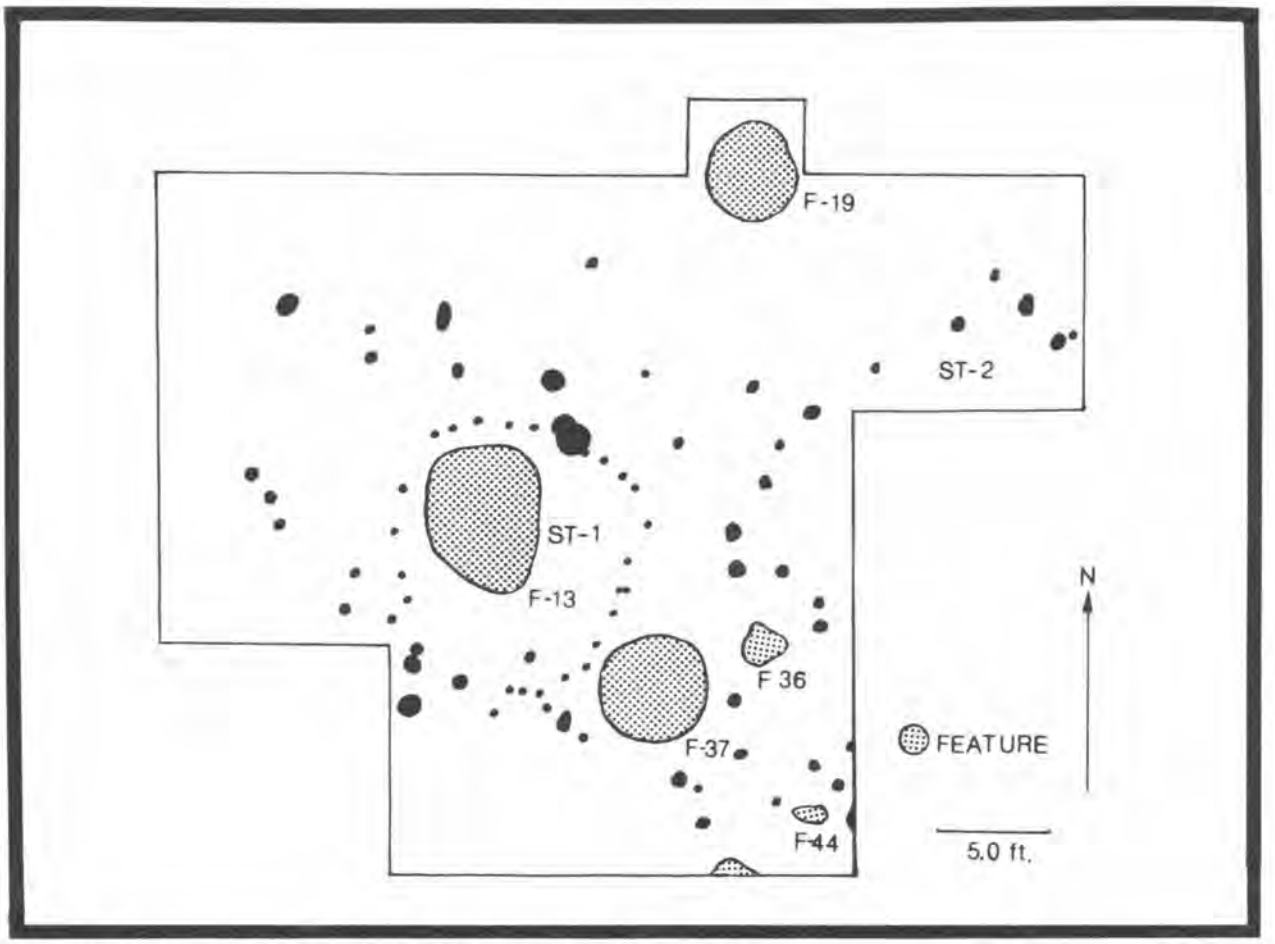


Figure 15. The Location of Features in the Block Excavation in the Village Area.

still a great need for additional data concerning the organization and operation of the domestic aspect of Hopewell. The Tunacunnhee site is a potential source of data that will aid in analyzing the above problem.

The habitation area at the Tunacunnhee site is located 200 yards southwest of the mound complex (Fig. 2, Plate 11). The area has been subject to plowing for many years and as a consequence, the upper portion of the midden has been severely disturbed. A large number of artifacts including ceramics and lithics were recovered from the plowzone. Some midden and the lower portion of features are, however, preserved below the plowzone.

Investigation of the habitation area was considered secondary in importance to excavation of the burial mounds in the 1973 season. The limited excavations carried out were designed primarily to determine the existence of a habitation area in the vicinity of the mounds, and to obtain sufficient data to establish its temporal and cultural relationships with the mounds. An area of approximately 2,000 square feet was excavated in the habitation area (Fig. 15).

Features disclosed during the excavation included postmolds, a stone-filled pit (Feature 13), and rounded bottom storage or refuse pits (Features 19 and 37). As previously mentioned, only the lower portions of these features were preserved due to plowing.

One complete and one partial structure were identified during excavation of the habitation area. Structure One (ST-1) consisted of a circular pattern of postmolds 10 feet in diameter, surrounding a rock-filled pit. The postmolds were approximately 0.3 foot in diameter and 2.0 feet apart. The structure may represent a sweathouse similar to that described by Wray et. al., (1961) for the Weaver Site in Fulton County, Illinois. The rock-filled pit (Feature 13) within Structure One (Plate 12) measured approximately 5.0 feet in diameter and extended 2.5 feet below the present ground surface. The sides of the pit were fire-baked red clay. Pit fill included bone, chert flakes, limestone rocks, and limestone and sand tempered ceramics.

Structure Two (ST-2) consisted of a roughly semicircular pattern of postmolds east of Structure One. The postmolds delineating Structure Two were

larger in diameter and extended deeper into the subsoil than those in Structure One, suggesting a substantially larger building. Due to lack of time, only a small portion of the postmold pattern was uncovered. No interior features were found in the small area of the structure that was excavated.

Preliminary analysis of the material recovered tends to support the hypothesis that the habitation area is roughly contemporary with the mounds. The supporting evidence includes a radiocarbon determination of A.D. 280 ± 125 (UGA–ML–10) that was obtained from charcoal recovered from the undisturbed lower portion of Feature 19, a refuse pit. If the Sigma factors from this date and the one obtained from Mound C are taken into consideration, the two dates are roughly contemporary. (A second apparently less instructive radiocarbon determination of A.D. 440 ± 395 (UGA–ML–9) was also obtained from Feature 13 in the habitation area.) Ceramic material found in Mound C is very similar in appearance to some of that recovered from the habitation area. Projectile points found in association with Burial 15A in Mound C are of a similar type (Greenville-Nolichucky) as those found in the habitation area (Plate 23). Both copper and mica were also recovered from features in the habitation area.

III. Analysis of Cultural Material from the Tunacunnhee Site

Introduction

Numerous techniques of classification have been used in data analysis, including those involving categories based on raw material used in manufacturing an artifact, the hypothetical function of an artifact, cultural ideals or mental templates of the manufacturer of the artifact, statistics, or other categories devised for the convenience of the analyst. The goal of the analyst will determine the precise approach he will choose in analyzing the data.

Binford has recognized three categories of cultural items: technomic, socio-technic, and idio-technic (Binford 1962). Artifacts from Tunacunnhee fall into at least two of these categories, technomic and socio-technic. The greatest number of technomic artifacts were recovered from the habitation area while most of those items classified as being socio-technic were from the mounds. Undoubtedly, the classification of a particular artifact as being technomic or socio-technic may be partially influenced by the preconceived ideas of the analyst, but this distinction is still useful in understanding the site.

The habitation area contained technomic artifacts used to cope with the physical environment and represent the local tradition. The burial mounds contained the socio-technic artifacts. According to Peebles, socio-technic artifacts are "primarily symbolic in nature and function to articulate individuals one with another. They are the material means of status communication and their information content is relative to the individual with the culture" (1971:69). Many of these artifacts identified as being socio-technic at the Tunacunnhee Site are similar to artifacts found throughout a very wide area of the eastern United States that have commonly been given the name Hopewell.

Another approach to classifying artifacts that archaeologists frequently employ is based on the function of the artifact. Winters (1969) utilized this approach in his analysis of the material culture of an Archaic population. Ten functional categories were established by Winters as a basis for classification of artifacts. Any classification system based on function is dangerous, as Winters admits, because it is quite often difficult to determine the specific function of objects with any high degree of confidence.

Most of the material recovered from the Tunacunnhee Site was recovered from a burial context. Much of this material is similar to material of the Hopewellian Interaction Sphere in other areas of the United States. Hopewell has been described by Caldwell as having two salient features: "striking regional differences in the secular, domestic, and non-mortuary aspect of the widespread Hopewellian remains, and an interesting, if short, list of exact similarities in funerary usages and mortuary artifacts over great distances" (1964:138). In the context of the Tunacunnhee Site, utilitarian, domestic, secular burial items are respresentative of the regional tradition and represent one category of burial objects. In contrast, artifacts that are identified as being pan regional and representative of Hopewell form a second category of burial items.

In order to facilitate the classification and to aid in intersite comparison, artifacts will be classified in nominal categories. The process of nominal classification simply involves "the consistent use of a set of unambiguous names as labels for classifying objects or events." The placement of an observation in a particular category indicates that the object or event is different from observations in other categories (Young and Veldman 1972:4).

1. Panpipes

Nine copper panpipes were recovered from burials at the site (Plates 15 and 18). Seven of the panpipes were in adequate condition to permit measurement, although exact measurements were difficult to obtain due to the deteriorated condition of the copper. The other two specimens were represented only by fragments of copper. One of the complete specimens was

found by pothunters and was not available for detailed analysis. Data concerning the panpipes are summarized in Table 1.

Table 1. Copper panpipes at Tunacunnhee: data summary

Location	Length	Width	Number of tubes	Comments
1. Mound C Burial 3	5.5"	1.5"	3	*Silver covered*
2. Mound C Burial 15A	4.9"	1.6"	3	
3. Mound C Burial 15C	Fragmentary	–	3	
4. Mound D Burial 18F	Fragmentary	–	3	
5. Mound D Burial 18F	6.2"	2.0"	4	*Silver covered*
6. Mound C Burial 23	4.0"	1.7"	3	
7. Mound E Burial 17	4.1"	1.7"	3	*Wrapped in bark*
8. Mound E Burial 17	5.1"	1.7"	3	
9. Mound E Burial 17	4.5"	1.7"	3	

The range of variation in the length of panpipes is from 4.0 to 6.2 inches, with a mean length of 4.9 inches. Eight of the panpipes recovered had three tubes; one had four tubes. Two of the specimens were covered with silver, apparently attached to the copper sheet by cold hammering.

The construction of all nine panpipes was similar, differing only in the relative size and number of tubes. Pieces of cane were contained in the tubes of the panpipes and have been identified as being the remains of *Arundinaria spp.* that grow in the vicinity of Tunacunnhee today (W. H. Duncan, Personal communication, 1974).

The upper surface of the panpipes were indented between the reeds and the bottom surface or back was flat with an overlap of the ends of the sheet of copper of one quarter to one half inch. There were normally four perforations on the back near the edge of the overlap. One of the panpipes had pieces of "string" running between the two holes on each end of the panpipe (Plate 15C). The panpipe in question was also wrapped in a vegetable material that appeared to resemble tree bark. X-rays were made of the most complete and well preserved specimens from Burial 17 in an attempt to detect any internal structures that were not visible from the exterior. The x-ray negatives did not show any variability in the length of the opening in the tubes, the presence of "stoppers," or any other attributes that might indicate the use of the panpipe. It appeared that the reed tubes inside the copper casing extended from one end of the panpipe to the other, all being approximately the same length and diameter.

Six of the eight panpipes recovered during the University of Georgia excavation were located in the chest area of burials. The end of the panpipe closest to the head of the burial was usually positioned to the left of the longitudinal centerline of the burial. According to James B. Griffin, placement of panpipes on the chest area is a common trait among Illinois Hopewellian burials (Griffin et. al., 1970:112). Examples of this occurred at the Rutherford and Klunk Mound in Illinois (Griffin et. al., 1970:101). The only exception to this location of panpipes was with Burial 18F in Mound D (Fig. 10) where the two specimens were placed near the walls of the burial pit.

Two of the burials at the Tunacunnhee Site contained more than one panpipe. Burial 18F had a four tube, silver covered panpipe located against the south wall of the central burial pit, and a three tube panpipe placed against the west wall. Three panpipes were found in association with Burial 17 in Mound E. All three were located on the chest, along a line extending from the sternum to the pelvis. The only association of a panpipe with a nonadult was Burial 23 in Mound C. The burial has been identified as being a 2–3 year old child.

An additional copper object located in the fill of Mound A may represent a tenth panpipe (Plate 20A). It lacks the characteristic corrugations on the upper surface, however, and is considerably shorter than the other nine panpipes. The copper band measured 2.3 × 1.5 inches, or about half as long as the mean length of the nine other panpipes. The band did have the four perforations on the bottom side that was a characteristic attribute of the other panpipes.

Panpipes excavated at the Tunacunnhee Site are very similar to those found at other Hopewellian affiliated sites in the East, including the Hopewell Site, Ohio; Knight Site, Illinois; Rutherford Site, Illinois; Le Vesconte Site, Ontario; Helena Crossing Site, Arkansas; Mandeville Site, Georgia; and the Crystal River Site, Florida. The specimens from Tunacunnhee fall within the range of variation of length, number of tubes, and type of construction characteristic of panpipes recovered from the aforementioned sites. Lengthy descriptions of panpipe construction are given by Griffin et. al. (1970) and Ford (1963). Caldwell observed that the panpipes in

Ohio, Illinois and Georgia are virtually duplicated in Florida (1964:137).

Tunacunnhee has as large a quantity of panpipes as any reported site in North America. Only the Hopewell Site, Mound 25, Ross County, Ohio (Griffin, et. al., 1970:99) and the Le Vesconte Mound, Northumberland County, Ontario, Canada (Ritchie 1965:219) contain an equal number. It is interesting to note that large concentrations of panpipes, generally considered to be "typical" Hopewellian items, occur well outside the area recognized as being the center of Hopewell. The addition of the nine panpipes from Tunacunnhee to the list of panpipes assembled by Griffin et. al. (1970) means that over one third of all the copper panpipes reported from the Eastern United States came from three sites: Le Vesconte (9); Mandeville (5); and Tunacunnhee (9). All of these sites are located well outside of the Ohio-Illinois area.

The preliminary analysis of the copper from Tunacunnhee done by Schneider (1974) and Goad (1974) tends to indicate that all the panpipes were not being manufactured at the "Ohio panpipe factory," but at least some were probably being made at the local level from local copper.

2. Earspools

Fifteen partial or complete bicymbal copper earspools were found at the Tunacunnhee Site (Plates 14A and B and 15F). Three complete and one partial earspool were recovered by pothunters from Burials 3 and 6 in Mound C. These were later photographed and described by members of the Ani-Yun-Wiya Society.

Two distinct types of earspools are identifiable from the samples recovered. Most of the specimens were "pulley" or "bun" shaped and were designated as Type A (Plate 14A and 14B). Two earspools recovered from Burial 17 in Mound E were designated as Type B (Plate 15F). The diameter of Type A earspools ranges between 1.6–1.8 inches. The outer edge of the discs was inwardly curved at roughly a 90° angle, forming a convex surface. Type A earspools appeared to be constructed using five pieces of copper: two outer discs, two inner discs, and a central column of "rivets" that held the discs together. The outer disc of Type A earspools had holes in the center of the depression. The "rivet" was extended through the hole and flattened to hold the earspool together. The central column was wrapped with a vegetable fiber between the discs. The fiber appeared to be natural, unaltered plant material as opposed to being a twisted or braided string.

Nine earspools can definitely be assigned to Type A. Earspools of this type were associated with Burial 3 (2) Mound C, Burial 6 (2) Mound C, and Burial 12 (4) Mound C. Numerous other fragments of earspools which appeared to be Type A were found in the mound fill and in the backdirt of the pothunters.

Earspools similar to those designated as Type A have been found in numerous and wide ranging locations in the eastern United States, including the Hopewell Mound group, Ohio; the Turner Mound, Ohio; the Wright Mound, Alabama; the Mandeville Site, Georgia; and others.

Type B earspools are represented by two specimens found in association with Burial 17 in Mound E. One of the specimens was located 0.5 foot north of the skull, while the other was near the left hand. Type B earspools were quite different in construction and design from Type A earspools. The outer discs of Type B earspools were larger in diameter, averaging 2.3 inches, and were much flatter than those of Type A. The central depression in the outer disc had no hole for a rivet as did Type A. The outer disc was secured to the inner disc by means of what appeared to be a resin or some other type of adhesive material. The central depression of the upper discs (as they were found in the pit) contained iron, but was absent from the depressions on the bottom discs. As with Type A earspools, the central column was wound with fiber.

Type B earspools are less common in occurrence than Type A elsewhere in the east. The outer disc of a specimen recovered from the Pharr Mounds (Bohannon 1972:107) appears to be quite similar to those designated as Type B in shape, size, and construction. Other examples of Type B earspools were recovered from the Rutherford Mounds, Hardin County, Illinois (Fowler 1957: 26) and the Mann Site, Posey County, Indiana (Adams 1949:56). The Rutherford Mounds contained examples of earspools that fit into both Type A and Type B categories. Ford illustrated copper earspools that are apparently very similar to Type B in his report on the Helena Crossing Site, Arkansas (1963:17). The diameter of the discs of these specimens vary, but all have one common attribute, that the outer disc is not attached to the central column by a rivet and has no hole in the central depression of the outer disc.

