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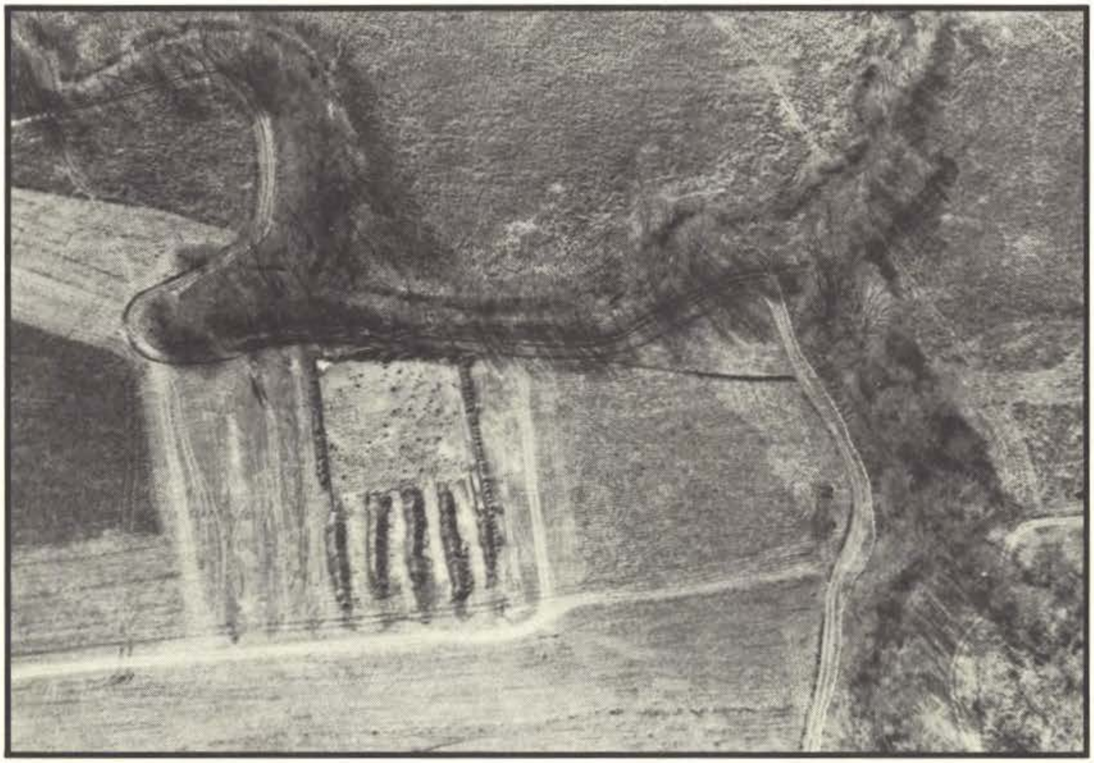
No. 1, The Aenon Creek Site (40MU493), Late Archaic, Middle Woodland, and Historic Settlement and Subsistence in the Middle Duck River Drainage of Tennessee

Charles Bentz Jr.

Tennessee. Department of Environment & Conservation.

THE AENON CREEK SITE (40MU493):
LATE ARCHAIC, MIDDLE WOODLAND, AND HISTORIC SETTLEMENT AND SUBSISTENCE IN THE MIDDLE DUCK RIVER DRAINAGE OF TENNESSEE



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THE AENON CREEK SITE (40MU493):
LATE ARCHAIC, MIDDLE WOODLAND, AND HISTORIC SETTLEMENT AND SUBSISTENCE IN THE MIDDLE DUCK RIVER DRAINAGE OF TENNESSEE

PREPARED FOR

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Gary Barker 7/1995

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The field and laboratory crews consisted of the following personnel:

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James Myster
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Several individuals, noted on the title page, contributed their specialized abilities to the completion of this report. Terry Faulkner prepared the final maps. Miles Wright photographed the artifacts. Mary Martha Ruple typed the manuscript. The efforts of all the people involved with this project are greatly appreciated.

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INTRODUCTION

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The Aenon Creek site (40MU493) is situated on a Pleistocene terrace at the confluence of Aenon Creek and Grassy Branch approximately 3 km upstream from the mouth of Aenon Creek at Rutherford Creek and an additional 32 km upstream from the confluence of Rutherford Creek and the Duck River in Middle Tennessee (Figures 1 and 2). The site was initially located in October, 1985, by Tennessee Department of Transportation personnel, who were conducting an archaeological reconnaissance of land to be impacted by the construction of the Saturn Parkway and an interchange with the relocated Port Royal Road. A low to moderate density of cultural material covered an area of approximately 1.2 ha in an agricultural field with low surface visibility. A "grab bag" collection of material was recovered, which included Late Archaic, terminal Late Archaic, and Middle Woodland projectile points/knives. It was determined that all of the site area would be impacted by construction of the Saturn Parkway.

The University of Tennessee-Knoxville was contracted by the Tennessee Department of Transportation to undertake a program of Phase II archaeological investigations at the Aenon Creek site. Test excavations were conducted during the period from 7 September to 5 October, 1987. A total of 596 work hours was expended at the site during this period. This phase of the study included a controlled surface collection of the entire site surface, the hand excavation of four 1 m x 1 m units, and the machine excavation of nine 2 m wide transects spaced 10 m apart. A total of 1,742 m^2 of plowzone was removed from the site area. Twenty-five possible pit features and 10 possible postholes were exposed. Twenty-one pit features were of prehistoric cultural origin while four of the potential pit features and the ten potential postholes were tree or rodent disturbances. The cultural affiliation of five pit features was determined to be Middle Woodland while one pit feature was assigned to the Late Archaic period. It was concluded by the State Archaeologist and the Tennessee Department of Transportation archaeological supervisor that a program of Phase III data recovery was necessary on the Aenon Creek site.

The University of Tennessee-Knoxville was subsequently contracted by the Tennessee Department of Transportation to undertake a program of Phase III archaeological data recovery continuous with the Phase II investigations at the site. Excavations were conducted during the period from 6 October to 21 November, 1987. A total of 1,486 work hours was expended at the site during this period. A backhoe was utilized to remove four 8 m wide strips of plowzone between the areas of five 2 m wide backhoe transects in which pit features were found during the Phase II investigations. An additional 1,600 m^2 of plowzone was removed from the site area forming a block excavation measuring approximately 52 m x 42 m. Forty-nine additional possible pit features and 75 possible postholes were exposed. Thirty-six of the potential pit features and an arc of 4 potential postholes were of prehistoric or historic cultural origin while 13 of the potential pit features and 71 possible postholes were tree or rodent disturbances. The majority of the features on the Aenon Creek site