While many of the earspools found in these areas, particularly Ohio, were found in the hands of the burials, only one copper earspool was located in that position at Tunacunnhee (Type B with Burial 17,

Mound E). The proximal and middle phalanges of one finger of the left hand were found between the discs of the earspool found on the left side of the burial. A similar situation was described by Ford (1963:17) at the Helena Crossing Site in Arkansas. Some of the earspools were not directly associated with skeletal material (Feature 30, Mound C), while others were found near the skull (Burial 17, Mound E). Many of the earspools found in Mound C were excavated by pothunters and their records were not accurate enough to determine the exact location of the earspools they found.

It is possible that the stylistic variation exhibited by the two types of earspools may represent a chronological difference. Judging from the construction of Mounds C and E, Mound E was built some time after Mound C. Whether the temporal difference is very great is not known.

3. Plates

Three copper plates or "breastplates" were recovered from the mounds. A rectangular piece of sheet copper measuring roughly 6.0 × 4.0 inches was found by pothunters while digging in the area of Burial 3 in the southern edge of Mound C. One of the long edges of the plate was folded over and had perforations on the folded piece, possibly to attach the copper to another object. Detailed analysis of the specimen was not possible.

A rectangular copper plate was uncovered on the bottom of Feature 30 in Mound C (Plate 7). The plate measured 9.0 × 4.5 inches, and .03 inch thick. The plate was positioned under a layer of organic material thought to be the remains of a bag or pouch. Two large (1.0 inch in diameter) bosses were located near the lower edge of the plate (Plate 13A) and forty-four smaller bosses were situated along the upper edge, extending half way down the left and right sides. Two dark bands that were visible as dark brown stains on the surface of the bag were clearly visible on the surface of the plate. Preservation of the material was extremely poor as most of the metalic content of the plate had oxidized, leaving only copper salts.

Burial 18F, located in Mound D, contained a rectangular copper plate measuring 7.2 × 4.3 inches, and .12 inch thick (Plate 17A). The two smaller sides of the plate were slightly concave and two small holes were located 1.0 inch on either side of the center of the longitudinal axis.

The plate is very similar in size and shape to numerous copper breastplates found in the Hopewell Mound group in Ohio. According to Moorehead (1922:120) this type of copper plate was usually located on the abdominal or chest area of the burial. None of the copper plates recovered from Tunacunnhee were found in that position. Similar breastplates have been reported from the Seip Mounds, Ohio (Shetrone and Greenman 1931), Mound City, Ohio (Mills 1922:530), and the Turner Mound, Ohio (Willoughby and Hooton 1922:45).

4. Pins

One copper pin or rod was recovered from Feature 30 in Mound C (Plate 14E). The pin was located below a copper breastplate and was probably contained in the bag discussed previously. The pin measured 3.4 inches long and was .12 inch in diameter. A small bone or antler "knob" or handle was attached to one end of the copper shaft, the other end being pointed.

An item similar to the pin found in Mound C was described by Thruston as a ". . . Little copper awl, with a horn handle . . . found upon Reha's Island, Loudon County, Tennessee." Thruston speculates that it "must have had many purposes" and might be one one of the "copper spindles" described by one of Desoto's journalists as being used to pierce shell ornaments (Thruston 1890:302). Copper awls have been reported from Hopewellian sites in Ohio and Illinois (Struever and Houart 1972:59).

5. Adze or Celt

One small copper adze or celt (Plate 24C and D) was located on the chest of a semiflexed burial found by pothunters on the south side of Mound E. The adze measured 2.95 inches long, 1.32 inches wide at the blade, .32 inch thick at the point of greatest thickness and weighed 103.9 grams. One side of the adze was flat, the other being slightly convex (Plate 24D).

6. Copper Analysis

Analysis of the copper material found at the Tunacunnhee Site was done by the University of Georgia Geochronology Laboratory in an attempt to determine the source of copper ore used in manufacturing the artifact. Field research and testing was performed by Dr. Kent Schneider during a four day period at the site using the University of Georgia

Table 2. Results of X-ray fluorescence of materials recovered from the Tunacunnhee Site.

Samples	*Elements Present*												
	K	Ca	Mn	Fe	Cu	Zn	As	Br	Sr	Y	Zr	Mo	Ag
1. Earspool Central pit, Mound A	x			x	x								
2. Same as Number 1	x			x	x								
3. Blue salts F–30, Mound C				x	x								
4. Manganese nodule F–30, Mound C			x	x				x					
5. Same as Number 4			x	x				x					
6. Same as Number 4 (crushed)			x	x		x	x	x					
7. Earspool F–30					x								
8. Bone below panpipe, F–7		x		x	x				x	x			
9. Panpipe, F–7					x								
10. Panpipe, F–7	x			x	x	x		x					
11. Panpipe, F–7					x								
12. Copper plate F–30					x								
13. Copper plate F–30					x			x					
14. Earspool S.E. side, Mound A	x			x	x		x						
15. Earspool, backdirt, pothunter trench				x	x								x
16. Earspool, backdirt, pothunter trench	x			x	x		x						
17. Bone below sample Number 12, F–30		x		x	x		x		x				
18. Panpipe, south side, Mound C*	x			x	x							x	x
19. Earspool, south side, Mound C*	x			x	x								x
20. Earspool, south side, Mound C*	x			x	x								x
	K	Ca	Mn	Fe	Cu	Zn	As	Br	Sr	Y	Zr	Mo	Ag

**Samples 18, 19, and 20 were collected by amateurs during the winter and spring of 1973 and loaned to the University of Georgia for testing purposes.*

Geochronology Mobile Laboratory. Additional research was performed by Sharon I. Goad (1974) at the Laboratory of Archaeology, University of Georgia, Athens, Georgia.

Copper samples from the site were analyzed by x-ray fluorescence to determine the presence of specific elements in given artifacts. This test is qualitative rather than quantitative, giving only the presence or absence of an element. A quantitative test would have been more advantageous in that it would not only indicate the presence or absence of an element, but the amount of that particular element in the sample.

Many dozens of copper samples (both artifacts and ores) with origins ranging from the Great Lakes region through Tennessee, Georgia, and Mississippi have thus far been analyzed for minor and trace element composition (Scheider 1974). The technique used for most of this analysis was neutron activation. Schneider has been working with the problem of source material used in manufacturing artifacts for some time and feels that for qualitative analysis it is valid to compare the results of x-ray fluoresence and neutron activation (Schneider 1974).

Only the copper samples recovered prior to the midpoint of the field season were analyzed by this technique, with the remainder due to be analyzed at the end of the summer. Due to many difficulties, this was not accomplished. The information presented here reflects the results of the analysis of a partial sample, not the total collection of copper items recovered.

Analysis of the Tunacunnhee copper provided the following data. Thirteen elements were detected in the samples of copper tested from the site (Table 2). Specimens of ore tested from the Great Lakes area contained silver and arsenic together. Artifacts from the Pharr Site (Mississippi), which is Hopewellian (Bohannon 1972), contain this combination, but it was not present in any of the Tunacunnhee material.

Samples from material found at the Tunacunnhee Site that contain arsenic but no silver were samples 14 and 16. Other samples that contain silver but no arsenic were samples 15, 18, 19, and 20. All four of these samples were from artifacts that came from the south side of Mound C and were removed by pothunters. Copper ore from Georgia that has been analyzed contained silver but no detectable arsenic. This suggests that some of the copper artifacts from the site could have been of local origin (samples 15, 18, 19, and 20), while others were made from ore found outside Georgia (samples 14 and 16), (Schneider 1974).

The element bromine was detected in several of the samples from the site (samples 10 and 13), both from the center of Mound C. None of the Great Lakes–Michigan copper ore tested contained bromine. Bromine was also detected in the Pharr Site specimens, some of which contained bromine-silver and arsenic, while others contained bromine-silver but no arsenic. Bromine has been detected in copper ore found in Tennessee. It is possible that these two items were made from copper ore that originated in the Tennessee region. The Pharr Site samples containing this type of ore were earspools and panpipes while the two specimens from Tunacunnhee were a panpipe and a copper plate (Schneider 1974).

The element iron was present in ore samples from interior Wisconsin, but was not detected in samples

from the Great Lakes-Michigan area. Iron was not detected in any of the ore samples tested from Georgia (Fannin County) or Tennessee (Fontana Lake). Iron was not present in five samples (7, 9, 11, 12, and 13) found in the central area of Mound C. These five samples also lacked arsenic, which is characteristic of Great Lakes–Michigan area copper. It is possible that these artifacts were made from Georgia copper (Schneider 1974).

Elements detected in copper from the Tunacunnhee Site indicate that copper ores from several regions were used in construction of the various artifacts. This is the only definite conclusion that can be obtained from the x-ray analysis. It is likely that one of the ore deposits was located in the Georgia-Tennessee area and the other sources located outside that region, probably Wisconsin.

Research done by Goad at the University of Georgia tends to support the hypothesis of local origin for some of the copper ore used in manufacturing artifacts found at Tunacunnhee. Goad obtained her results through analysis of copper ore and artifacts using the optical spectrograph (Goad 1974:9).

7. Mica

Eight individual pieces or concentrations of mica were recovered during the course of the mound excavation. Much of the material had been cut, while other pieces appeared to have been unaltered.

A curvilinear piece of mica was placed on the skull of Burial 8, Mound C (Plate 20D). The object measured 5.4 × 2.8 inches. A second piece of cut mica was associated with seven bone pins located immediately east of the skull of Burial 8 and may be part of a hair ornament.

Feature 30, located below Burial 8 in Mound C, contained two pieces of mica. One piece was cut in the shape of a disc 5.4 inches in diameter (Plate 13B). At least three small holes were located on the disc. Two were placed near the center of the disc, while the others were located near the edge of the disc. A second piece of cut mica was located on the bottom of Feature 30. This material was associated with two drilled shark teeth and two shark vertebrae.

Burial 18F, located in Mound D, had a concentration of cut mica located adjacent to a silver covered panpipe along the edge of Feature 34. Five drilled bear canine teeth and a fragment of a quartz crystal were located on top of the mica. It appeared that the mica had once been a representation of a bird, with the bear canines placed around the neck of the bird (Plate 17B). A small piece of quartz crystal was located near where the tail of the bird would be situated. The mica concentration measured 8.8 × 4.3 inches.

A piece of uncut mica was associated with Burial 20 in Mound C. The burial remains were represented by only the partial remains of the skull of the individual. Burial 14, also in Mound C, contained a piece of uncut mica among the bones of the bundle burial. Burial 9A, Mound A, contained an octagonally shaped mica crystal measuring 7.2 × 5.8 inches located one foot below the surface of the north side of the mound (Plate 20E). The mica showed no signs of having been cut or otherwise altered from its original shape.

A concentration of cut mica was recovered from the southern side of Feature 33 in Mound E. The mica was located one foot below Burial 21, and was sealed between the premound humus layer and the clay mound fill. The mica was apparently placed in position prior to construction of the mound, as opposed to having been included in the mound fill. All of the pieces of mica were lying flat, directly on the humus layer.

Mica is one of the more commonly shared items of the Hopewellian expression, occurring widely throughout the eastern United States (Struever and Houart 1972:48). Excellent examples have been recovered from Mound City, Ohio (Mills 1922); Hopewell Mounds, Ohio (Moorehead 1922); Mound 478, Dickinson Mound, Illinois (Walker 1952); Santa Rosa-Swift Creek Sites on the northwest Gulf coast of Florida (Penton 1974); and the Mandeville Site, Georgia (Kellar, et. al., 1962).

8. Clay and Stone Pipes

A total of six platform pipes and one tubular smoking pipe was recovered during the excavation of the Tunacunnhee Mounds (Plates 16B, 19, and 20B). With the exception of one ceramic zoomorphic platform pipe, all were made of stone.

The largest concentration of pipes, five in all, was found in association with Burial 18F (Fig. 10) in the central pit (Feature 34) of Mound D. A cache of three platform pipes and one tubular pipe was found along the northern edge of the pit, north of the right leg of the burial. All four pipes were made from a very fine grain brown sandstone (Elkins, University of Georgia Geology Laboratory, Personnel communication, 1973). One of the platform pipes was a monitor or spool type (Plate 19D); the other two were made in the form of animals (Plate 19A and 19C). One of the zoomorphic platform pipes was a representation of an

alligator snapping turtle, with the bowl of the pipe placed in the center of the back of the shell. The second was a representation of a bird, the body of the bird forming the bowl. The only tubular pipe found at the site was also a zoomorphic pipe, made in the form of a snail (Plate 19B).

Photographs of these and other zoomorphic pipes were submitted to Dr. Paul Parmalee, of the University of Tennessee, for possible identification of the species of animals that were represented, but the figures were too stylized to permit positive identification (Personal communication, 1974).

The four pipes were positioned at radically different angles of inclination in the burial pit, possibly indicating that they were in some type of container at the time of placement in the pit. Two of the pipes were in a horizontal position, one vertical, and the fourth inclined at an angle of about 45°.

A fourth sandstone platform pipe was located near the abdominal area of Burial 18F (Plate 19E). The pipe was a plain monitor platform pipe and was smaller than those previously mentioned.

A monitor platform pipe made of polished rhyolite porphyry was uncovered two feet north of the right tibia of Burial 17 in Mound E (Plate 16B). According to geologists, there is no *known* local source of this type of rhyolite in the southeast. Known sources of the material include the Yellowstone region of Wyoming, the San Juan Mountain region of Colorado, and various locations in Mexico. There may be other sources closer to the southeast, but the origin of the stone was more than likely west of the Mississippi River. The pipe stone has quartz and alkali feldspar phenocrystals with a green aphanitic matrix (Elkins, University of Georgia Geology Laboratory, Personal communication, 1974).

The distal end of a ceramic bird effigy platform pipe was located .30 foot east of the skull of Burial 15C on the northern side of Mound C (Plate 20B). The portion of the pipe that was recovered was a representation of a bird head which was positioned on the distal end at the pipe. The specimen was the sole example of a ceramic smoking pipe at the site. Only the distal portion of the pipe was included in the burial and represents the only obvious attempt to break or "kill" burial goods.

Platform pipes are a hallmark of Hopewell. They have been found at numerous sites throughout the east and are represented by a wide range of stylistic forms and raw material. Monitor platform pipes similar to the two recovered from Burial 17 and 18F at Tunacunnhee were described by Griffin, et. al., in the report of Mound 16 of the Knight Mound group, Illinois (1970:97). Other similar pipes have been recovered from Gibson Mound 4, Illinois (Perino 1968:121); the Converse Mound group, Michigan (Quinby 1941:99); and the Hopewell Mound group, Ohio (Shetrone 1926:142).

Zoomorphic platform pipes also have a widespread geographical distribution. No pipes have been reported that have all of the stylistic attributes of the Tunacunnhee pipes, but numerous similar pipes are commonly found in Ohio and Illinois, as well as parts of the southeast United States. Fowler (1957:18) illustrated a bird effigy platform pipe made from material that, judging from the photograph, appears to be the same as the monitor platform pipe from Burial 17. Other sites where similar platform pipes were found include the Rutherford Mound, Illinois (Fowler 1957:23) and Mound City, Ohio (Mills 1922:513–522).

9. Ground Stone Celts

Seven complete or partial ground stone celts were recovered from the mound area. Five were associated with burials while two were recovered from the northern edge of Mound C, near the only ceramics found in the mounds. Three specimens were located in Feature 1. One was associated with Burial 7B and two with Burial 7C (Fig. 14). All three celts measured between 3.5–4.5 inches in length and were approximately 1.5 inches thick.

The largest celt was recovered from Burial 17 in Mound E, and measured 14.1 inches long, 4.9 inches wide, and 1.8 inches thick (Fig. 13). The celt was the only one of this size found in the mounds and was well over twice the length of others found at Tunacunnhee. Celts approximating the size of this have been found at other sites in the southeast, including the Shaw Mound, located near Cartersville, Georgia (Waring 1945:119).

The only celts that were not associated with a burial were found along the northern periphery of Mound C. One measured 6.4 inches long, being slightly longer than the specimens associated with Burials 7B and 7C. The second celt was broken, measuring 5.4 inches long. Both celts were made from a brown sandstone material.

With the exception of the large celt found with Burial 17, the remainder fall within the range of size and shape described by Wauchope (1966:180) as being commonly found throughout Georgia, and are equally as common throughout adjacent areas of the Southeast. Wauchope designates two basic types of polished celts; those that are "relatively thin, and

those that are oval in section." Flat specimens are usually equally thick at both ends, while the oval type is tapered at both ends, with a blunted butt (1966:180). According to Wauchope's classification, three of the Tunacunnhee celts would be described as "flat" and four as "oval."

10. Gorgets

Two ground stone gorgets were recovered from the mounds. One unbroken two hole gorget manufactured in the shape of a diamond was found on the abdominal region of Burial 18F in Mound D (Fig. 10, Plate 18B). The gorget was made from a schist material and measured 4.8 inches in length.

A portion of a ground slate bar gorget was found among the bones of Burial 14 in Mound C. The gorget was broken prior to placement in the burial and there is evidence that it had once been used as a grinding surface. A groove 1.2 inches by 0.5 inch was centrally located on one side of the flat surface.

Ground stone gorgets similar to the specimens recovered from Tunacunnhee are common at other Woodland sites and are not necessarily limited to a Hopewellian association. Stone gorgets occur at numerous sites where there are no Hopewellian affiliated items including the Camp Creek Site (Lewis and Kneberg 1957:28) and the Rankin Site (Smith and Hodges 1968:52).

11. Shell

Shell was associated with three burials in the mounds. The fragmentary remains of a shell object measuring 3.6 inches by 2.4 inches was situated south of the skull of Burial 15C, Mound C. Analysis of the shell failed to determine conclusively the type of shell from which the object was manufactured, but it probably represents the remains of a fresh water mussel shell (Dr. Grace Thomas, Personal communication, 1974). Shells of this type are presently found in Lookout Creek.

The second example of shell, which was recovered from Burial 6, Mound C, by pothunters during the spring of 1973, consisted of twenty-one drilled shell beads. Although positive identification of the shells is not possible, they are probably drilled sections of saltwater snail shells (Dr. Grace Thomas, Personal communication, 1974). A fragment of shell was also recovered from Feature 44 in Mound A, but was too small for positive identification.

12. Bear Canines

A total of eight drilled bear canines were recovered from burials in the four mounds. Six of the eight were found in association with Feature 34 in Mound D. Five of these were found with Burial 18F (Plate 18D) and were located along the southern side of the burial pit, around the neck of the hypothetical mica bird effigy (Fig. 10). A sixth bear canine was recovered from among the bones of Burials 18A–E, above Burial 18F. It is possible that the canine may have been associated with Burial 18A, but the severe distortion of the skeletal remains made any conclusive association difficult to determine.

One bear canine and several other parts of possible bear teeth were found in Feature 30 (Burial 12) in Mound C. Feature 7, located in the upper portion of Mound C, contained one drilled bear canine. The specimen was found with Burial 23 and was associated with other mammal remains, primarily deer.

All eight bear canines had two holes drilled in one side. The holes did not completely pierce the teeth, but penetrated only as far as the central cavity, allowing a string or cord to be passed through the hole to permit suspension. This means of suspension is the same as described by Ford (1963:15) for wolf canine teeth recovered from the Helena Crossing Site (Burial 61, Mound C) in Arkansas and for bear canines from the Klunk Mounds in Illinois (Perino 1968:113). Bear canines, as well as other species of canine teeth are commonly found in association with Woodland burials in the east.

13. Shark Vertebrae

Two non-fossilized shark vertebrae 1.2 inches in diameter were found in association with two drilled shark teeth in Feature 30 (Fig. 9, Plate 14C). An additional thirty-seven smaller shark vertebrae, approximately 0.5 inch in diameter were recovered from Feature 30. The vertebrae were arranged in four parallel rows with about nine vertebrae in each row and gave the appearance that they had been strung, perhaps as a necklace. Drilled shark vertebrae are commonly found in burials associated with Santa Rosa Swift Creek in Florida (Phelps 1969:17).

14. Shark Teeth

Two drilled shark teeth were recovered from Feature 30 in Mound C (Fig. 9, Plate 14D). Both speci-

mens were non-fossilized and had a single hole drilled through the center of the tooth. The two teeth were found in context with two shark vertebrae and fragments of mica.

Drilled shark teeth similar to those found in Feature 30 have been reported for a number of Hopewellian affiliated mounds in the east including Garden Creek Mound 3, North Carolina (Keel 1972:92); the Hopewell Mounds, Ohio (Moorehead 1922:120); Harness Mound, Ohio (Mills 1907:160); and numerous burial mounds along the Florida Gulf coast (Phelps 1969:17). In some cases, the teeth have been fossilized and may have originated some place other than the Gulf or Atlantic coasts. Fossilized shark teeth can be found at numerous locations in the east including Calvert Cliffs, Maryland, and various locations in Georgia and Florida. The presence of non-fossilized shark teeth at Tunacunnhee more strongly supports the hypothesis that the point of origin was somewhere along the coast of the southeastern United States.

15. Turtle Shell Rattle

A concentration of 26 small pebbles 3.5 inches in diameter was found in association with what appeared to be the remains of a turtle shell rattle is represented but preservation of the shell was too poor for conclusive identification.

16. Bone Awls

A cache of five bone awls was found in association with Burial 7 in Feature 1 (Fig. 14). All five of the awls were made from split tarsometatarus bones, probably turkey. All had been ground on one end to form a point. A sixth piece of worked bone was associated with the awls. It was made from a large mammal bone, probably deer or bear, and was ground on both ends to form rounded, blunt points. Additional pieces of unaltered bird bone were found scattered among the skeletal remains of Burials 7A–E, but were not associated with a specific burial.

17. Perforated Deer Antler Socket

A perforated or drilled deer antler socket was found in Feature 1. The antler had been drilled longitudinally and had four holes drilled from the outer surface into the central cavity. Drilled antler sockets of this type have been found at the Rankin Site, Cocke County, Tennessee (Smith and Hodges 1968:61) and the Camp Creek Site (Lewis and Kneberg 1957:15).

18. Hair Pins

Seven bone pins or sections of pin were uncovered 0.5 foot east of Burial 8. All of the pins were ground to blunt points on both ends. One pin had, in addition, been ground flat on two sides and had been notched at one end. The notched pin was placed perpendicular to the top of the skull of Burial 8 and the six smaller pins were positioned at a 90° angle to the notched pin. The parts of the pins that were preserved varied in length 1.2 inches to 3.0 inches. The diameter of the notched pin was 0.3 inch and the six smaller pins were approximately 0.1 inch in diameter.

19. Human Skeletal Remains

The inclusion of human mandibles in burials was observed in Mound C (Feature 30) and Mound A (Burial 9B). The specimens in Mound A had been altered to the extent that both of the ascending rami were removed. Poor preservation prevented detailed analysis of the two examples recovered from Feature 30.

The placement of human skeletal parts in burials is not an unusual attribute for Ohio and Illinois Hopewellian burials. Moorehead noted that human jaws were present in burials in Mounds 3, 18, and 23 at the Hopewell Mound Site (1922:93). A similar situation was described by McGregor in Mound 9 at the Havana Site, Mason County, Illinois (1952) and the Harness Mound, Ohio (Mills 1907:57–58). The specimens from the Havana Site were human mandibles and all had been drilled for suspension (McGregor 1952:63–65).

20. Lithic Material

The presence of lithic material in association with burials was an infrequent occurrence in the mounds at Tunacunnhee. The great majority of lithic material came from the area surrounding the mounds or from the habitation area. As previously mentioned, the area surrounding the mounds had been extensively plowed during the first few decades of this century

and all of the material recovered from outside the mound, with the exception of Feature 1 and Feature 43, came from the plowzone. Most of the lithic material in the mounds came from the basal area of the mounds. A small amount of lithic material was, however, found in the mound fill.

A large concentration of chert debitage was uncovered below the base of Mound C, immediately above the premound humus layer. The debris was sealed between the premound humus layer and the red clay ring (Feature 20A). The clay comprising Feature 20A was the same type as the clay subsoil below the yellow-brown mound fill. The location of the flakes indicated that they were present prior to the construction of Mound C. How long the flakes had been in that location prior to the construction of the mound is difficult to determine. The flakes were found on the surface of the humus layer and were concentrated in a relatively small area (ten feet square) which may indicate that the debitage had not been exposed to the elements for an extremely long period of time before it was sealed by the layer of red clay.

A second large concentration of chert was found in association with Burial 7C in Feature 1 (Fig. 14). The cache consisted of 57 pieces of dark gray-black chert located in a one cubic foot space. Most of the chert appeared to come from chert nodules 1.5 inches by 2.5 inches in diameter. The cache contained two crudely chipped triangular tools, possibly knives or preforms for projectile points. In addition two pieces of chert with considerable retouch (possible preforms), 37 "flat" pieces of chert (cross-section of chert nodules), and 16 "core-like" or "globular" pieces were recovered from the burial. The material may represent the various stages of the production of stone tools . . . cores, preforms, and finished product . . . that would be found in a flint knapping kit.

Relatively few projectile points were found in association with burials at the site. A quartz crystal lanceolate point, measuring 2.4 inches in length was recovered from Burial 18F (Plate 18C). Quartz is not common at the site; however, several quartz crystals were recovered from the plowzone around the mounds and from the habitation area.

Two gray chert projectile points were located on the right knee of Burial 15A in Mound C (Plate 20C). One of the points is similar to points classified as Greenville points. Points of this type have been recovered from the Tunacunnhee habitation area, as well as at the Camp Creek Site, Greene County, Tennessee (Lewis and Kneberg 1957:20) and the Rankin Site, Cocke County, Tennessee (Smith and Hodges 1969:68).

The second point recovered from Burial 15A was pentagonally shaped, with an elongated stem and straight base. This point is very similar to points found by Webb and DeJarnette at the Fisher Mound, Hardin County, Tennessee, and described as being a "Copena type point." The base of this type of point is square or slightly convex. "The blade, from the base, at first contracts and then expands, thus having edges concave from the base to two thirds of its length, after which the edges become convex, and the blade comes to a sharp point" (1942:37). The points from the Fisher Mound were found in a burial context. Points similar to Greeneville points were also recovered from the Fisher Mound.

Two chipped chert artifacts were associated with Burial 14 in Mound C. The first specimen was a small portion of a projectile point or knife. The second specimen was a crudely chipped, straight based, triangular projectile point or knife, made of dark gray chert. Points similar to this specimen were recovered from the habitation area.

One example of a backed chert knife was found on the floor of Feature 30 in Mound C (Fig. 9). The blade was finely chipped on three edges, flat on the fourth, and measured 3.0 × 0.9 inches and 0.4 inch thick. Backed blades are not commonly found among Illinois Hopewell, but are frequently found in association with Ohio Hopewell sites.

Prismatic blades were recovered from both the mounds and the habitation area at Tunacunnhee (Plate 23C and D). Although rare, such prismatic blades have been recovered from other Woodland sites in the southeast including: the Mandeville Site, Georgia (Kellar, Kelly, and McMichael 1962), 9–Fu–14, located near Atlanta, Georgia (A. R. Kelly, Personal communication, 1974), Garden Creek Mound No. 2, North Carolina (Keel 1972:183), the Ice House Bottom Site, Tennessee (Chapman 1973:93), and others.

The only example of "exotic" chert found at Tunacunnhee was one prismatic blade recovered from the backdirt associated with Burials 2 and 3 in Mound C. The source of the chert has been identified as Flint Ridge, Ohio, by Martha Otto of the Ohio Historical Society (Personal communication, 1973). Flint Ridge flint, or more correctly, chalcedony, has been found at several nearby locations. Keel reported that 79 specimens of prismatic blades were recovered from Garden Creek Mound No. 2, of which 24.9% were made from Flint Ridge material (1972:188). Several specimens of Flint Ridge flint were recovered from the Mandeville Site, Georgia (Betty Smith, Personal communication, 1974) and the Ice House Bottom Site, Tennessee (Chapman 1973).

The great majority of lithics recovered from the

plowzone and features in the habitation area were fabricated from gray Fort Payne chert (Plate 23). A few quartz chips (crystal and white quartz) were also recovered. Prismatic blades were found throughout the area, most being made of gray chert (Plate 23C), however several were manufactured from imported quartz crystal material (Plate 23D). Projectile point types included those identified as Greeneville, Nolichuchky, and Baker's Creek, as well as other more amorphous lanceolate and side notched points. Additional analysis of lithic material is currently underway at the Laboratory of Archaeology, University of Georgia.

The Rankin Site (Smith and Hodges 1968), Cocke County, Tennessee, and the Camp Creek Site (Lewis and Kneberg 1957), Greene County, Tennessee contained lithic material similar to that recovered from the Tunacunnhee Site. While lithics from Tunacunnhee are similar to materials recovered from other Woodland sites in the surrounding areas ceramics at Tunacunnhee tend to be unique when compared with materials recovered at other Woodland sites in the Tennessee River Valley.

21. Ceramics

The excavation of the Tunacunnhee mounds disclosed few examples of ceramic vessels. No vessels were associated with burials and the only ceramic item associated with a burial was a platform pipe in Burial 15C. Few sherds were recovered from the plowzone during the excavation of the area surrounding the mounds and ceramic artifacts were almost totally absent from the mound fill. The only pottery from the mounds came from the northern edge of Mound C. Portions of at least two vessels were recovered from a small area in this location. Reconstruction of the incomplete vessels indicated that both were sand tempered conical vessels with tetrapods. One of the vessels was decorated with simple stamping, the other was undecorated.

The size of the vessels described below is based on partial reconstructions. The simple stamped vessel was approximately 7.0 inches tall and 7.0 inches in diameter at the rim. A portion of the reconstructed rim showed that it flared outward at a 45° angle (Plate 21B).

The second vessel (Plate 21A) was slightly smaller than the first, being approximately 5.0 inches in diameter and an undetermined height. Tetrapods on both specimens were 0.5 inch long. The location of the vessels below the rock mantle of Mound C indicates that they were deposited prior to construction of the mound.

Vessels with the attributes of those found in Mound C are common in the southeastern United States (Betty Smith, Personal communication, 1974). They are also quite similar to Connestee ceramics, with the exception of minor differences in the paste. Connestee pottery from western North Carolina was found in association with Hopewellian material at the Garden Creek Mound 2 (Keel 1972:156).

Among Ohio and Illinois Hopewellian sites, the inclusion of pottery in burials is a common occurrence. A ceramic vessel very similar to the simple stamped vessel from Mound C was found at the Rutherford Mound in Illinois. The vessel was described as having " . . . four feet and was conical in form. The surface of the vessel was decorated with simple stamp . . . marks about three quarter of an inch in length" (Fowler 1957:27). The vessel was located at the left shoulder of a burial in the mound fill. The sand tempered tetrapodal vessel measured 8" tall and 7" in diameter at the mouth. Fowler noted that this type of vessel is quite uncommon in Illinois. Other tetrapodal vessels are known to have been associated with Hopewellian material in Ohio (Mound City and Hopewell) but these vessels did not have the same shape or surface treatment. Fowler compares the vessel from the Rutherford Mound to southeastern regional variants of Woodland pottery such as Cartersville, Mossy Oak, and Deptford (1957:36–37).

A total of 523 sherds was recovered from features in the habitation area (Table 3). Numerous other sherds were found during the process of removing the plowzone above the midden layer. All habitation area pottery can be divided into four types based on two attributes: temper (sand and limestone), and surface treatment (simple stamped and cordmarked). These types are based on classification of ceramics recovered from features in the habitation area which were undisturbed by agricultural activity. A more detailed analysis in the future may be able to differentiate further these preliminary types.

A large number of sherds that were undecorated, as well as sherds which originally had a surface decoration but are now eroded, were included in a residual category. The breakdown between simple stamped-brushed and cordmarked ceramics is not very precise because of the erosion of the surface decoration. Eroded cordmarked sherds very closely resemble simple stamped pottery.

The following is a percentage distribution of ceramics recovered from features in the habitation area:

Table 3. Percentage distribution of habitation area ceramics.

	Decoration			
Temper	Simple stamped-brushed	Cordmarked	Other	Total
Limestone	5% (n=27)	28% (n=145)	33% (n=174)	66% (n=346)
Sand	14% (n=71)	0% (n=1)	20% (n=105)	34% (n=177)
Total	19% (n=98)	28% (n=146)	53% (m=279)	100% (n=523)

The basal portion of a limestone tempered cordmarked tetrapodal vessel, as well as numerous isolated tetrapods were recovered from the plowzone and midden layer. One flat bottomed limestone tempered "plain" vessel was recovered from another refuse pit in the habitation area.

Cordmarked limestone tempered ceramics (Plate 22A, 22B, 22C) have been tentatively classified as Candy Creek Cordmarked as described by Lewis and Kneberg (1946). Simple stamped sand tempered sherds (Plate 22D–F) have been included in the Cartersville series (Dr. Bennie Keel, Personal communication, 1974), as described by Caldwell (1958:45). The Rankin Site (Smith and Hodges 1968) Cocke County, Tennessee and the Camp Creek Site (Lewis and Kneberg 1957) contained ceramic material similar to that recovered from the Tunacunnhee Site. The Tunacunnhee ceramic assemblage contains a greater percentage of sand tempered simple stamped ceramics than the above two sites. The Rankin and Camp Creek Sites contained ceramics with a high percentage of fabric marked sherds, while no fabric marked sherds were recovered from Tunacunnhee.

22. Wood

The only occurrence of wooden artifacts found in a burial context at Tunacunnhee was two wooden spools associated with a burial excavated by pothunters following completion of the University of Georgia excavations (Plate 24A and B). One of the spools was found near the left hand at the waist. The second was located near the right side of the skull. The position of the two wooden spools is analogous to that of the two copper earspools found in association with Burial 17 in Mound E.

One wooden spool measured 2.5 inches in diameter, 1.0 inch thick and weighed 66.4 grams. The second spool was also 2.5 inches in diameter, 1.0 inch thick and weighed 57.4 grams. The wood used in manufacturing the spools was a heavy, fine grain, dark wood, perhaps walnut.

IV. Burial Analysis

Introduction

The Tunacunnhee Site consisted of three circular stone mantled earth mounds (Mounds C, D, and E), a circular stone mound (Mound A), at least two burial pits located outside the mound structures (Features 1 and 43), and a habitation area.

Mounds C, D, and E were probably constructed in three stages: (a) digging of the central burial pit, (2) placement of the earth core over the pit, and (3) a final capping with limestone rock. A fourth stage may be present in Mound C with the addition of Feature 7, the stone lined pit in the center of the mound. All three mounds had central burials, and the three burials in these pits were placed in an extended position and accompanied by the largest number and most elaborate Hopewellian items found at the site. Mounds C and E had burials in the mound fill and in pits or basins located around the periphery of the mounds.