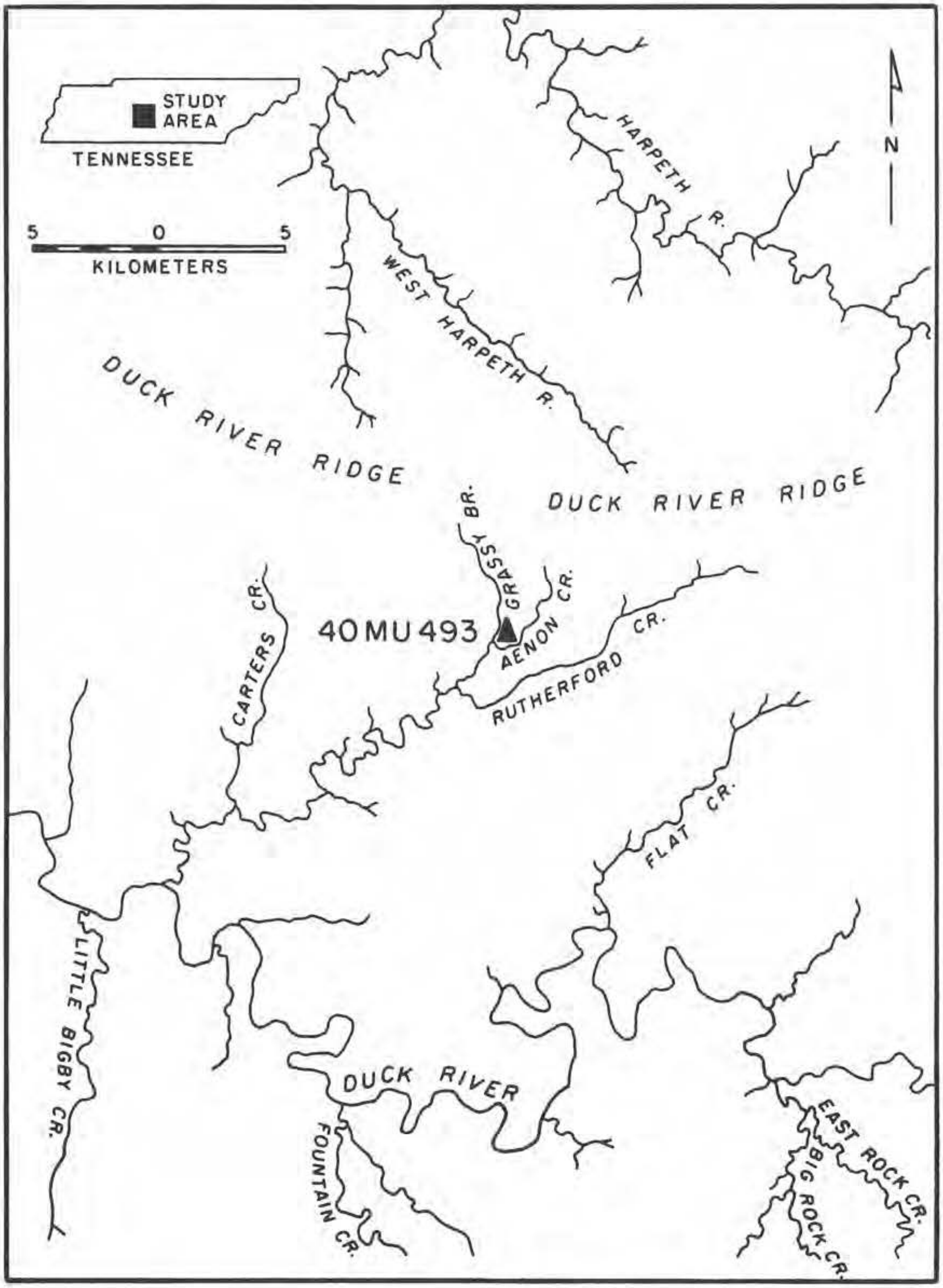

Figure 1. Aenon Creek Site Location.

Figure 2. Aenon Creek and Grassy Branch Stream Bed. Looking West on Aenon Creek (Top) and North on Grassy Branch (Bottom).

were the result of Middle Woodland occupations. Additional habitations occurred during Late Archaic times and a single historic feature dates to the mid-nineteenth century.

The general archaeological knowledge of Middle Tennessee during the Late Archaic through Late Woodland periods has been organized into a tentative framework of settlement, subsistence, and chronological systems. Until the middle to late 1960s, only limited professional research had been conducted in the area. Investigations carried out in association with the Columbia, Tims Ford, and Normandy reservoirs (Bentz 1986a; Faulkner ed. 1968; Faulkner and McCollough 1973, 1974; Faulkner and McCollough ed. 1977, 1978, 1982a, 1982b), research funded by grants from the National Science Foundation (Cobb and Faulkner 1978; Kline et al. 1982), and projects undertaken for the Tennessee Department of Transportation (Bentz ed. 1986, 1988) have revealed information concerning prehistoric lifeways in Middle Tennessee during the Late Archaic through Late Woodland periods. The archaeological investigation of the Aenon Creek site adds to our understanding of prehistoric lifeways and the changes that took place.

CHAPTER I

ENVIRONMENTAL SETTING

Audrey Grubb Entorf, Michael W. Morris,
and Charles Bentz, Jr.

PHYSIOGRAPHY

Five major physiographic provinces occur in the state of Tennessee (Figure 3). From east to west these are: 1) Blue Ridge, 2) Ridge and Valley, 3) Appalachian Plateaus, 4) Interior Low Plateau, and 5) Coastal Plain (Fenneman 1938; Shimer 1972). The Interior Low Plateau is composed of the Nashville Basin and the surrounding area of relatively greater relief known as the Highland Rim. The Basin is an eroded structural dome that has developed into a depression through the widening of stream valleys (Fenneman 1938:431-434). The northern half of the Nashville Basin is drained to the northwest by the Cumberland River and its tributaries, the Stones and Harpeth rivers, while the southern half is drained to the west and south by the Duck and Elk rivers, respectively (DeSelm 1959:67).

The Nashville Basin has been divided into inner and outer portions based on physiographic, geologic, floristic, and historic variability (Figure 4). The Inner Nashville Basin is composed of Lower and Middle Ordovician limestones of the Stones River and Nashville groups (Milici and Smith 1969). Topographically the Inner Basin is rolling and hilly with isolated hills as outliers of the Outer Basin. Elevation ranges between 155-203 m AMSL (Theis 1936; True et al. 1968; Wilson 1949).

The Outer Nashville Basin is underlain by erosion resistant Upper Ordovician limestones of the Maysville and Nashville groups. These Upper Ordovician limestones are extremely phosphatic and silica enriched. Topographically the deeply dissected Outer Basin consists of steep slopes between narrow rolling ridge tops and narrow valley floors, as well as smoother undulating to hilly sections adjacent to the Inner Basin. Rising some 50-100 m above the Inner Basin, the elevation of the Outer Basin ranges between 213-274 m AMSL (Theis 1936; Wilson 1949).

The Highland Rim is a level-bedded cherty Mississippian Plateau with Chattanooga black shale exposed on steep slopes. Some 24,087 km^2 of Alabama, Kentucky, and Tennessee are covered by this section of the Interior Low Plateau Province which surrounds the Nashville Basin. The elevation of the Highland Rim ranges from 289-335 m AMSL in the east and north to 259-304 m AMSL in the south and west. Spurs or ridges extend from the broader flat undissected parts of the Highland Rim into the Outer Nashville Basin (Theis 1936; True et al. 1968; Wilson 1949).