Mound A was structurally distinct from the other three mounds in that it lacked earthen fill. Mound A was probably also built in three stages: (1) the digging of the central burial pit, (2) the placement of a limestone mound over the pit, and (3) construction of the "apron" on the eastern side of the mound. The original shape of the apron is impossible to determine due to the disturbance caused by modern agricultural activity. The four modern rock piles (Mounds B, F, G, and H) were probably built with rocks that were originally part of the "apron."

Unlike Mounds C, D, and E, no extended burial was found in the central burial pit of Mound A. A fragment of a copper earspool and several fragments of calcined bone were recovered from the bottom of the pit. Several burials were found along the northern periphery of Mound A, but were not accompanied with the quantity and variety of artifacts found in Mounds C, D, and E. It is possible that Mound A was functionally, as well as structurally different from the other three mounds.

1. Classification of Burials

A total of thirty burials was recovered during the excavation of the Tunacunnhee mounds by the University of Georgia (Table 4). At least six additional burials were uncovered by pothunters in Mound C prior to the 1973 field season. The great variation in the practices of interring bodies of the deceased was one of the more unique attributes of the Tunacunnhee Site. The greatest degree of variation occurred in the type of structure in which individuals were buried and the position in which burials were placed in such structures. Burial orientation on the other hand, was quite uniform throughout the site. With the exception of two burials in Feature 34 located in Mound D that were oriented north-south, all other burials were oriented east-west, head to the east.

Burials were placed in central submound pits, specially prepared stone slab-lined pits or basins, in the mound fill during construction phase of the mounds, and in pits located outside the mound structures. Burial positioning was determined for all of the burials disclosed during the excavation, with the exception of incomplete or partial burials, cremations, and extremely deteroriated burials which remained unclassified.

Extended burials comprised 25% (n=9) of the total number of burials at the site. All extended burials were associated with the mound structures. The greatest quantity and variety of Hopewellian items were associated with the three extended burials in the central submound pits of Mound C (Burial 8), Mound D (Burial 18F), and Mound E (Burial 17). An exception to this was Burial 3 located in Mound C. Hopewellian items were associated with several other burials, but not in the magnitude of the three aforementioned burials.

In addition to being placed in central burial pits, extended burials were also placed in stone-lined basins (Burial 11, Mound A, and Burial 15A, Mound C), while others were buried in the mound fill (Burial 13B, Mound E, and Burial 21, Mound E). All extended burials were placed on their back in their burial structures, with legs and arms fully extended. Burial orientation for all nine extended burials was east-west, head to the east.

Flexed burials accounted for 33% (n=12) of the total number of burials recovered during excavation.

Table 4. Burial attribute associations, Tunacunnhee Site, Dade County, Georgia.

	Burial Number																	
	1	2	3	4	5=10	6	7A	7B	7C	7D	7E	8	9A	9B	11	12	13A	13B
Orientation	EW	?	?	?	EW	?	EW	EW	?	?	–	EW	?	?	EW	?	EW	EW
Positioning: Extended	x				x							x			x			x
Flexed							x	x									x	
Semi-Flexed				x														
Bundle										?								
Cremation											x							
Mandible Only														x		x		
Skull Only																		
Unarticulated Bone		x	x			x			x	x			x					
Copper Breastplate			1													1		
Copper Earspool			2			2										4		
Copper Pin																1		
Copper Panpipe													?					
Copper Panpipe w/Ag			1															
Other Silver																		
Effigy Platform Pipe																		
Monitor Platform Pipe																		
Effigy Tubular Pipe																		
Mica (cut)			x									x				x		
Mica (uncut)												x	x					
Celt (large)																		
Celt (small)			1					1	2									
Projectile Point			1															
Flint Cache									x									
Other Stone Tools																1		
Two-hole Bar Gorget								1										
Bone Awls									6									
Drilled Antler Tools							1											
Shell Beads						21												
Bone Hair Pins												7						
Drilled Shark Teeth																2		
Other Fish Bones																39		
Other Shell																		
Drilled Bear Canines																1		

Flexed burials were found in various locations within the mound structures, and in two burial pits located outside the mounds. Specific locations included central submound pits (Burials 18A–18E, Mound D), in the mound fill (Burial 13A, Mound E), in stone lined basins (Burial 15B, Mound C, and Burial 19, Mound A), and in Features 1 and 43 west of Mound A. Flexed burials were not associated with the quantity or variety of Hopewellian items found in association with extended burials.

The greatest frequency of flexed burials was in Feature 1 and 34. Feature 1 contained two complete adult burials and additional skeletal material indicating possibly three additional flexed burials. Extreme distortion of the skeletal material made burial positioning extremely difficult to determine. Feature 1 burials were not accompanied with burial items normally identified as being Hopewellian, but numerous "utilitarian" items such as bone awls, stone celts, and lithic material manufactured from local chert were recovered.

A second concentration of flexed burials was associated with Feature 34 in Mound D. Four or possibly five flexed adult burials were placed in a superior

	Burial Number																	
	14	15A	15B	15C	16	17	17A	18A	18B	18C	18D	18E	18F	19	20	21	22	23
Orientation	?	EW	EW	EW	–	EW	–	EW	EW	EW	NS	NS	EW	EW	–	EW	EW	?
Positioning: Extended		x				x							x			x		
Flexed			x					x	x	?	x	x		x			x	?
Semi-Flexed				x														
Bundle	x																	
Cremation					x		x											
Mandible Only																		
Skull Only															x			
Unarticulated Bone																		
Copper Breastplate													1					
Copper Earspool					1	2												
Copper Pin																		
Copper Panpipe		1		1		3							1					1
Copper Panpipe w/Ag													1					
Other Silver													1					
Effigy Platform Pipe				1									2					
Monitor Platform Pipe						1							2					
Effigy Tubular Pipe													1					
Mica (cut)													x					
Mica (uncut)	x														x			
Celt (large)						1												
Celt (small)																		
Projectile Point	2	2											1		1			
Flint Cache																		
Other Stone Tools						1									2			
Two-hole Bar Gorget	1												1					
Bone Awls																		
Drilled Antler Tools																		
Shell Beads																		
Bone Hair Pins																		
Drilled Shark Teeth																		
Other Fish Bones																		
Other Shell				1	1													
Drilled Bear Canines								1					5					1

position above Burial 18F. The extended burial (Burial 18F, Mound D) contained numerous Hopewellian items, but the only artifact associated with the flexed burials was one drilled bear canine. The situation may imply that the flexed burials were retainer burials placed in the pit after the positioning of Burial 18F.

Flexed burials were positively correlated with an east-west burial orientation. The only exception was found in Feature 34 where burials 18D and 18E were oriented north-south.

Secondary burials included bundle burials, partial burials, and cremations that were not cremated in situ. The sole example of secondary bundle burial was Burial 14 in Mound C. Burial 14 consisted of the skeletal remains of at least six adults and occupied a 2.0 × 3.0 feet area at the western edge of Feature 32. Evidence of cremation was found in several locations in the mounds and in Feature 1. All cremation burials were secondary in that no evidence of inplace burning was detected. Pothunters reported finding evidence of calcined bone associated with Burials 2, 3, and 4 in Mound C. The University of Georgia excavation recovered calcined bone from the central pit in Mound

E (Burial 17A), scattered among the bones of Burials 18A–E in Mound D, among the rocks and bones of Feature 1, and in the bottom of the central submound pit in Mound A (Burial 16). Most of the fragmentary remains of cremated burials were too small to permit identification of particular bones or to determine the sex or age of the individuals. Cremated burials were normally found in association with noncremated burials. Burial 16 in Mound A, however, was apparently the only burial in the central pit.

Partial burials composed of one or more bones of an individual or individuals, but less than the complete skeleton, were found in mounds A, C and E. Mound A contained Burial 9A, scattered bone fragments and the teeth of a child, and Burial 9B, an adult mandible. Both Burials 9A and 9B were placed in the rock core on the north side of the mound. Two additional adult mandibles were associated with Feature 30 in Mound C. Two mandibles were clustered in the southwestern section of the pit and were associated with several copper and mica artifacts. Burial 20, also in Mound C, was represented by the partial remains of an adult skull located inside the rock facing of the northeastern portion of the mound. The mandible, most of the maxilla, and the teeth were absent. Mound E contained scattered bones in the fill associated with Burials 13A and 13B.

2. Relative Status of Burials at Tunacunnhee

The question of relative social position of burials has been the subject of much investigation in the past decade (Binford 1962, 1971, Larson 1971, Peebles 1971, and Winters 1969). Much of the results of these investigations have been based on the analysis of artifacts found in association with burials. Binford (1971) suggests that there are at least two components that have to be evaluated in analyzing the various types of social phenomena symbolized in the burial situation. The first component is the "social persona" of the individual. The term "social persona" is borrowed from anthropological role theory (Goodenough 1965) and refers to the range of social identities characterizing an individual for a given interaction (Tainter 1975:2). The second component is the size and composition of the social group recognizing status responsibilities to the deceased individual. Binford contends that the second component will determine the form of the mortuary rites associated with an individual. The location of the mortuary ritual and the degree that the performance will interfere with normal activities will vary directly with the number of status relationships between the deceased and the community. In egalitarian societies, young people should have low rank and share duty-status relationships with few people. Older people will, however, occupy status positions of higher rank and share duty-status relationships with more individuals. Age differences, therefore, may be detected in burial situations by differential placement of burial sites in the community (Binford 1971:21). Since there is less relative status difference between individuals in an egalitarian society, one would expect that the characteristics of Binford's two components would generally be the same for all individuals in the same age and sex categories. Mortuary activities should reflect this similarity. Given the pyramidal hierarchical structure of a rank society, one would expect that the increased relative ranking of status positions in the social system will positively co-vary with the number of individuals having duty-status relationships with individuals holding that status position (Tainter 1975:2).

Before the presentation of any specific hypotheses concerning relative status positions of individuals at Tunacunnhee, it must first be demonstrated that status variability is reflected by both the treatment of burials and the artifacts associated with burials. It has been previously hypothesized that Hopewellian Interaction Sphere material found in association with burials at Tunacunnhee is indicative of the relative social position of the individual (Jefferies 1974). Social position is defined as the relative position of an individual in social space with reference to other members of his society. Interaction sphere artifacts generally conform to Binford's (1962) definition of "sociotechnic" artifacts. These artifacts are made from raw materials that are not present in the region surrounding Tunacunnhee. The following hypothesis was formulated to test the above statement:

H_1: The presence or absence of Interaction Sphere artifacts with burials in the Tunacunnhee mounds was a means of indicating the relative social position of the individual.

The following assumptions must be accepted before the hypothesis can be tested:

1. Burial items do not occur in burials by accident.
2. Items indicating higher status are made from exotic or rare material not found in the local area.

The following test implications were formulated to test this hypothesis:

1. Interaction Sphere material will not be uniformly distributed through all burials.
2. Most Interaction Sphere material will be made of copper, mica, silver or other forms of exotic raw materials not available locally.
3. Interaction Sphere material will be found in association

with burials that are located in burial structures which require a greater expenditure of energy to construct such as log tombs, stone lined pits or stone sided basins.

The analysis of data recovered from burials in the mound and circummound areas support this hypothesis. Analysis and testing of burial data indicates that there is a non-uniform distribution of Interaction Sphere material in burials ranging from 0–17 items per burial.

Several attempts were made to utilize various computer programs to assist in the analysis of the variability of burials and associated artifacts. One of the more successful techniques used was a monothetic subdivision classification developed by Robert Whallon (1971, 1972). Whallon's method was borrowed from researchers in plant ecology and is known as "association analysis." The program is based on the utilization of qualitative or presence/absence attributes and proceeds with the division of the original data set into progressively smaller subgroups.

> The goal of the monothetic subdivision method is to arrive at a classification in which each "type" or final group of items is uniquely defined by specific combinations of presences and absences of attributes and in which the maximum degree of homogenity within subgroups and heterogenity between subgroups is concurrently maintained (Whallon 1971:9).

The Whallon program uses the simple sum of chi squares. This technique separates the attributes having the largest value of significant chi squares from the remaining attributes. The program produces a tree-like typology using this binary system. The program allows for a maximum of 15 subdivision steps. The smallest acceptable cell value for calculation was set at 0 and the minimum acceptable significant value of chi square was 2.71 (.10 level of significance). The use of association analysis has been seriously questioned by some researchers (Lance and Williams 1971), who favor use of its information statistic counterpart. The results of analysis of the Tunacunnhee data using the information statistic were, however, no more informative than the association analysis.

There are certain statistical dangers involved in using a cell value of 0, since the statistic calculated using such a low expected cell frequency is poorly approximated by the chi square distribution. A second problem involved in using Whallon's or any other statistical program with the Tunacunnhee data is the very small sample size (burials=36).

The sixteen variables used in the analysis are listed below.

A. Burial location
   1. Central mound burials
   2. Peripheral mound burials
   3. Mound fill burials
   4. Non-mound burials

B. Burial position
   5. Extended
   6. Flexed
   7. Bundle
   8. Cremation
   9. Partial burial
   10. Unarticulated bone

C. Artifact association
   11. Copper artifacts
   12. Platform pipes
   13. Mica
   14. Celts
   15. Projectile points
   16. Animal remains Bear canine teeth, cut mandibles, vertebrae, etc.)

The tree diagram shown in Fig. 16 is based on the results of the program, with minimum accepted cell value 0 and minimum chi square value 2.71.

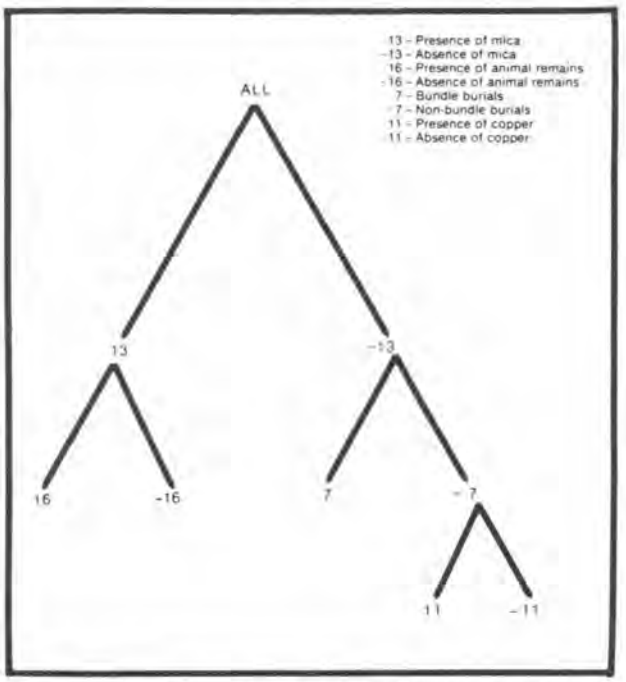


Figure 16. Tree Diagram Showing Critical Variables by Analysis Using Whallon's Program with Tunacunnhee Burial Data.

The tree diagram showin in Fig. 17 is based on the same results as Fig. 16. The number of individual burials placed in each category by the analysis is, however, included.

Examination of the results of the analysis discloses that four types of burials can be identified. Type I (n=3) includes burials that are associated with mica (13) and animal remains (16). All of the Type I burials were found in central mound burial structures. Type II (n=5) is formed by those individuals that have mica

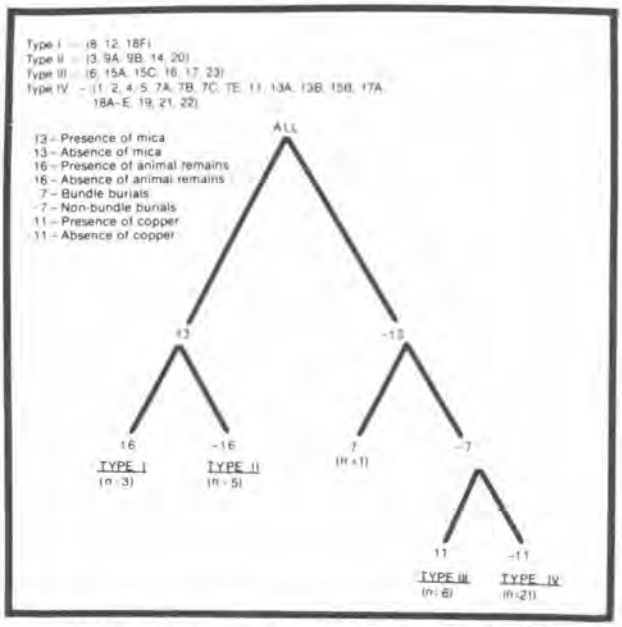


Figure 17. Tree Diagram with Burials Showing Results of Association Analysis Using Whallon's Program with Tunacunnhee Burial Data.

(13) but lack animal parts (-16). Three of the five burials (9A, 9B and 20) are unique in that they contain the partial remains of individuals. Burial 14 is a bundle burial containing at least six individuals. Burial 3 was excavated by nonprofessional archaeologists which resulted in a lack of reliable data concerning this burial. Drilled bear canine teeth were reported from Burial 3 but were not clearly associated. It is possible that Burial 3 had animal parts in association in which case the burial should be classed as Type I. Type III (n=6) included individuals that were not associated with mica (-13), not bundle burials (-7) and associated with copper artifacts (11). Five of the Type III cases were located in "specially prepared" burial structures. The type of structure in which Burial 6 was placed is not known due to the lack of explicit documentation (Burial 6 was excavated by pothunters). Type IV (n=21) contains individuals not associated with Interaction sphere material and includes: five burials that appear to be retainer burials for Burial 18F, (18A–18E) five burials located outside the mound structures (7A–7C and7E), and three burials placed in the mound fill (13A, 13B, and 21). Burials 1, 2, 4, 5, 11, 15B and 19 were peripheral burials with no associated artifacts. Burial 17A was a cremation in the central pit of Mound E. Burial 7D split off early in the analysis and does not fit into any of the designated categories.