The Aenon Creek site is located in the Inner Nashville Basin (Theis 1936). The site occupies alluvial landforms on the north bank of Aenon Creek about 3 km

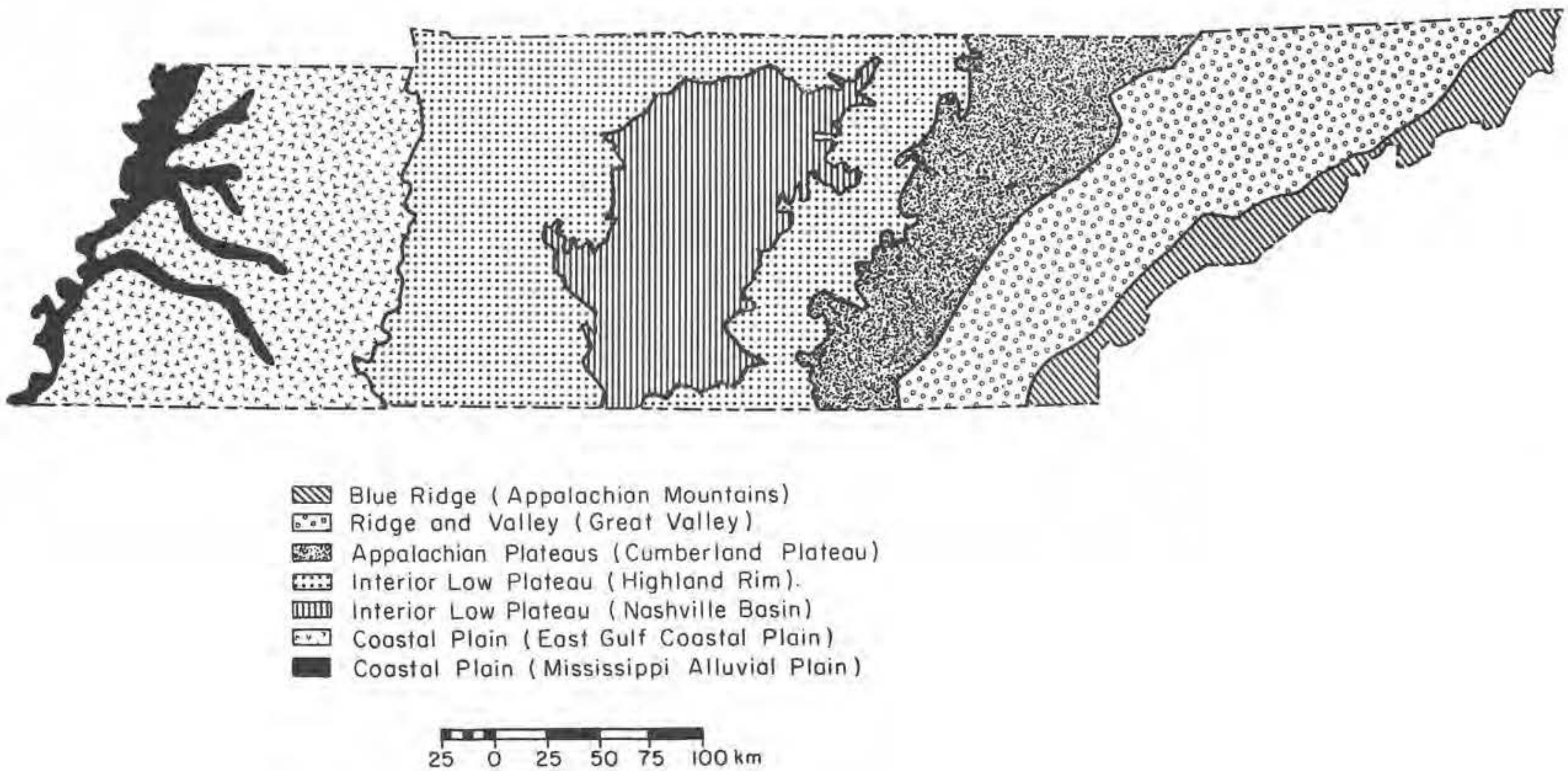

Figure 3. Physiographic Provinces of Tennessee.

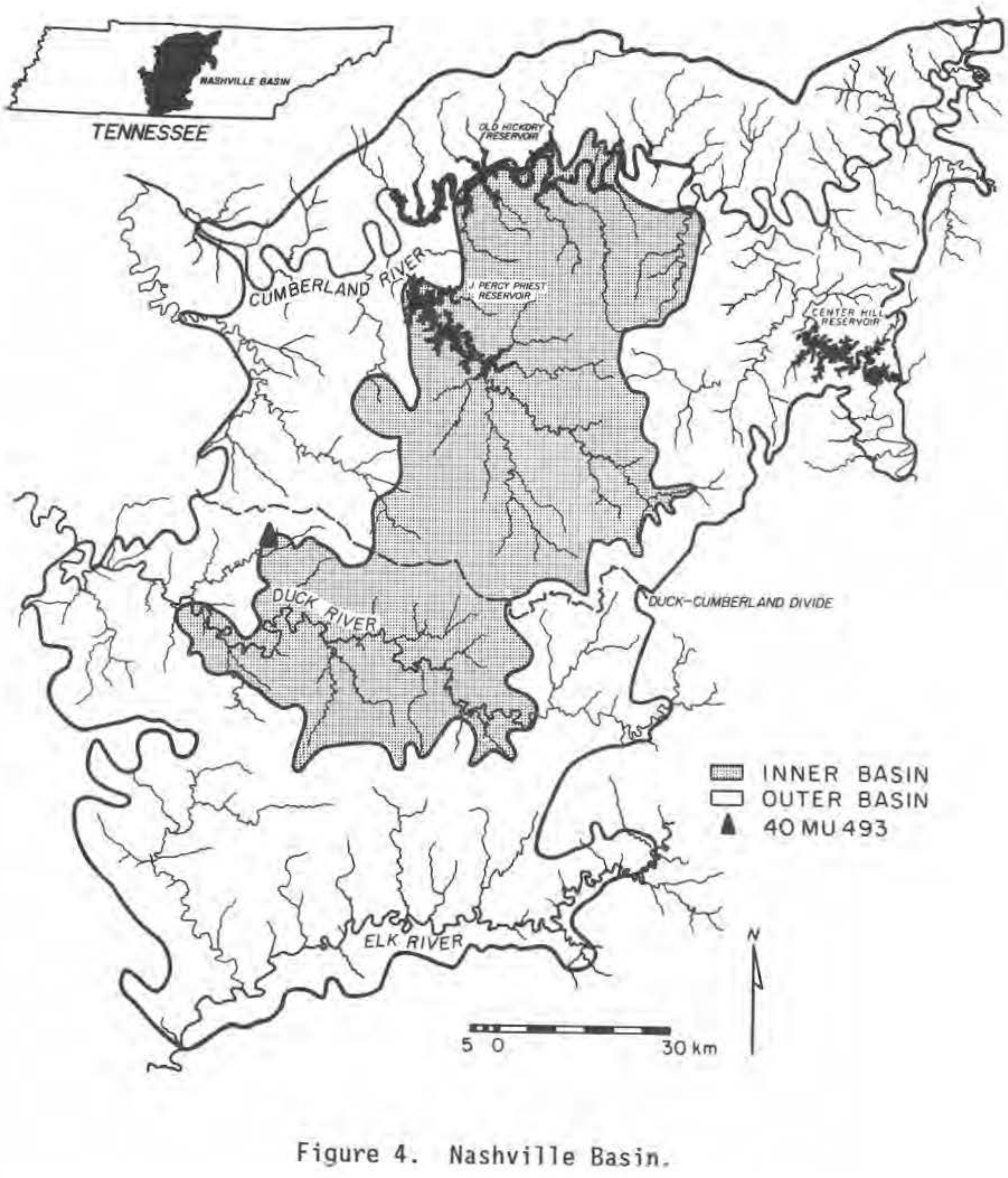

Figure 4. Nashville Basin.

upstream from the confluence of Aenon Creek and Rutherford Creek and an additional 32 km upstream from the confluence of Rutherford Creek and the Duck River. The site is situated on a Pleistocene terrace which rests on Ordovician Carters limestone. The valley floors of Aenon Creek and Grassy Branch are comprised of Ordovician Lebanon limestone. Isolated hills and narrow ridges of the Outer Nashville Basin Ordovician Bigby-Cannon and Hermitage limestones occur within 3 km of the Aenon Creek site.