In summary, Types I–III include all burials that are associated with interaction sphere artifacts. Type IV includes individuals that lacked interaction sphere material associations. The analysis supports the hypothesis that there was differential treatment of individuals in burials at Tunacunnhee and that differential treatment may reflect the relative status position of those indivuals in the social system.

3. Status and Social Composition

The following hypotheses concerning the relative status position of individuals in the social system are based on Fried's model for sociopolitical evolution (1960, 1967):

General Hypothesis: The treatment of burials in Hopewellian mortuary structures at Tunacunnhee is representative of the status position of an individual in the social system.

A specific research hypothesis can be formulated from this general hypothesis:

H_2: The treatment of burials in Hopewellian mortuary structures at Tunacunnhee is representative of the status position of an individual in the social system of a *rank society.*

Alternative hypotheses:

H_3: The treatment of burials in Hopewellian mortuary structures at Tunacunnhee is representative of the status position of an individual in the social system of an *egalitarian society.*

H_4: The treatment of burials in Hopewellian mortuary structures at Tunacunnhee is representative of the status position of an individual in the social system of a *stratified society.*

The research hypothesis is derived inductively from data collected during the excavation and analysis of material recovered from the Tunacunnhee site as well as from research conducted with data collected at the Spiro Site (Brown 1971), the Moundville Site (Peebles 1971) and the Etowah Site (Larson 1971) where it was demonstrated that the treatment of burials varied with location of burials within the site and the position of the burials in the mounds.

Anthropologists have for some time been concerned with the association of certain levels of social complexity or socio-political organization and the treatment of individuals in those societies at the time of death (Brown 1971, Saxe 1970). Service (1962) and Fried (1967) have formulated models for sociopolitical evolution that have been utilized by archaeologists to test hypotheses concerning the level of socio-political organization reflected through the treatment of burials of members of that society. Fried

(1967) identifies four levels of socio-political organization—egalitarian society, rank society, stratified society, and state society.

Fried defines *egalitarian society* as one in which "there are as many positions of prestige in any given age-sex grade as there are persons capable of filling them" (Fried 1967:33). Fried states that, apart from age and sex, differences among members of the society are minor.

Rank societies are defined by Fried as societies in which positions of value are somehow limited so that not all of those of sufficient talent to occupy such statuses actually achieve them (1967:109). Based on this definition, it can be implied that the statuses of individuals living in the society are comparable to the differential or hierarchial treatment of burials and that it may be possible to identify aspects of a rank society by analyzing the variability present in the treatment of burials at the site. According to Fried, a rank society "is characterized by having fewer positions of valued status than individuals capable of handling them" and that the "society as a framework of statuses resemble a triangle" (1960:717). If the "triangle" or hierarchical arrangement of statuses exists at Tunacunnhee, it may be expected that some of the variables tested will demonstrate similar configurations.

Considerable work has been done with Mississippian burial customs concerning differential treatment of burials and what it may infer about the status of the individual during life (Peebles 1971; Brown 1971; and Larson 1971). While it is realized that these data were applied to a hypothetically more complex level of socio-political organization (Mississippian) it is possible that some of the assumptions and propositions may have limited application to other levels of socio-political organization including that present in Hopewellian societies.

Brown states that high status individuals are often buried with preserved status accoutrements exhibiting symbols of the supra-local type (1971:2). Peebles defines "supra-local type" as artifacts widely distributed throughout an area crosscutting the boundaries of many distinct cultures (1971:69). Hopewellian material at Tunacunnhee clearly fits into the category of supra-local artifacts. Further, Struever and Houart contend that some of the "typical" Hopewellian artifacts may have served to indicate status in the social subsystem of the Middle Woodland cultures (1972:49).

Binford (1962) discusses the use of artifacts found in a burial context to aid in determining the system of status grading used by a society. Drawing on Fried's (1960) definition of "egalitarian" and "rank" societies, Binford attempted to form hypotheses concerning the status system of the "Old Copper" complex during the Archaic period. Binford noted that copper was primarily used for the production of *utilitarian* items during the Archaic period, while during the Woodland period copper was commonly used for the production of *nonutilitarian* items. Binford further proposed that among egalitarian societies, status symbols are symbolic of technological activities and that outstanding performance of these activities resulted in the increase status of the individual. He also states that status symbols will be possessed by people within the same age and sex classes. These status objects would then be destroyed or buried with the individual at the time of his death (1962:222). Status positions in egalitarian societies would tend to be achieved. In societies where status grading is nonegalitarian the status forms would be more esoteric. The possession of a particular form of status object should be restricted to certain status positions. The presence of copper artifacts that are apparently nonutilitarian in nature within the Hopewellian and other more complex societies is apparently related to their socio-technic function in the social system. Status grading in these more complex societies was probably nonegalitarian, and nonutilitarian forms of status symbols may be analogous with the ideological rationalization for various ascriptive status systems (Binford 1962:223).

In recent years, Buikstra (1972) has analyzed skeletal material from three contemporaneous Middle Woodland occupations from the lower Illinois River region on the basis of epigenetic information. Epigenetic data from these sites tend to support the hypothesis that personal attributes such as strength and physical abilities were more important in determining the kind and amount of attention given an individual at death than kin association (1972:136–137). The differential treatment of burials within the Gibson-Klunk mounds may represent status differentiation in the Hopewell community. Buikstra states that differential postmortem treatment indicates that there is a level of inegalitarian status distribution. She has noted there is an association of males with final burial in the central feature and with other types of burial activity that require a greater expenditure of energy. Those burials which received special status considerations were not epigenetically distinct from other burials in the mounds. She concludes that males who received special burial treatment at the Gibson mounds are taller than other individuals and suggest a "system of status acquired during an individual's lifetime" (Buikstra 1972:138).

While it is obvious that everyone does not agree on the mechanism for the transmittal of status, most do agree that Hopewellian material associated with burials is a symbol of status identification and is probably an indicator of the relative rank of the social status of an individual within that society.

In view of the data analyzed from Tunacunnhee, it initially appears that the expression of status based on the presence of various burial attributes most closely approximates that of a rank society. It should be noted that the burial data analyzed from Tunacunnhee represent *only* those burials found in and around the mound group and are presumably *not* a representative sample of the population of individuals and their associated statuses that operated in the social system. The discovery of additional burials in the habitation area may alter the interpretation of the analysis of mortuary data. Buikstra's analysis of various data collected from Hopewellian burial structures along the lower Illinois River tended to support the hypothesis that burial treatment reflected behavior associated with a rank society (1972:75).

It is possible to delineate a minimum of three groups of burials at Tunacunnhee based on the previously discussed monothetic subdivision method of classification utilized in analyzing mortuary practices. Group A includes burials associated with Hopewellian Interaction Sphere material. Types I, II and III, defined by the aforementioned classification, are included in Group A. Group B is composed of those burials that were associated with non-Interaction Sphere material, while Group C contains those burials that have no associated artifacts. Individuals in Groups B and C are members of Type IV previously defined. Individuals in Group A would be ranked in the highest position in the hierarchical arrangement, Group B represent a lower ranked group of individuals, while Group C are members of the lowest ranking group.

A slightly different hierarchical arrangement can be hypothesized when burial location is considered along with associated burial attributes. The highest ranked group of individuals at Tunacunnhee would include those burials containing Interaction Sphere material and buried in central mound burial structures. Individuals associated with Interaction Sphere material and buried in peripheral mound burial structures represent a lower ranked group, while those individuals buried in the mounds but lacking Interaction Sphere material hypothetically represent a still lower ranked group. Burials placed outside the mounds represent individuals in the group at the bottom of the hierarchy.

The two models described above should be considered strictly as working hypotheses that must be tested with additional data before they can be accepted or rejected. These models apply only to burials placed in the mound group. If additional burials are disclosed in the habitation area or other parts of the site, it will be necessary to reconsider the structure of the aforementioned models.

Testing of the alternate hypotheses requires the formulation of new test implications. The first alternate hypothesis states:

> The treatment of burials in Hopewellian mortuary structures at Tunacunnhee is representative of the status position of an individual in the social system of an *egalitarian society.*

Similar attributes can be utilized to test this hypothesis as were used in testing the original research hypothesis, except that the results should demonstrate little differentiation of burial treatment of individuals in the same age and sex categories. The treatment of burials at Tunacunnhee does not reflect uniform achievement of status positions, and based on associated burial artifacts, individuals were not equal in their duty-status relationships while living.

The second alternate hypothesis states that:

> The treatment of burials in Hopewellian mortuary structures at Tunacunnhee is representative of the status position of an individual in the social system of a *stratified society.*

While it is possible that a stratified level of social organization existed at Tunacunnhee, it is unlikely. According to Fried, "Stratified societies lacking political institutions of state level are almost impossible to find, although the stage of stratification-without-statesmanship must have occurred several times in the evolution of complex political and economic organization" (1967:185). Even though some of the burial attributes associated with individuals at Tunacunnhee could be interpreted as being representative of status positions in a stratified society, it is unlikely that it is the case.

A second test of the Tunacunnhee mortuary data was made using a method of polythetic agglomerative cluster analysis known as the minimum variance method or Ward's method. This method is based on within group variance. Ward's method is designed to find at each stage those clusters whose merger gives the minimum increase in the total within group error sum of squares (Anderberg 1973:142–43). A cluster is defined as a group of entities where the sum of squares among members of each cluster is minimal.

The cluster analysis of the Tunacunnhee mortuary data utilized six variables:

1) Copper Artifacts
2) Platform Pipes

3) Mica
4) Ground Stone Celts
5) Projectile Points
6) Animal Parts (Bear Canines, Cut Mandibles, Vertebrae, etc.)

The three clusters solution deemed "best" were created by the cluster analysis (Table 5). The dendrogram (Fig. 18) shows the results of the cluster analysis using this method. Cluster I is comprised of six burials (3, 7B, 7C, 15A, 16, and 17) and had the highest binary frequency ratio (percentage occurrence in the cluster/percentage occurrence overall) of 3.01 for celts. Cluster II has five members (6, 7A, 15C, 18A and 23) having the highest binary frequency ratio of 2.01 for animal parts. The third cluster contains seven members (8, 12, 9A, 9B, 14, 18F and 20) and has the highest binary frequency ratio of 2.26 for mica.

Table 5. Significant artifact classes within agglomerative burial clusters

	Percentage in cluster with attribute	*Binary Frequency Ratio*
Cluster I n=6		
Copper Artifacts	66.7	1.10
Ground Stone Celts	66.7	3.01
Projectile Points	50.0	1.81
Platform Pipes	16.7	1.01
Animal Parts	16.7	.34
Mica	16.7	.38
Cluster II n=5		
Animal Parts	100.0	2.01
Copper Artifacts	60.0	.99
Platform Pipes	20.0	1.21
Cluster III n=7		
Mica	100.0	2.26
Copper Artifacts	57.2	.94
Animal Parts	42.9	.86
Projectile Points	28.6	1.03
Platform Pipes	14.3	.86

Burials having no artifact associations were not included in the analysis and form a fourth cluster.

The information contributed by the cluster analysis is not particularly useful for formulating hypotheses concerning the social position of individuals buried at Tunacunnhee. As with association analysis, the usefulness of the cluster analysis is limited by the small sample size used in the analysis (n=18). In both analyses it was necessary to "lump artifacts," that is, to include different types of artifacts under one attribute name so that the frequency of occurrence of an artifact would be great enough to be useful in the analyses. For example, the attribute "Copper Artifacts" included panpipes, earspools, breastplates, awls, and bands manufactured from copper because the frequency of occurrence of any one of the artifacts was not considered to be great enough to be useful.

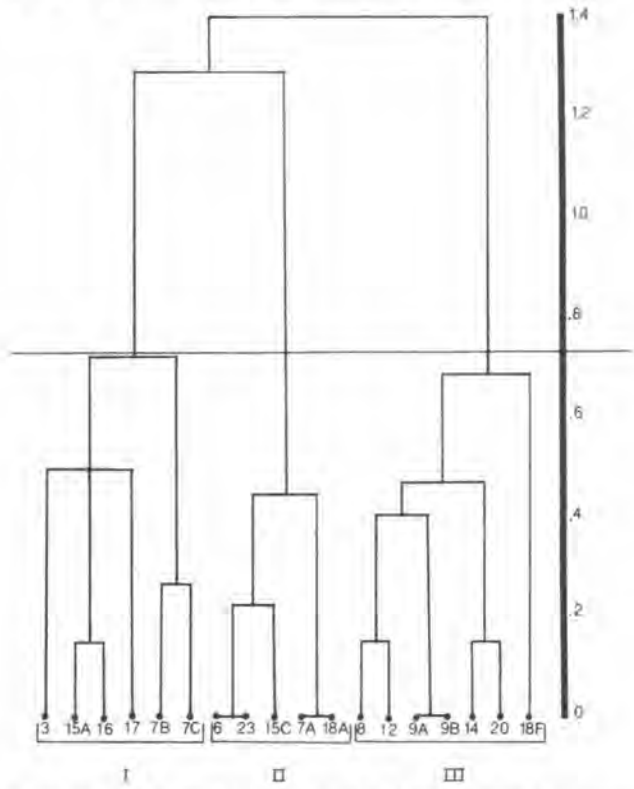


Figure 18. Dendrogram Showing Results of Cluster Analysis Using Ward's Method. Fuse Point—14 at coefficient .723—3 clusters.

V. Similar Sites in the Eastern United States

A number of mounds similar to the Tunacunnhee Mounds have been "excavated" in the adjacent areas of Tennessee, Alabama and North Carolina, as well as in several locations in the Midwest. Some of these mounds are constructed with stone and are structurally similar to Tunacunnhee. Others are constructed without the use of stone. Both types of mounds have been found to contain artifacts that are analogous to those recovered from the Tunacunnhee burial mounds.

1. Stone Mounds

The Shaw Mound, located near Cartersville, Georgia, contained a number of artifacts that closely resembled the Tunacunnhee material. Waring (1945) reported that the Shaw Mound was a stone mound fifty feet in diameter and ten feet high, having a roughly horseshoe shape. The mound was demolished in 1940, but the remains of an extended burial were found lying on the original ground level. A copper breastplate, two large stone celts, and a copper celt were associated with the burial. The trapezoidal breastplate is very similar to the one found in Feature 34 at the Tunacunnhee Site.

William Webb, in his report of the survey of the Norris Basin in Tennessee, mentions several sites that seem to be similar to Tunacunnhee. The Stiner Farm Stone Mounds, located on the Powell River, in Union County, Tennessee, were described as consisting of four stone mounds ranging between 16–18 feet in diameter and composed of large slabs of limestone piled directly on the clay soil. One of the mounds contained an extended adult burial oriented east-west, and placed on the original ground surface. Three projectile points, a banded slate gorget, a sandstone pipe, two bear mandibles, and a large piece of mica were associated with the burial. No pottery was found in any of the mounds (Webb 1938:159).

The Taylor Farm Mound is structurally similar to Mounds C and E at the Tunacunnhee Site. The Taylor Mound was located 3.5 miles west of Clinton, Tennessee, adjacent to the Clinch River. Webb describes the mound as being "a circular earth mound about 30 feet in diameter and 10 feet high at the center . . . situated on a bluff overlooking the river." The mound fill was characterized as being clean clay mixed with humus and containing many large stones. Sixteen adult burials were recovered from various levels within the mound of which one had associated cultural material. The sole artifact having a burial association was a broken steatite monitor pipe located one foot above one of the burials. Webb noted that several of the burials were placed on, or covered with, stone slabs. Ceramic material recovered from the mound consisted of "a few sand tempered stamped sherds and one shell tempered sherd" (Webb 1938:133–140).

A "spool-shaped copper object" was recovered from a large mound in Williamson County, south of Nashville, Tennessee. Thruston reported that it was found deeply imbedded in a layer of ashes and burned clay, on the original surface of the ground (Thruston 1890:302). Faulkner (1968) believes that this mound described by Thruston may have been one of the same mounds reported by Jennings (1946). Jennings reported a mound, located on Reid Hill, as being built on a flat hilltop and measuring 18 feet high and 80 feet in diameter. The mound described by Jennings was built of stone and earth, but was essentially a stone mound (Jennings 1946:126). Unfortunately, Thruston does not describe the Williamson County Mound, so it is difficult to be sure these two accounts are referring to the same mound.

The issue of the age and cultural affiliation of the ubiquitous stone mounds found in northern Georgia and other areas of the southern piedmont has been raised for many years. The Tunacunnhee, Shaw, and the Williamson County Mounds date to the Hopewellian period. Information is inadequate, however, to include the Stiner Mound.

Stone mounds that are structurally similar to the Tunacunnhee Mounds have also been reported from the Midwest. Keller stated that the C. L. Lewis Mound, located in Shelby County, Indiana, meausred 50 × 55 feet, and was 4 feet high. The mound fill was described as being two-thirds limestone and one-third earth. The Lewis Mound contained Adena artifacts such as C-shaped copper bracelets, copper beads, and expanded center gorgets (1960:398).

The Wright Mound Group, located in Franklin County, Ohio, was excavated and described by Shetrone (1924). The large mound measured 28 × 20 feet, and was 3 feet high. The mound was surrounded by a square enclosure and was built with limestone slabs and earth. A stone lined pit and burials covered with several layers of stone were found in the mound and it was reported that the entire mound was covered with

a layer of earth. Hopewellian artifacts associated with the mound included copper earspools, marine shell, a platform pipe, a slate gorget, mica, and "flint knives" (1924:345–47). Data collected in the Midwest support the hypothesis that stone mounds cannot be assigned to any one particular chronological or cultural position on the basis of structure alone.

2. Earth Mounds

Other burial structures in the interior southeast containing material similar to that recovered from the Tunacunnhee Mounds have been found in earth mounds. The Leake Mounds Site (Fairbanks, et. al., 1946) was located on the Etowah River, one and a half miles west of Cartersville, Georgia, and consisted of three structures. Several copper beads and some graphite were found in the mounds, but the mounds were destroyed before a thorough investigation could be done.

A number of earth burial mounds in the central Tennessee area have disclosed artifacts resembling those found at Tunacunnhee. The Glass Mounds, located near Franklin, Tennessee, were reported by Putnam (1882). One of the mounds was 21 feet high and was said to be very similar to some of the Ohio Hopewellian mounds. Material recovered from the Glass Mounds included copper earspools, a copper panpipe, a copper celt, shell beads, mica, galena, and a copper mask. No mention was made as to the type of construction (earth or stone) of these mounds (Griffin, et. al., 1970:107).

The Lebanon Mound, located five miles east of Lebanon, Tennessee, contained two copper plates 11 inches long and 4 inches wide. They were pierced by five holes, one in the center and two at each end. Once again, Thruston does not mention the type of construction of the mounds (Thruston 1890:302).

Keel (1972) has found Hopewellian related items in association with the Connestee occupation of the Garden Creek Site in western North Carolina. Artifacts recovered included sheet copper, copper beads, a copper pin, human and animal figurines, and Ohio Hopewellian ceramics (Walthall and Keel 1974:9).

3. Copena Mounds

The Copena complex is located in the Tennessee River Valley of northern Alabama. Forty-six burial mounds and six caves containing Copena material have been reported by Walthall and Keel (1974). The mounds were described as being low conical structures of earth containing from three to over one hundred interments. The most common burial position for Copena burials is extended, but cremation is also present. The number of mound structures in these sites ranges from one to eight. According to dates obtained from radiocarbon determinations from Copena material, Copena postdates Tunacunnhee by about two hundred years. Walthall (1972) tested two charcoal samples that were associated with primary burials and obtained dates of A.D. 375 (1575 ± 75 B.P.) from the Leeman Mound, Morgan County, labama, and A.D. 320 (1630 ± 65 B.P.), from the Ross Site in the Guntersville Basin, Alabama.

While Copena and Tunacunnhee are closely associated both temporally and spacially, each complex has certain attributes that are not shared with the other. The Tunacunnhee Mounds contained copper panpipes, copper breastplates, and small zoomorphic platform pipes, none of which have been reported from Copena sites. On the other hand, copper bracelets, copper reel-shaped gorgets, galena nodules, and large steatite elbow pipes are common in Copena sites but absent from Tunacunnhee. Walthall and Keel (1974) hypothesized that the restriction of reel-shaped gorgets reflect a lack of a complex distribution system among regional trade and production centers that has been discussed by Struever and Houart (1972) for the Midwest (1974:11).

4. Cave Burial Sites

Mortuary structures containing Hopewellian material have not been restricted to mounds in this part of the south. Caves were utilized in Georgia and other areas of the south for mortuary purposes (Kelly, Personal communication, 1974). Pine Log Cave, located in Bartow County, north of Cartersville, Georgia, reportedly contained copper breastplates, copper earspools, copper beads, and a four legged clay pot (Harris 1950:41). Walthall and DeJarnette (1974) feel that these cave burials are strongly associated with Copena cave burials in Alabama.

Cave burials containing copper artifacts have been found in caves on the slopes of the mountains in Lookout Valley. The possibility of cave burials at Tunacunnhee Site does exist, but due to inaccessability and lack of time, the nearby limestone caves and crevices were not thoroughly investigated.

5. Stone Enclosures

In addition to stone mounds, numerous stone structures and enclosures are located throughout the southern piedmont and mountains (Smith 1962).

Walthall and Keel (1974:7) have compared these structures with Ohio Hopewellian structures. The Old Stone Fort, located in Manchester, Tennessee (Faulkner 1968) is one of the more intensively investigated stone structures in the interior southeast. Walthall and Keel maintain that, "based on their formal and structural similarities, the structures can, at least tentatively, be associated with the Middle Woodland phase in this area" (1974:7).

Some of the aforementioned sites contained mounds that were made of stone and appear to be structurally similar to the Tunacunnhee Mounds. Others were not made of stone. *The presence or absence of stone in mounds may be more positively correlated with the accessability to a source of stone than any cultural or temporal differences in the sites.*

One of the more significant facts emphasized by the excavation of the Tunacunnhee Mounds was that the cultural affiliation of "stone mounds" cannot be generalized. The site contained eight stone mounds and originally all were thought to be of aboriginal origin. Subsequent excavation, however, disclosed that four of the structures were built around A.D. 150 and that the remainder were constructed about A.D. 1900.

In the future, archaeologists will have to be aware that stone mounds cannot be affiliated with one cultural or temporal period without thorough investigation.

VI. Tunacunnhee and the Hopewellian Interaction Sphere

The time from 200 B.C. to A.D. 400 is often called the "Hopewellian Period" since it was during this period that many archaeologists feel the tradition known as Hopewell "dominated" most of the east. Whether or not the term "dominated" is appropriate is not the concern of this paper, but most radiocarbon determinations from sites containing material recognized as being Hopewellian fall within the range of the aforementioned dates.

Some people feel that Hopewell developed from Adena (Dragoo 1964) which originated out of an Archaic base. Others argue that some of the Hopewellian attributes (bicymbal earspool, panpipes, etc.) have a Meso-American origin (McMichael 1964:131).

Hopewell was originally discovered and named for the Ohio farm where the first site was located and excavated. The location of the origin of Hopewell has been a problem of interest to some archaeologists for many years. Griffin (1964) believes that the Illinois area was the initial area of development based on evidence that ceramics seem to have "developed" from earlier Woodland ceramic types. Classic Ohio Hopewell is viewed as having resulted from the influence of the Illinois River version of Hopewell on several hundred years of Adena growth (Griffin 1964:241). Regardless of when and where it "started," sites containing "characteristic" attributes of Hopewell (earspools, panpipes, platform pipes, obsidian, Hopewellian Series ceramics, etc.) are found throughout a wide area of eastern North America. Griffin (1967) states that the Illinois "influence" spread north, northeast and west into Iowa, Missouri, Wisconsin, Minnesota, Michigan, and Kansas. Ohio Hopewell "spread" into Pennsylvania, New York, Louisiana, Alabama, Tennessee, North Carolina, Georgia, and Florida (Fig. 19) (Griffin 1967:186).

The most extensive excavation of Hopewellian sites (primarily mortuary areas) has been in Ohio. Work dating back to the end of the last century has built up a long list of Hopewellian sites in the area including: Hopewell, Seip, Newark, Wright and Mound City. Some of the more interpretative analysis has been done with Illinois Hopewell data. Struever and Houart have developed models to help define interaction spheres on different scales and of different types (1972).

Numerous regional subdivisions of Hopewell have been developed by archaeologists since the excavation of the first Hopewellian site in Ohio. The major sites in the Ohio Hopewell area have previously been mentioned. Other areas are: Kansas City, located north-central Missouri (Renner, Trowbridge, and Fisher Sites); Havana, in the Illinois area (Havana, Clear Lake, Dickinson, Knight and Weavers Site); Goodall in Indiana and Michigan (Goodall, Porter, and Converse Sites); New York in western New York (Cain and Irvine Sites); Point Peninsula in southeast Ontario (Le Vesconte and Canoe Points Sites); Marksville in Louisiana (Troyville, Crooks, Marksville Sites); Miller in Mississippi (Bynum and Twin Lakes Sites); and Santa Rosa–Swift Creek in Florida and south Georgia (Santa Rosa, Crystal River, Mandeville Sites) (Griffin 1967:181). The validity of the divisions is questionable; that is, how does one distinguish between a Santa Rosa and a Porter Hopewell site except for geographical location? Nevertheless, these divisions have been used historically and do demonstrate the very wide distribution of Hopewellian artifacts.

The interpretation of the nature of Hopewell and the meaning of the term "Hopewell" have changed drastically since the first sites were excavated in the last part of the 19th century. "Hopewell" has been used to refer alternately to a "culture type, a culture phase, a temporal horizon and a form of burial complex or cult" (Struever 1964:87).

In the nineteenth century, Hopewellian mounds in Ohio and elsewhere were seen as being the result of work done by a vanished race of mysterious "Mound Builders," the construction of the mounds and earth works considered to be beyond the capabilities of the local American Indian group. During the first quarter of the twentieth century it was recognized that what had been commonly labeled as "Mound Builders" was actually three separate cultural manifestations: Adena, Hopewell and Fort Ancient (Pruefer 1964:41–42). Some authorities, basing their judgment on the elaborate treatment of burials, saw Hopewell as a religious cult that was part of a number of differ-

KEY

1. Tunacunnhee Mounds
2. Shaw Mound
3. 9Fu14
4. Crystal River
5. McRae Site
6. Marksville
7. Crooks Site
8. Helena Crossing
9. Twin Lakes
10. Bynum Mounds
11. Miller Site
12. Glass Mounds
13. Mandeville Site
14. Porter Site
15. Pharr Mounds
16. Ice House Bottom
17. Garden Creek

Figure 19. Major Hopewellian Affiliated Sites in the Southeast.

ent cultural groups located throughout the east. Other archaeologists viewed Hopewell as an "interaction sphere" involving the exchange of ideas, raw materials and finished products between societies that exhibited a high degree of regional variations.

A hypothetical exchange network existed throughout the eastern United States through which the aforementioned exotic materials were obtained. It has been proposed by some archaeologists that the exchange network provided the mechanical basis for the spread of the Hopewellian ceremonial system, the aim of which seems to have been for the production of objects primarily intended for burial with the dead (Pruefer, 1965:132).

The Interaction Sphere, as described by Caldwell, was based on a significant number of similarities within the mortuary complex of a large number of widely scattered regions. Caldwell noted "striking regional differences in the secular domestic and nonmortuary aspects of the widespread Hopewellian remains; and an interesting, if short, list of exact similarities in funerary usages and mortuary artifacts over great distances" (1964:138). Caldwell's hypothesis was based on the concept of exchange of certain raw materials and finished products between the various interacting regions, "that various separate societies were intereacting within and beyond the boundaries of their respective regional traditions is perhaps the one thing about the Hopewellian situation we can be sure of" (1964:138).

Some archaeologists have proposed that the Interaction Sphere was not designed exclusively for the exchange of mortuary oriented materials. Struever has suggested that the term "Hopewell" be used to describe the prehistoric logistics network within which raw materials circulated along with stylistic

and ideological concepts that underwent local modification (1964:88–89). The interaction sphere represents the exchange of goods and ideas among regionally specialized cultural groups.

The mechanism that moved the goods within the Interaction Sphere is not known. Hopewellian items probably functioned in the social sub-system of the Middle Woodland culture. As previously discussed, some of the "typical" Hopewellian artifacts may have served to indicate status, their possession being status restricted while other items may have functioned to communicate or ritually reinforce specific statuses. These objects appear to be status specific items that, while often being found in a burial context, were not exclusively burial funiture. Investigation in the habitation area of sites in the Scioto and Illinois Valleys indicate the diagnostic Hopewellian items were kept, used, and lost in the community (Struever and Houart 1972:49).

Struever and Houart have proposed that the Interaction Sphere was not a one level movement of Interaction Sphere artifacts and raw materials among local and regional units. They have hypothesized that there were at least three levels of interaction: (a) among villages within the region; (b) among nearby regional cultures; and (c) among cultures scattered over a broad geographic area. The authors also noted that the distribution of "tradition defining" (Woodland) and "interaction sphere defining" (Hopewellian) artifacts is not always associated temporally or spacially in the east. The reason for this is that "subsistence" artifacts reflect the differing Middle Woodland cultural-ecological adaptations, while "status" related items reflect the differing Middle Woodland interaction mechanisms that maintain ties between regional cultures, as well as between local groups within the regions (1972:78).

Flannery (1968) has developed a model for an exchange network based on data concerning Olmec and highland Oaxaca interaction in Mexico. The model may be applicable to the Hopewellian Interaction Sphere. According to Flannery:

> . . . data from several parts of the world suggest that a special relationship exists between consumers of exotic raw materials and their suppliers, especially where the suppliers belong to a society which is only slightly less stratified than that of the consumer. First, it seems that the upper echelon of each society often provides the entreprenuers who facilitate exchange. Second, the exchange is not 'trade' in the sense that we use the term, but rather set up through mechanisms of ritual visits, exchange of wives, adoption of members of one group by the other, and so on. Third, there may be an attempt on the part of the elite of the less sophisticated group to adopt the behavior, status trappings, religious symbolism or even language of the more sophisticated group—in short, to absorb some of their charisma. Fourth, although the exchange system does not alter the basic subsistence pattern of either group, it may not be totally unrelated to subsistence. It may, for example, be a way of establishing reciprocal obligations between a group with an insecure food supply and one with a perennial surplus (1968:105).

Flannery states that the groups most likely to exchange with and emulate the Olmec were the most highly developed societies in the highlands, not the lesser developed ones (1968:106). Walthall and Keel have hypothesized that the proposed differential degree of emulation may explain why there appears to be a varying degree of participation and conservation of some groups in the south in adopting Hopewellian Interaction Sphere concepts and ideology (1974:12).

In contrast to the Hopewellian Interaction Sphere model as formulated by Caldwell (1964), Struever and Houart (1972) and others, Griffin has developed an alternate hypothesis concerning the distribution of certain classes of artifacts and raw materials throughout the eastern United States during the Woodland Period. Griffin discusses the presence and utilization of obsidian as an example of an important exotic raw material among people participating in Hopewellian cultural attitudes. He states that the utilization of exotic raw material, such as obsidian, for pragmatic and ceremonial activities did not originate or terminate with Hopewellian culture in the eastern United States. As early as the Late Archaic, marine shells were distributed through the Midwest and native copper and copper artifacts throughout the Upper Great Lakes (Griffin 1965:148).

> The Hopewellian cultural pattern was a gradual elaboration of this pattern in which the several Hopewellian areas participated. The pattern was not conceived in a single center by a small group of people who then spread this behavior into other societies. The pattern was not spread as only a religious form nor was it limited to small segments of the Hopewellian societies (1965:148).

The way in which obsidian reached Ohio and Illinois has been of some controversy. Griffin hypothesizes that the total amount of obsidian from Hopewellian sites might have been obtained on one trip to the Yellowstone area by a group of adventurer-traders who were seeking to capitalize on the Hopewellian desire for certain exotic materials. If there was one shipment of obsidian, then the point of redistribution was probably the Hopewell Site in Ross County, Ohio, since the site has produced more obsidian than other Hopewellian sites combined (1965:146).

Hopewellian sites in Wisconsin, Illinois and Iowa have yielded obsidian that Griffin hypothesizes was obtained either from Ohio or from "traders" on their

return trip to Ohio from the west. He states that if the obsidian was procured through inter-tribal trade, then groups in Illinois and Wisconsin would have been in a better geographical position to obtain obsidian on its way east than would Ohio centers. If inter-tribal exchange of obsidian from Yellowstone was occurring at that time, Griffin speculates that one would expect to find significant amounts of obsidian in a large number of Middle Woodland sites between the Upper Mississippi River and the Rocky Mountains. Little obsidian has been found in that area. (Griffin 1965:147).

In summary, Griffin believes that Hopewellian material found outside the immediate Ohio area was distributed by a small number of individuals, probably males, who transported and traded certain exotic items with other groups or individuals in the eastern United States in exchange for safe passage through "foreign" territory, and other favors. He feels that the mechanism for exchange was direct face to face trade instead of a complex long distance trade or exchange network involving numerous "middlemen." Griffin does not support the hypothesis that exotic materials were accumualted or "banked" by certain Hopewellian groups for the purpose of subsequent redistribution through multi-level exchange networks as proposed by certain models formulated for the Hopewellian Interaction Sphere exchange network (Griffin 1975, Personal communication).

The excavation of the Tunacunnhee Mounds has produced the largest concentration of Hopewellian items in the interior southeast. Many Hopewellian traits found in Illinois and Ohio involve the use of exotic raw materials that were either used in their natural form or manufactured into a wide variety of objects. These exotic materials include copper, mica, "exotic" flint, marine shell, bear canines, shark teeth, silver, and meteoric iron. Items manufactured from these materials include earspools, panpipes, platform pipes, gorgets and others.

The Tunacunnhee Site presents a situation where Hopewellian items are restricted to the mortuary aspect of the society. No Interaction Sphere artifacts have been recovered from the habitation area. Utilitarian items common in the habitation area have been found in limited numbers in the mounds.

Some of the burials at Tunacunnhee contained items that would be considered to be "subsistence" or "technomic" artifacts, that is, those items used to cope with the physical environment, while other burials contained items that are largely "Interaction Sphere defining" and would be considered to be sociotechnic or status defining items. Perhaps burials with only "subsistence" artifacts included people who were only recognized by the local group, while the status of people buried with "Interaction Sphere" related items was recognized not only within the local group, but by members of other societies. Burials with numerous "status-defining" Hopewellian artifacts such as panpipes, earspools, mica, etc. represent the elite or upper echelon of the less sophisticated society hypothesized by Flannery (1968) that would attempt to adopt the behavior, status trappings, religious symbolism, and language of the more sophisticated group. In this case, the more sophisticated group would be the upper echelon of other societies participating in the Interaction Sphere. This should be considered only as a working hypothesis which must be rigorously tested before it can be accepted or rejected.