GEOLOGIC HISTORY

The Nashville Basin and Highland Rim are erosional remnants of Paleozoic sedimentation. The Nashville Basin is part of the pre-Cambrian structural dome of the Cincinnati Arch sometimes referred to as the Nashville Dome. The Nashville Dome is part of a gentle anticline that was structurally high but is now topographically low (Wilson 1949). The present area of the Nashville Basin (15,300 km^2) is believed to be the original area of the Dome (Miller 1974). The Cumberland Plateau section of the Appalachian Plateaus Physiographic Province, located to the east of the Interior Low Plateau, represents a series of deltaic sedimentary deposits of Pennsylvanian sandstones and shales. The Cumberland Plateau was formed by progradation of fluvial sediments which originated in the Appalachians and were deposited into the large shallow inland sea that is now the Interior Low Plateau. The Cumberland Plateau represents a geoform that once surrounded and covered the Dome (Miller 1974).

Throughout the Paleozoic and Mesozoic eras the Nashville Basin underwent cycles of sedimentation, submergence, uplift, and erosion. These processes eventually weathered the formation until the Pennsylvanian sandstone cap and the cherty Mississippian cap were breached exposing the less resistant Ordovician and Devonian limestones (Luther 1977). The curved and weakened surface of the Dome encouraged its truncation as streams developed in the weakened substrate and the landform succumbed to erosional forces. The Paleozoic formations surrounding the Basin were most resistant and weathered differentially leaving landforms such as the Pennsylvanian Cumberland Plateau and the Mississippian Highland Rim topographically higher than the Basin (Miller 1974). The gradual retreat of the Cumberland Plateau escarpment exposed a somewhat resistant Mississippian Plateau of cherty substrate. This broad landform known as the Highland Rim is the largest section of the Interior Low Plateau Province. At its contact with the Nashville Basin, the Highland Rim exposes an irregular escarpment of Mississippian limestones and Devonian shales.

It has been suggested that forces forming the Basin took less than 10 million years and the major drainages of the Basin including the Elk, Duck, Cumberland, and Harpeth rivers continue to follow along stress points in the substrate (Miller 1974). These rivers generally follow an east to west drainage originating in the Highland Rim to the east and flowing toward the Tennessee River Valley in the west. These drainages were instigated by tectonic upwarping during Late Pliocene-Early Pleistocene times. The Nashville Basin and Highland Rim experienced a great amount of truncation due to the down-cutting of these drainages. The rivers continued to down-cut until contact was made with some more resistant Ordovician limestones of the

Carters, Lebanon, and Ridley formations, primarily found in the Inner Nashville Basin. During Late Pleistocene times the rivers ceased down-cutting and the river valleys began to fill with alluvial sedimentation from the meandering river regimes. This process has left distinct alluvial terraces and floodplains along the valley floors.

The down-cutting of rivers across the Highland Rim and Nashville Basin has exposed several geologic formations, some of distinct economic importance to prehistoric peoples. The Ridley Limestone formation is exposed by Flat Creek in the Inner Nashville Basin approximately 7 km southeast of the Aenon Creek site. This Early Ordovician formation consists of massive dense fine-grained limestone that often contains nodules and masses of chert (Theis 1936:79, Wilson 1949:35-37). The Ridley Formation occurs in the central portion of the Inner Nashville Basin approximately 7 km southeast of the site.

The lowest formation exposed by Aenon Creek and Grassy Branch at the site is the Lebanon Limestone. This Early Ordovician formation consists of thin-bedded compact dense very fine-grained limestone with thin shale partings. It weathers to bare rock faces referred to as glades when exposed on the ground surface (Theis 1936:79; Wilson 1949:39-44). There is no chert of economic value in this formation; however, it may have been a limestone source for heating and cooking by the site inhabitants.

Overlying the Lebanon Formation is the Carters Limestone Formation of Early Ordovician age. This formation consists of thin-bedded white to gray limestone containing lenses of chert (Theis 1936:77-78; Wilson 1949:50-53, 59). Carters chert was intensively utilized by the prehistoric occupants of the Aenon Creek site. The Carters Formation chert was eroding out of the hills around the site and was also available in the stream beds as river gravels and cobbles.

Overlying the Carters Formation is the Hermitage Limestone Formation of Middle Ordovician age. This formation consists of thin-bedded limestone and contains a distinctive rock referred to as "siltstone" (Theis 1936:77; Wilson 1949:88). Chert is absent in the formation but the siltstone would have been available to the site inhabitants as a source material for abrading stones. The Hermitage Formation occurs in the Outer Nashville Basin to the north, south, and west approximately 2-4 km from the site.

Overlying the Hermitage Formation is the Bigby-Cannon Limestone Formation of Middle Ordovician age. This formation consists of gray phosphatic semioolitic laminated or cross-bedded limestone and contains abundant porous yellow chert and dense compact white to light-bluish chert (Smith and Whitlatch 1940:21-22; Theis 1936:74-76; Wilson 1949:115, 120, 122). Bigby-Cannon chert was utilized by the prehistoric occupants of the Aenon Creek site. The Bigby-Cannon Formation occurs in the Outer Nashville Basin approximately 7 km downstream from the site on Rutherford Creek.

Overlying the Bigby-Cannon Formation is the Catheys-Leipers Formation. This formation consists of irregularly bedded and cross-bedded calcarenite and calcirudite fossiliferous limestones of Ordovician age (Theis 1936:74; Wilson 1949:146-151).

There is no cryptocrystalline chert in this formation. The Catheys-Leipers Formation occurs in the slopes and crests of hills in the Outer Nashville Basin to the north, south, and west approximately 5-10 km from the site.

Overlying the Catheys-Leipers Formation are the Mannie Shale and Fernvale Limestone formations of Late Ordovician age. These formations consist of massive coarse-grained limestone and brown and green argillaceous shale (Theis 1936:73; Wilson 1949:212, 215-217). The Mannie and Fernvale formations occur in creek valley slopes along the boundary of the Western Highland Rim and Outer Nashville Basin approximately 16 km west of the site.

Sporadically overlying the Mannie and Fernvale formations is the Brassfield Formation of Silurian age. This formation consists of thin outcrops of fine- to coarse-grained light gray limestone containing lenses, beds, and small nodules of light-gray to black mottled chert (Theis 1936:73; Wilson 1949:240). Brassfield chert was utilized by the prehistoric occupants of the Aenon Creek site. The Brassfield Formation occurs in creek valley slopes along the boundary of the Western Highland Rim and Outer Nashville Basin approximately 16 km west of the site.

Overlying the Late Ordovician and Silurian formations is the Chattanooga Shale of Late Devonian-Early Mississippian age. This is a fissile black thinly bedded shale (Theis 1936:67-68). Although no shale tools were recovered from the Aenon Creek site, shale was a raw material utilized by the inhabitants. The Chattanooga Shale occurs in isolated knobs capped by the Mississippian Fort Payne Formation approximately 13 km south of the site.

Overlying the Chattanooga Shale is the Fort Payne Formation of Mississippian age. Fort Payne cherty rocks are responsible for the knobs that have been isolated by erosion in the Nashville Basin, as well as the steep break between the Highland Rim and the Basin (Theis 1936). Bassler (1932:155) has described the Fort Payne Formation of the Nashville Basin as a massive argillaceous limestone which weathers into a solid brittle blocky chert and siliceous shale. This formation contains beds and nodules of dense cryptocrystalline chert. This chert was of great economic value to the prehistoric occupants of the Aenon Creek site. Fort Payne and Carters cherts were the predominant lithic raw materials used for tool manufacture. The Fort Payne chert could have been procured from outcrops but it was probably collected in the form of river gravels and cobbles along the stream banks of the drainages in the area. This formation also contains quartz geodes (Chowns and Elkins 1974; Marcher 1962). "...the origin and distribution of quartz geodes is generally restricted to the lower margins of the Highland Rim. Alluvial gravels constitute a minor source of this material throughout Middle Tennessee" (Amick 1984:58). The Fort Payne Formation may have been an important source of quartz for knapping hammers. The Fort Payne Formation occurs in isolated knobs in the Outer Nashville Basin to the north, south, and west and the Highland Rim to the west approximately 6-16 km from the site.

St. Louis-Warsaw Limestone, also of the Mississippian System, is the uppermost formation capping the Highland Rim. This formation generally consists of a fine-grained to compact gray limestone containing nodules of chert (Lusk 1935; Theis

1936:61-63). These chert nodules are somewhat smaller in size in comparison to the Fort Payne Formation chert. However, this chert is very dense and fine-grained which makes it an optimal raw material for lithic tools. Tools and debitage of this chert type were found on the Aenon Creek site. The raw material could have been procured from upland exposures in the Highland Rim or within gravel beds of the drainages in the area. Quartz geodes are also present in the Warsaw Formation. The St. Louis-Warsaw Formation occurs in the Highland Rim approximately 30 km northwest of the site.

The Inner Nashville Basin location of the Aenon Creek site would have provided the prehistoric inhabitants with ready access to the many different lithic resources of the Nashville Basin and Highland Rim. Eleven formations containing limestone, chert, shale, and siltstone occur within 30 km of the site and 10 of the formations are within 16 km. Lithic raw material procurement was optimal in this area and the geologic situation likely enhanced the archaeological site location.

SOILS

The soils of the Interior Low Plateau Physiographic Province are very diverse. The floodplains of the Inner and Outer Nashville Basin are mostly derived from Quaternary age alluvium. The Armour-Pickwick-Lynnville and Armour-Lynnville-Arrington associations predominate on these landforms which are agriculturally rich and productive (Edwards et al. 1974). The Outer Basin floodplains are very fertile due to their phosphatic nature. They are extremely fertile where they overlie the Hermitage, Bigby-Cannon, and Catheys-Leipers formations and are considered some of the richest soils in Tennessee. The Inner Basin floodplains, however, are only moderately high in phosphorus and are less productive than the Outer Basin floodplains (Edwards et al. 1974). The uplands of the Inner Basin are generally droughty with a shallowly developed root zone. Parent material is derived from limestones of the Carters, Lebanon, and Ridley formations. These limestones are composed of about 90% calcium carbonate which produces soils of low fertility and poor development. Common soils occurring in the uplands of the Inner Basin include those of the Talbott, Pembroke, and Bradyville series (Edwards et al. 1974). The upland soils of the Outer Basin are thinly developed on steep slopes and have a high chert content. The Dellrose-Bodine-Mimosa Association predominates on the high ridge tops. Dellrose soils occur on long steep-sided slopes, Bodine soils are found on wooded hill tops, and Mimosa soils occupy the foot slopes of steep hills. Narrow bands of Armour soil occur on stream terraces and at the base of slopes in the Outer Basin within this soil association.

Soils of the Highland Rim are primarily cherty, acidic, and highly leached. The Bodine-Mountview-Fullerton Association predominates in the Highland Rim (True et al. 1968).

The soil association represented at the Aenon Creek site is the Armour-Lynnville-Arrington Association. This soil association extends up Rutherford Creek Drainage from the Duck River across the Outer Basin and into the Inner Basin before terminating at the site. The Talbott-Rock outcrop soil association occurs in the adjacent uplands.

The site occupies a Pleistocene age terrace mapped as the Armour series which is taxonomically Ultic Hapludalfs (fine-silty, mixed, and thermic). The Armour soils occupy the low benches and gentle footslopes above the floodplains of the rivers of the Nashville Basin. They are generally deep, well drained, and permeable. The chief parent material is alluvium but silty areas in the upper layers may be alluvium mixed with loess. There is usually an increasing phosphorus content with depth indicating that the parent material may have been alluvium from phosphatic limestone.

FLORA AND FAUNA

The Nashville Basin is located in the southern half of the Western Mesophytic Forest region. The principal trees in the early historic forest of the Basin were ash, poplar, black walnut, hickory, beech, maple, elm, and red cedar (Braun 1950:132, Crites and Clebsch 1986:169; Quarterman 1950:3). Poplar, black walnut, hickory, maple, and elm once grew up to 2 m in diameter. Buckeye, hackberry, Kentucky coffee-tree, and sweet gum were also abundant. Cedar glades occur in 5-6% of the Nashville Basin. The glades are found in those areas of the Inner Basin with thin soil and exposed Ordovician Lebanon limestone (Quarterman 1950:1, 8)(Figure 5). Cedar glades contain open to dense stands of red cedar and scattered deciduous trees (Braun 1950:131). Patches of xerophytic plants, including species of grasses, yucca, and prickly pear cactus, are locally common with the red cedar and are most conspicuous in the summer (Braun 1950:132; Hofman 1984a:13). Glade areas, up to 0.8 km across, occur within 400 m of the Aenon Creek site above the alluvial landforms of the creek.

An abundant and diverse fauna characterized the Duck River Drainage of the Nashville Basin during early historic times. Mammals included opossum, black bear, raccoon, weasel, mink, otter, skunk, wolf, fox, mountain lion, bobcat, woodchuck, squirrel, beaver, muskrat, porcupine, rabbit, elk, and white-tailed deer. Birds included loon, grebe, cormorant, heron, goose, mallard, turkey, and passenger pigeon. Reptiles and amphibians included turtle, snake, hellbender, toad, and frog. Fishes included gar, pickerel, chub, shiner, sucker, catfish, bass, sunfish, darter, drum, and eel. Mussels and aquatic snails were also available in the Duck River and its tributaries (Robison 1986:367-387).

Figure 5. Cedar Glades and Vegetation on Exposed Lebanon Limestone in the Glades. Cedar Glades (Top) and Exposed Lebanon Limestone (Bottom).

CHAPTER II

FIELD AND LABORATORY METHODS

Charles Bentz, Jr.

Field procedures at the site first involved establishing a mapping grid. A contour map of the site was then constructed. A controlled surface collection was conducted across the entire site area. Four 1 m x 1 m hand units were excavated along a grid north-south line to determine the depth of the plowzone and the nature of the subsoil. A backhoe was employed in removing the plowzone from nine 2 m wide transects. These power units were excavated in order to locate and determine the distribution of subsurface features found immediately beneath the plowzone. Dark stains in the subsoil thought to be prehistoric disturbances were flagged and subsequently trowel scraped for definition. The limits of the potential pits and postholes were marked on the ground, mapped in plan view, and excavated. The backhoe was then utilized in removing the plowzone from four 8 m wide strips between five transects in order to form a 52 m x 42 m block excavation around the concentration of features situated above the 205 m contour interval on the site. All of the excavated pit fill was waterscreened or floated. Laboratory procedures included the processing of flotation samples, separation of the cultural and noncultural materials comprising the waterscreened and floated residues, and the sorting of cultural material from all contexts (trowel sorted, waterscreened, and floated) into several categories.