If the habitation area of the Tunacunnhee Site is coeval with the mounds, the subsistence items of the people buried in the mounds are very similar to those found in other Middle Woodland sites throughout the interior Southeast. It seems that some of these sites within the region were interacting on a socio-political or economic level. Most likely, they were also exchanging raw materials, finished products, and ideas with other Middle Woodland societies in other parts of the east.

Struever and Houart have proposed that Middle Woodland culture in the eastern United States be viewed in terms of two complementary concepts—the regional tradition and the Interaction Sphere. The variation in size and complexity of Hopewellian sites, and the quantity and quality of Interaction Sphere items found at the sites may result from the differing functions of sites in "a series of transactional systems, from small- to large-scale, through which quantities of raw materials and finished goods moved" (1972:79). The model developed by Struever and Houart was applied to the Hopewellian manifestation in the area of the southern Great Lakes. It is hypothetically possible that a model similar to the one developed by Struever and Houart could be applied on a much more restricted level in the Southeast. The major problem with developing a model of this type in the Southeast is the lack of properly excavated and adequately documented sites.

Many of the raw materials used in the manufacturing of Hopewellian goods are found in the Southeast. There is increasing evidence that some of the raw materials used in manufacturing Hopewellian items found in southeastern sites were from local sources. Analysis of copper from Tunacunnhee tentatively indicates that ore from deposits in North Carolina and Tennessee may have been used in manufacturing arti-

facts. These results were obtained by using analytical techniques such as optical spectroscopy (Goad 1974:9) and X-ray fluorescence (Schneider 1974). It is hypothetically possible that other Hopewellian sites located throughout the southeast were sources of strategic raw materials.

Chapman has suggested that the Ice House Bottom Site and the Garden Creek Mound 2 were involved in the diffusion of sheet mica. Garden Creek Mound 2 is located near an area with rich mica deposits. There are numerous Ohio Hopewell artifacts at the sites, and there are large quantities of mica at the Hopewell and Mound City sites in Ohio. Unfortunately, it has not yet been demonstrated that the mica found at these two sites in Ohio came from the deposits near the Ice House Bottom or the Garden Creek Sites (1973:110).

It is probable that sites located along the Gulf and its tributaries in Georgia, Florida, and Alabama (Santa Rosa, Crystal River, and Mandeville) could have been involved in the collection and transmission of shell, shark teeth, and shark vertebrae. The Shaw Mound, located near Cartersville, Georgia, is situated in the center of a large deposit of hematite and limonite used as pigments. The Ice House Bottom and Garden Creek Sites are located fairly close to sources of native ore in Tennessee, North Carolina, and Georgia.

The level of exchange involving these raw materials may not be uniform. Mica, shell, and sharks' teeth from the Gulf may have been distributed through the entire Hopewellian exchange network in the east, while copper and hematite and other material may have been used on more of a regional level. It would be expected that raw material from a region that was the only source of that material would be much more widely distributed throughout the east than raw materials with numerous other sources. Further analysis of material from Hopewellian sites to determine the origin of the raw material used in construction will contribute much needed data to the interpretation of the type of trade taking place in the east.

The Tunacunnhee Site is located in a region of the southeast that has large deposits of coal and iron. It is doubtful, however, if either of these two minerals were strategic to the location of the site. There are large deposits of hematite in and around Dade County that may possibly have been important.

It is also very possible that numerous items that were important in the Hopewellian Interaction Sphere are not preserved in the archaeological record, such as certain desired plants or animals, but the contemporary flora and fauna of the Lookout Valley area do not seem to be unique when compared to other areas of the highland south. The type of flora and fauna available in the area today may not, however, accurately reflect the range of plant and animal life available in the past.

Another factor relating to the location of the Tunacunnhee Site is transportation and communication. The presence of large numbers of Hopewellian artifacts may be the result of the site's proximity to trade or transportation routes between the midwest and the southeast. It has previously been hypothesized that certain raw materials commonly found in Hopewellian mounds in Ohio and elsewhere are available on the Gulf Coast to the south of Tunacunnhee (shell, shark teeth, shark vertebrae). Other locally available materials (copper, mica, hematite, crystal quartz, galena, etc.), may have been transferred through the Interaction Sphere to other parts of the east. In view of the above, access to transportation routes would have to be taken into consideration as a possible explanation for site location.

The Tunacunnhee Site is located approximately ten miles up Lookout Creek (southwest) from the Tennessee River. The site is accessible by water, but it seems unlikely that the site would be so far from the Tennessee River if water was the only major line of transportation and communication. Walthall and Keel (1974:10) have suggested that the Hopewellian Interaction Sphere concepts and artifacts moved from the Ohio Valley along a network of trails during the Middle Woodland period. Many of these trails were "documented" by Myer (1928). If Myer's trails are based on reliable information, then the Tunacunnhee Site would have been located near the junction of the Long Island and Trenton (Lookout Mountain Town) trail (Fig. 20) and the Chattanooga-Willstown Road (Myer 1928:846).

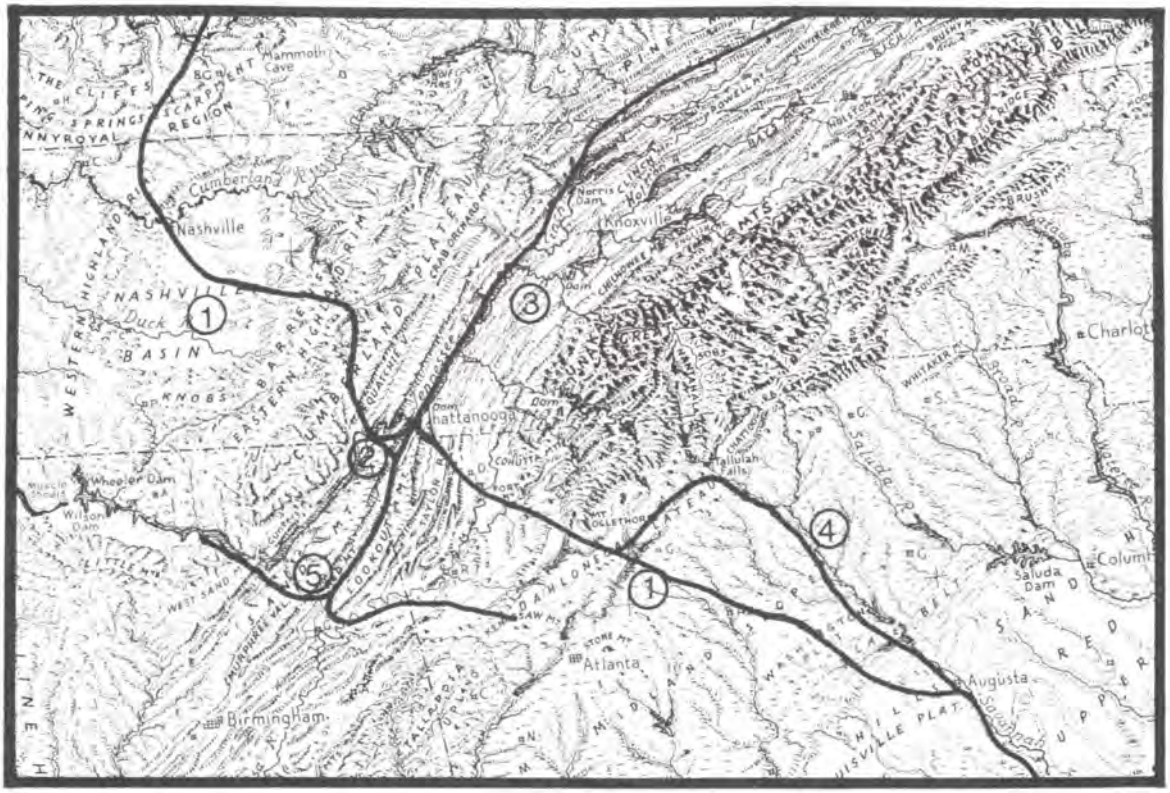
The Long Island and Trenton (Lookout Mountain Town) trail branches off of the Cisca and St. Augustine trail after it crosses the Tennessee River near the junction of the Alabama, Tennessee, and Georgia borders. The Long Island and Trenton Trail then goes southward into Lookout Valley where it joins the Chattanooga and Willstown Road. The Chattanooga and Willstown Road splits from the Cisca and St. Augustine Trail near the present city of Chattanooga and goes southwestward down Lookout Valley into northeastern Alabama.

The Tunacunnhee site was located in a very strategic position *if* these trails were in use during the Middle Woodland period. The Cisca-St. Augustine Trail ran northwestward from the Chattanooga area toward Nashville and Ohio, and southward near Car-

tersville, Georgia, connecting with other trails in southern Georgia and the coastal area of Florida. According to Myer, the earliest reference to the Cisca and St. Augustine trail was "Franquelin's 1684 map of La Salle's discoveries." Franquelin obtained the data used in his map from reports written by La Salle (1928:847).

The importance of the location of Tunacunnhee is made more significant by the fact that it is situated at the base of Lookout Mountain, below one of the few "gaps" in the mountain that would permit passage over the ridge. Most of the western face of the mountain has steep cliffs that would severely inhibit crossing. Tunacunnhee is located at the first point where a relatively easy crossing would be possible after leaving the Tennessee River and traveling southwest along Lookout Creek. The location would permit the inhabitants to have access to transportation routes up and down the valley, as well as over the mountain into the remainder of Georgia and the southeast.

Whether the site was established to control or maintain the route or was only a regional village that happened to be near the route, would be difficult to determine. The site may have served as a collection point for raw materials from the surrounding region which might explain why there were apparently no sources of desired raw materials close at hand.



KEY

1. Cisca and St. Augustine Trail
2. Long Island and Trenton (Lookout Mountain town) Trail
3. The Great Indian Warpath
4. Augusta–Cherokee Trail
5. The Chattanooga–Willstown Road

Figure 20. Major Indian Trails as Presented by Myer (1928) in the Area of the Tunacunnhee Site. Other Trails in the Area Have Been Omitted.

Plate 1. View of Tunacunnhee site (center of photograph) looking west from the top of Lookout Mountain.

Plate 2. Mound A (left) and Mound B (right)

Plate 3. Mound D (left) and Mound C (right)

Plate 4. Stone mantle—Mound C

Plate 5. Differential clay fill—Mound C

Plate 6. Profile of N110 line—Mound C

Plate 7. Copper artifacts on bottom of Feature 30—Mound C

Plate 8. Feature 7—Mound C

Plate 9. Stone fill—Feature 1

Plate 10. Burial 7A—Feature 1

Plate 11. Test excavations in habitation area

Plate 12. Stone filled pit—Feature 13

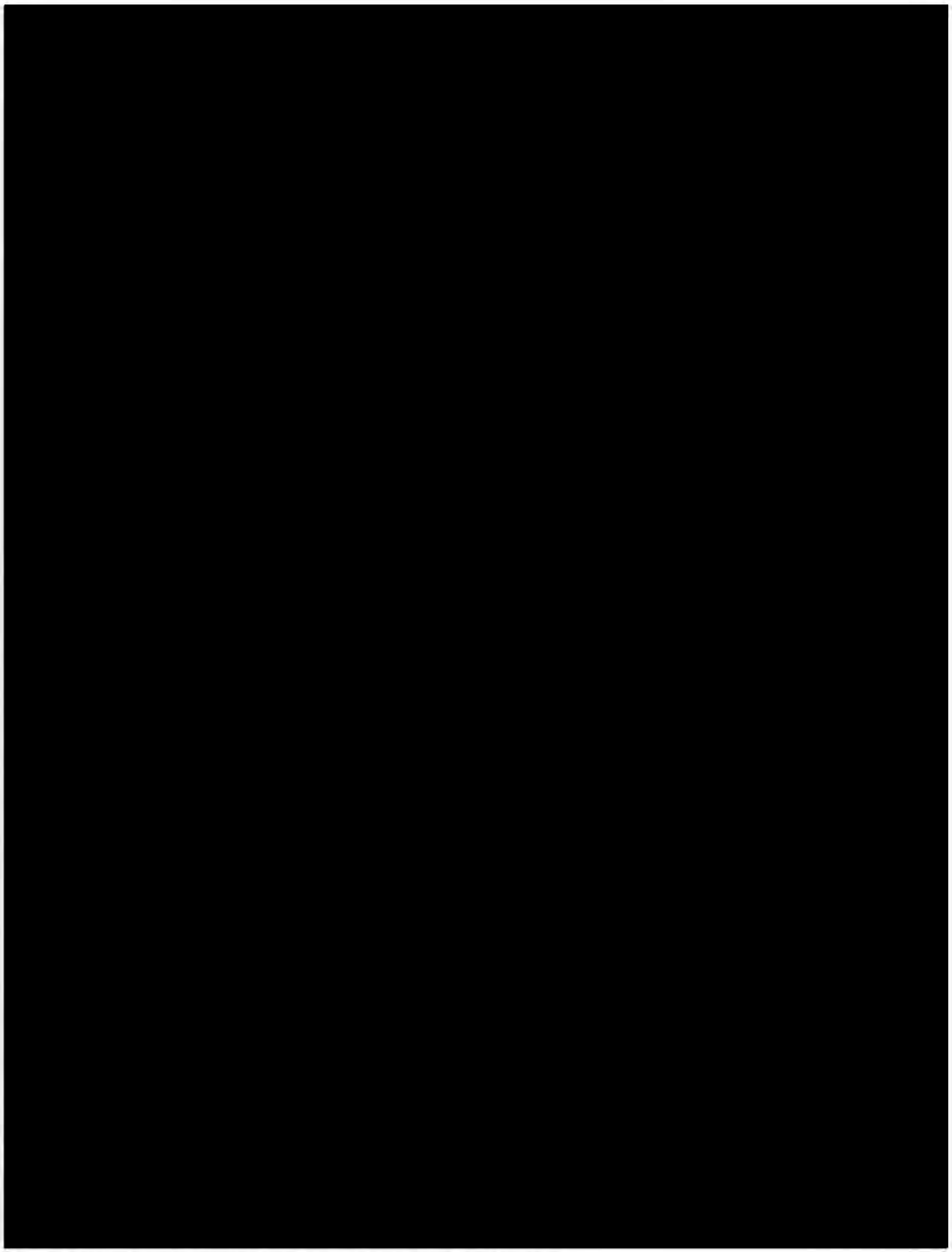


Plate 13. Copper breastplate (A) and mica disc (B) from Feature 30 (Mound C).

Plate 14. Earspools (A and B), shark vertebrae (C), shark teeth (D) and copper awl (E) from Feature 30 (Mound C).

Plate 15. Copper panpipes from Burial 17 (A, B, and E), bottom of panpipes A and B (D and D), outer disc of earspools in Burial 17 (F) (Mound E).

Plate 16. Celt (A) and platform pipe (B) from Burial 17 (Mound E).

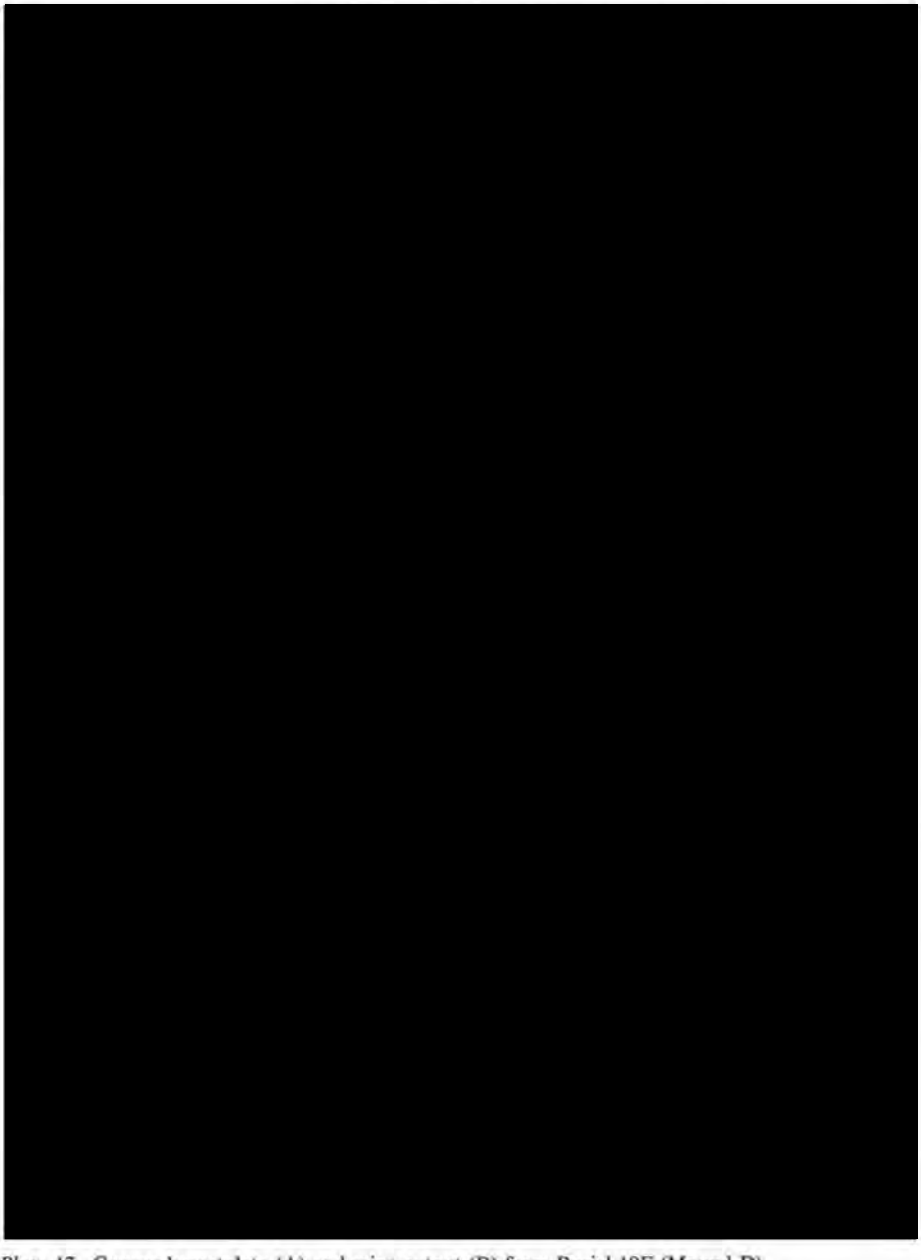


Plate 17. Copper breastplate (A) and mica cutout (B) from Burial 18F (Mound D).