MAPPING

The centerline of the proposed Saturn Parkway was marked in the field by Tennessee Department of Transportation (TDOT) personnel prior to the Phase II archaeological investigations. The Aenon Creek site, as positioned on TDOT project maps, extends from approximately the Parkway centerline to Aenon Creek and from centerline stations 223+50 to 227+50 (Figure 6). A datum point (1000 N, 1000 E) was placed in the northeast quadrant of the site at the 226+50 centerline station. A TDOT absolute elevation point at Grassy Branch near the centerline was used to determine the datum point elevation. A grid east-west baseline was positioned along the centerline. Grid north corresponds to magnetic north because the centerline was oriented perpendicular to magnetic north from centerline stations 217+00 to 240+00. A grid was expanded from the baseline and eight hubs were set across the site area. These hubs were employed in constructing a contour map and establishing a controlled surface collection grid, hand excavation and power units, and mapping lines in the power units. Metal spikes were set at 8 m intervals along north-south mapping lines and 10 m intervals along east-west mapping lines in the power units. Small nails were set at 2 m intervals along these mapping lines and additional mapping lines were set along the 2 m intervals between the metal spikes. The pits and postholes were then plan mapped in the 1:20 scale.

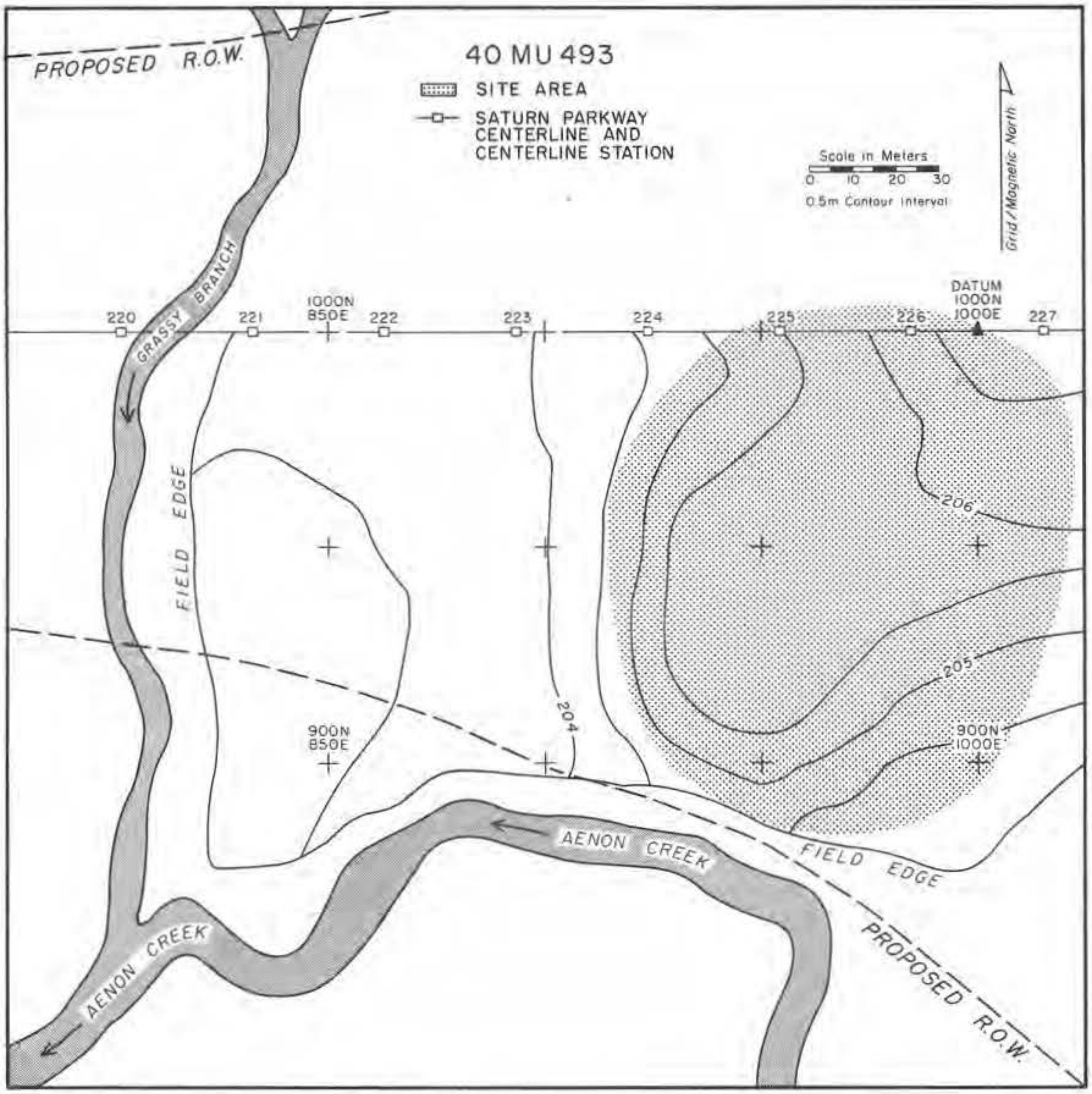

Figure 6. Aenon Creek Site Area and Saturn Parkway Right-of-Way.

CONTROLLED SURFACE COLLECTION

A tractor with disk harrow was employed to expose a fresh plowzone surface on the site. Wooden laths were set at 10 m intervals along north-south and east-west lines to form 10 m x 10 m collection squares (Figure 7). The controlled surface collection was initiated after sufficient rains and "puddling" of the ground surface. Each 10 m x 10 m square was divided into north, south, east, and west sections by extending diagonal string lines across the square from the corners. Each collection square section consisted of a triangular area measuring 10 m in length at the base and 5 m in height or 25 m^2. The four sections were collected individually and the material from each was bagged separately (Figure 8). Five minutes was spent recovering cultural material from each collection square section. The four bags of material from each collection square were labeled with the section designation (north, south, east, and west) and coordinates of the southwest corner of the square and placed in a larger bag labeled with the square coordinates. A total of 116 10 m x 10 m squares was collected. Twelve collection square sections obscured by vegetation on the south and west edges of the site were not investigated.

EXCAVATION UNITS

Approximately 29% of the site area was selected for study during the test excavations and data recovery. Four hand excavated 1 m x 1 m units were placed along the 950 E line at 20 m intervals from 920 N-980 N. The east walls of the hand units were positioned on the 950 E line (Figure 9). The units were dug in 10 cm arbitrary levels from the ground surface and all excavated soil was dry screened through 6.4 mm (1/4 inch) mesh hardware cloth. The plowzone was 23-29 cm deep and consisted of a brown-dark brown to dark yellowish-brown fine granular silt loam (Figure 10). The underlying subsoil was comprised of a strong brown to yellowish-brown or reddish-yellow to brownish-yellow silty clay loam. Prehistoric and historic features were lacking in the hand excavated test units.

Machine transects were then established along a grid north-south alignment. Nine 2 m wide transects were spaced 10 m apart and varied in length from 80-222 m (Figures 11 and 12). The lengths of the excavation transects were determined by the surface distribution of cultural material and the topography of the site area. The transects were not extended beyond the limits of the site or further downslope once limestone bedrock was found immediately beneath the plowzone. Bedrock generally occurred beneath the plowzone on the slopes of the Pleistocene terrace below the 204.5 m contour interval. Twenty-five possible pit features and 10 possible postholes were found in 1,742 m^2 of subsoil surface exposed in the nine machine transects and expansions from the transects. Twenty-one of the potential pit features were found upon excavation to be of prehistoric cultural origin while 4 of the potential pit features and the 10 potential postholes were tree or rodent disturbances.

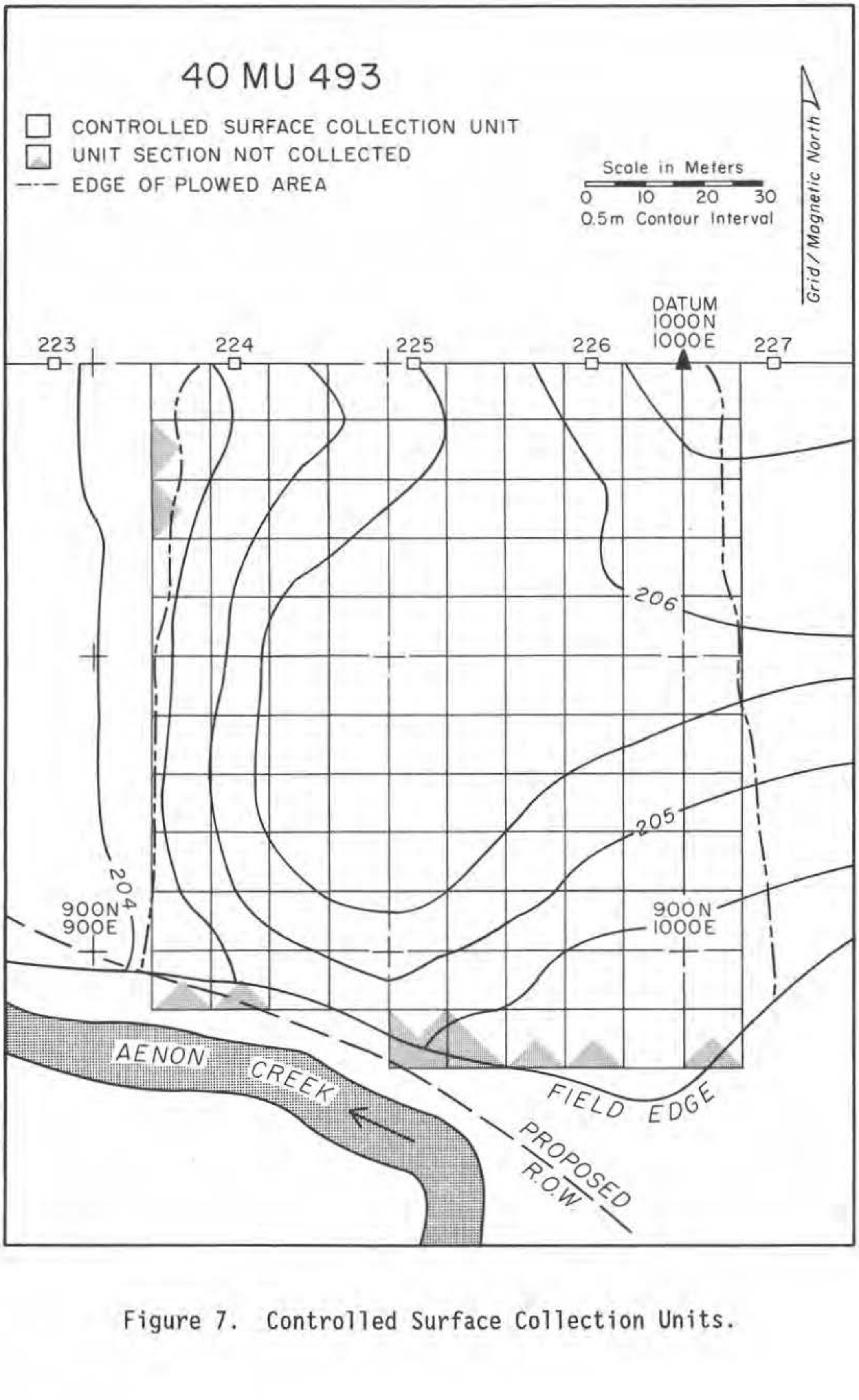

Figure 7. Controlled Surface Collection Units.

Figure 8. Conducting Controlled Surface Collection. Looking South.