Plate 18. Silver covered copper panpipe (A), bar gorget (B), quartz crystal projectile point (C), and bear canines (D) from Burial 18F (Mound D).

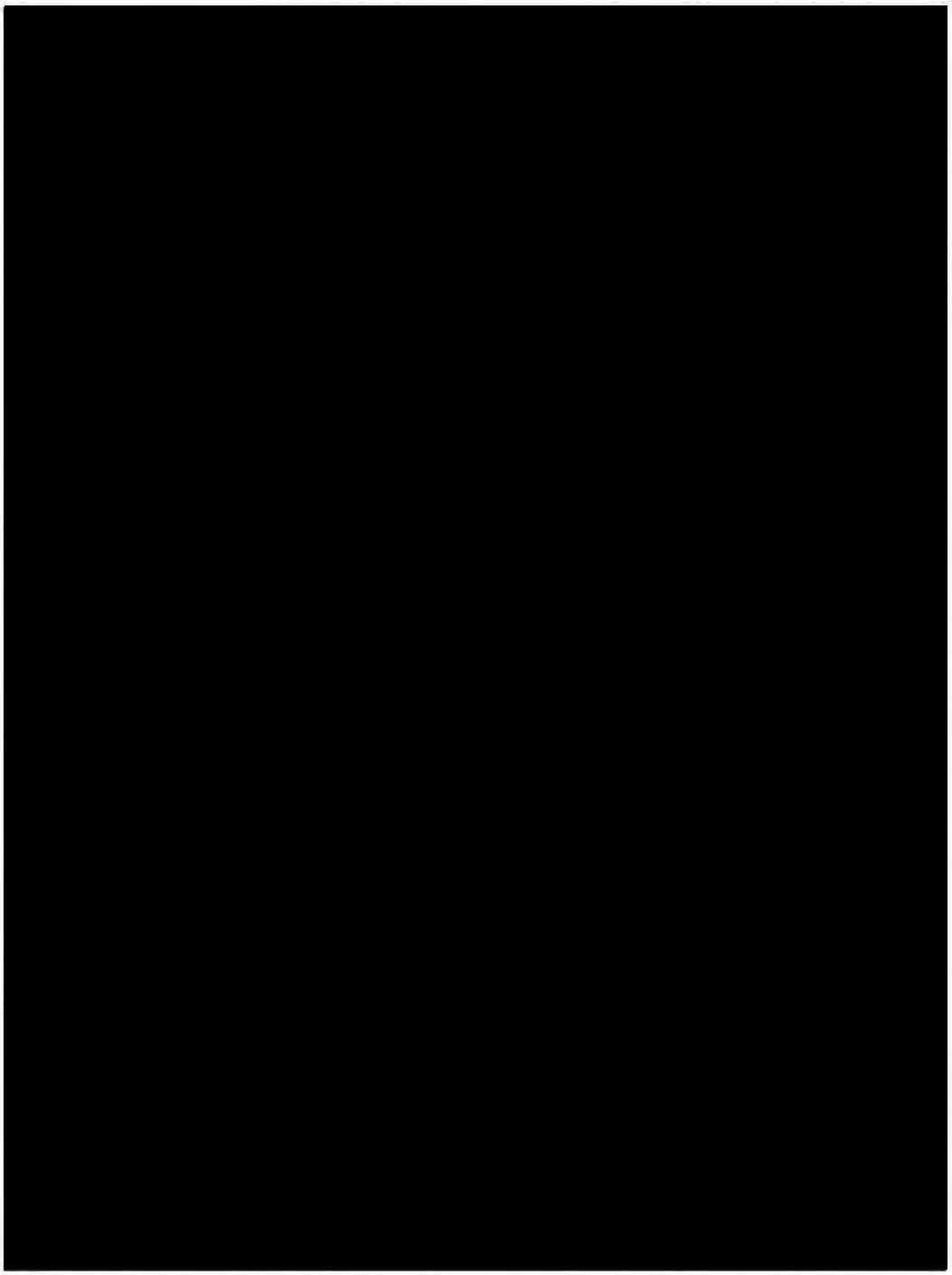


Plate 19. Platform pipes (A, C, D, and E) and tubular pipe (B) associated with Burial 18F (Mound D).

Plate 20. Copper object (A) associated with Burials 9A and B (Mound A), effigy platform pipe (B) from Burial 15C (Mound C), projectile points (C) located on knee of Burial 15A (Mound C), mica (D) from skull of Burial 8 (Mound C) and mica crystal (E) associated with Burial 9A (Mound A).

Plate 21. Ceramic vessels recovered from northern periphery of Mound C.

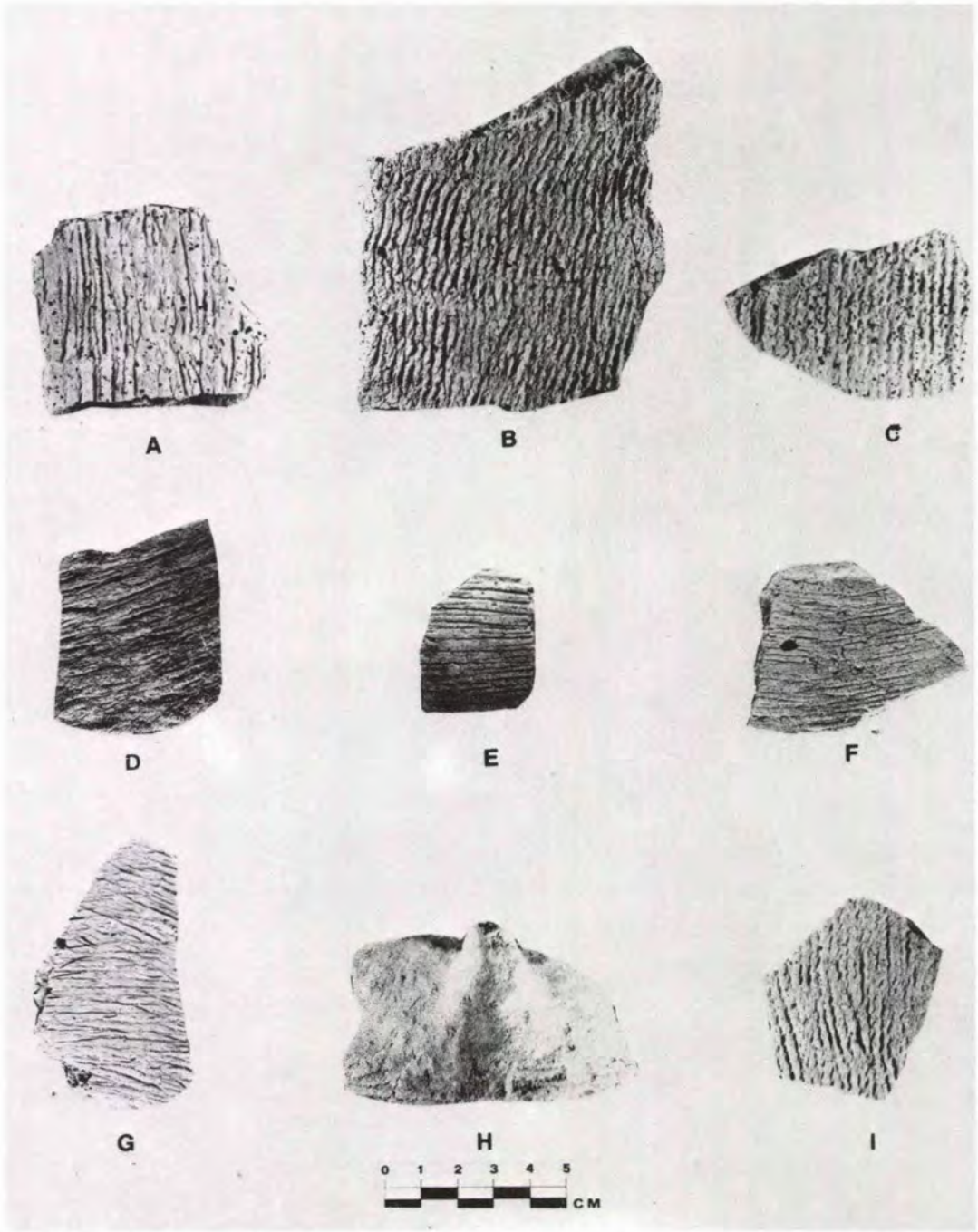


Plate 22. Ceramics recovered from features in habitation area: cord marked limestone tempered (A, B, and C), simple stamped sand tempered (D, E, and F), simple stamped limestone tempered (G), sand tempered tetrapod (H), and cord marked sand tempered (1).

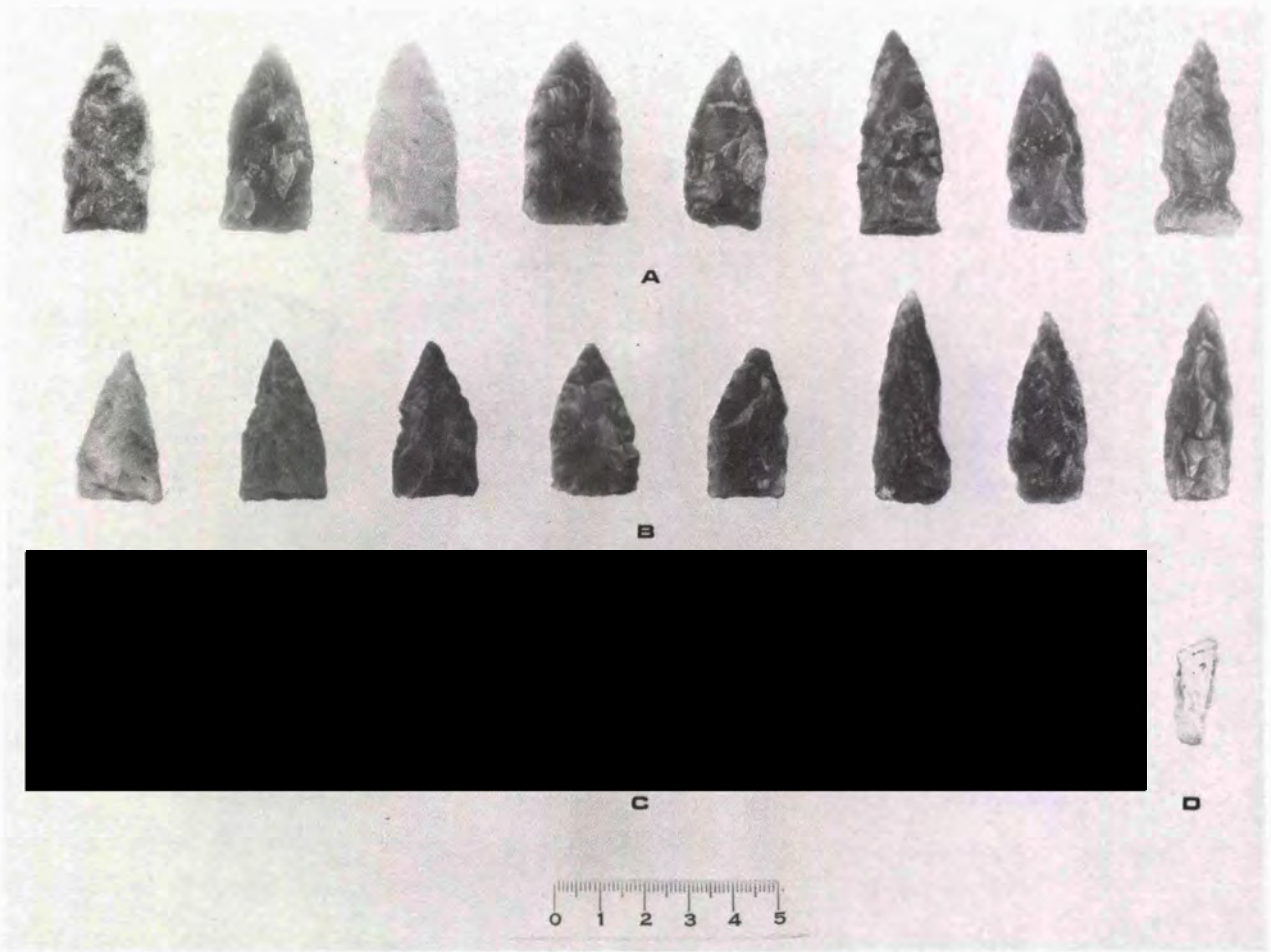


Plate 23. Projectile points recovered from habitation area (A and B), chert prismatic blades (C) and quartz prismatic blade (D) from habitation area.

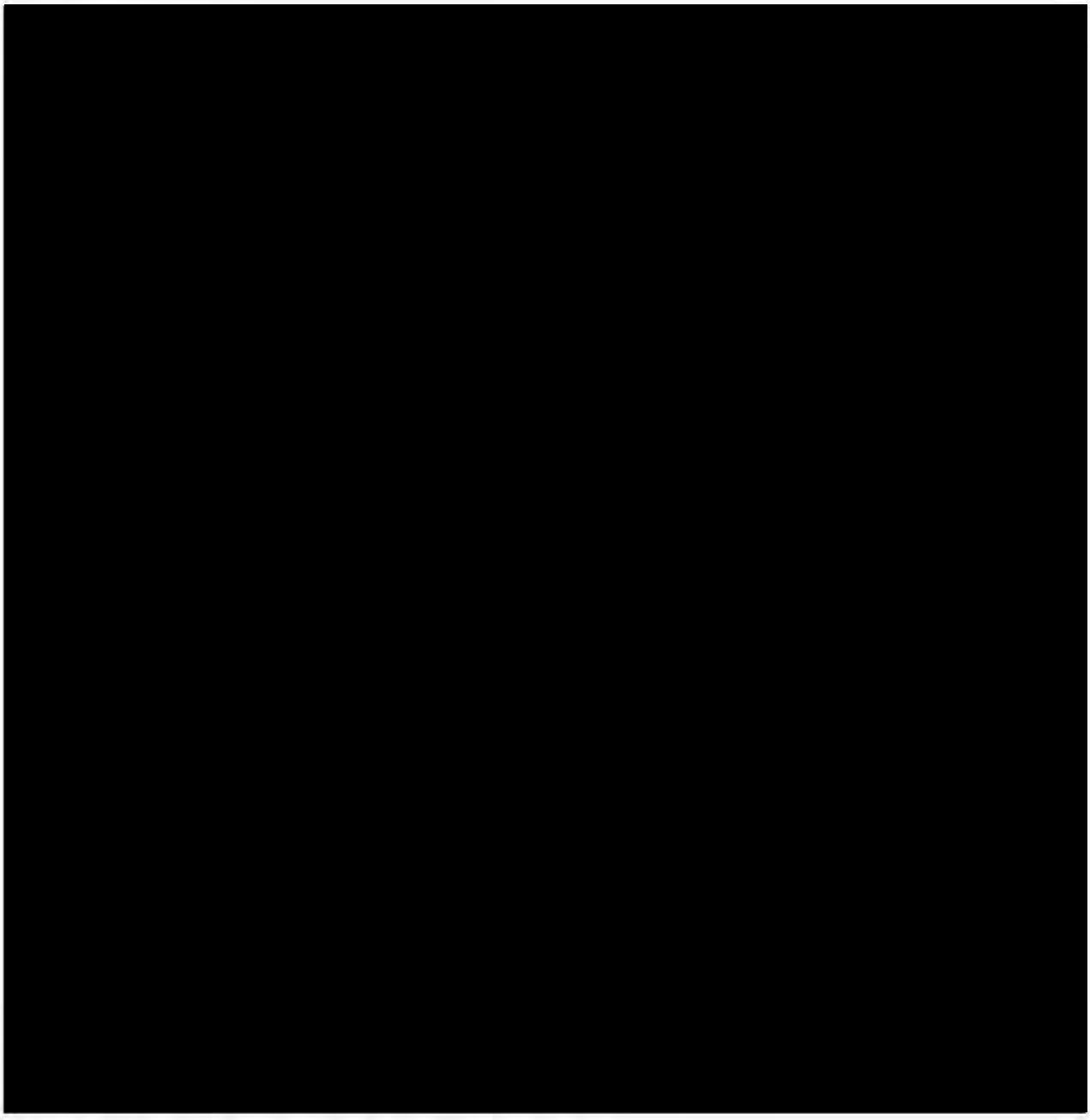


Plate 24. Wooden spools and copper adze from the south side of Mound E.

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