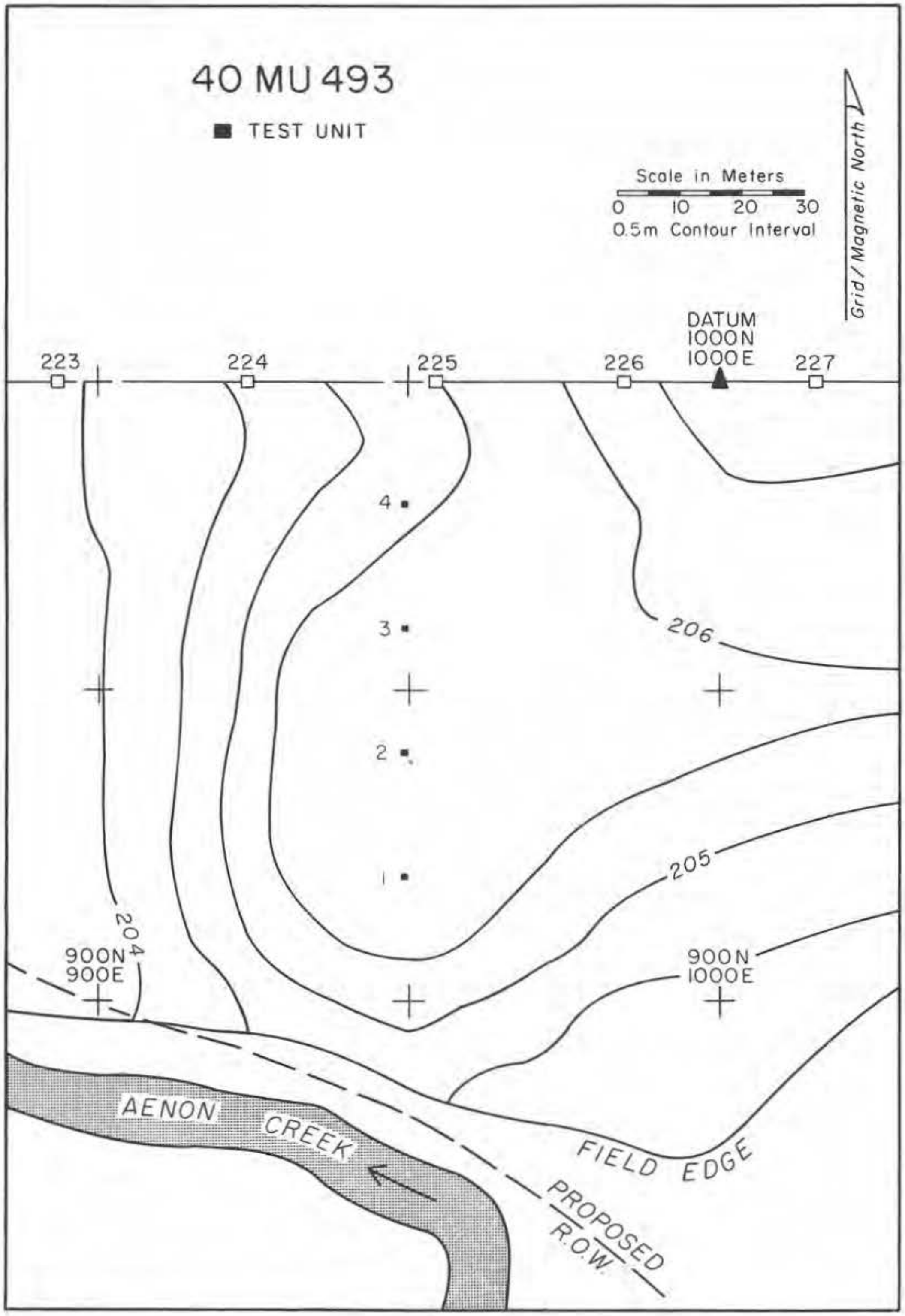

Figure 9. Test Units.

Figure 10. Test Unit Profiles. Looking East.

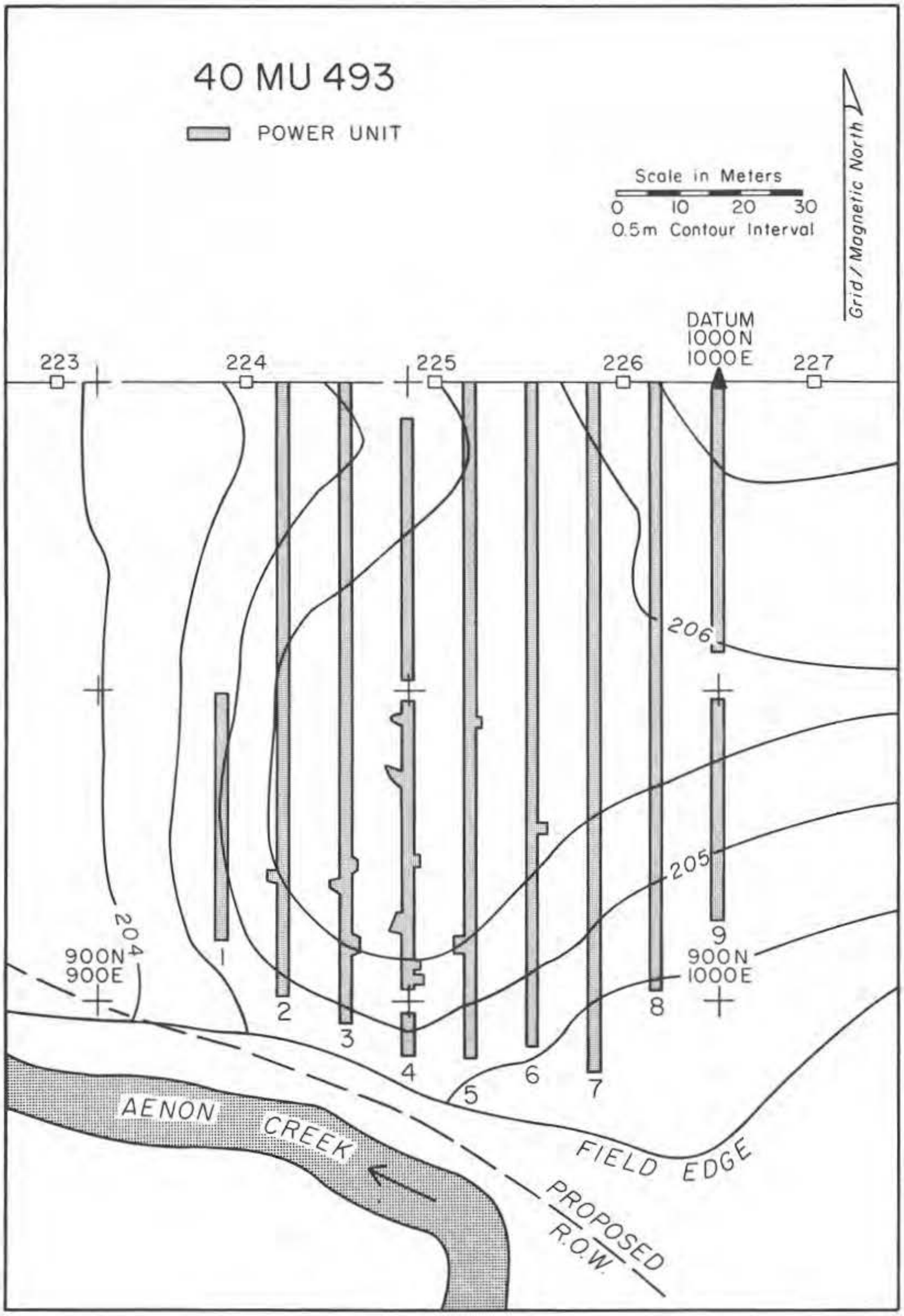

Figure 11. Transect Power Units.

Figure 12. Machine Removal of Plowzone in Transect Power Units and Completed Transect Power Units. Looking Northeast (Top) and South (Bottom).

Four 8 m wide strips of plowzone between portions of five machine transects were removed to form a block measuring approximately 52 m x 42 m (Figures 13-15). The block excavation contained the features found during the test excavations. The 8 m wide strips varied in length from 48-54 m. A single pit feature (Feature 23) was located 1.5 m north of the block in a machine transect. While the site area delimited by the surface distribution of cultural material encompassed 1.2 ha, the subsurface features occurred in a 0.2 ha area situated in the south central part of the site between the 205 m and 206 m contour intervals. Forty-nine possible pit features and 75 possible postholes were found in 1,600 m^2 of subsoil surface exposed in the four 8 m wide strips. Thirty-six of the potential pit features and 4 of the potential postholes were found upon excavation to be of prehistoric or historic cultural origin while 13 of the potential pit features and 71 of the potential postholes were tree or rodent disturbances.

FEATURES

Pits

The pits were excavated in halves and by natural strata. One-half of each pit was excavated to define the size, shape, and any variation (zones) within the fill. The exposed profile wall was mapped in the 1:10 scale and photographed. The remaining half of each pit was excavated and all relevant data recorded. During excavation the fill was measured with buckets calibrated in liters to determine the total volume of each pit. Samples of fill for flotation (10 liters) were collected from arbitrary 10 cm levels established in one-half of each pit and the remaining fill was waterscreened. The fills from selected pits or zones within certain pits were entirely floated. Samples of pit fill were retained for flotation to maximize the recovery of floral and faunal material.

Postholes

The postholes were cross-sectioned with a shovel and trowel. The profile was viewed with approximately 10 cm of subsoil bordering the posthole fill. Dimensions and elevations of the postholes along with a sketch of each profile were recorded. The posthole fill was not waterscreened or retained for flotation.

WATERSCREENING, FLOTATION, AND SORTING

A primary objective of the excavations at the Aenon Creek site was to maximize the recovery of floral and faunal material in order to reconstruct the subsistence patterns of the prehistoric and historic site inhabitants. All of the soil removed from pits was subjected to waterscreening and flotation. Posthole fill was not processed because of the excavation procedures pursued in the investigation of these features.

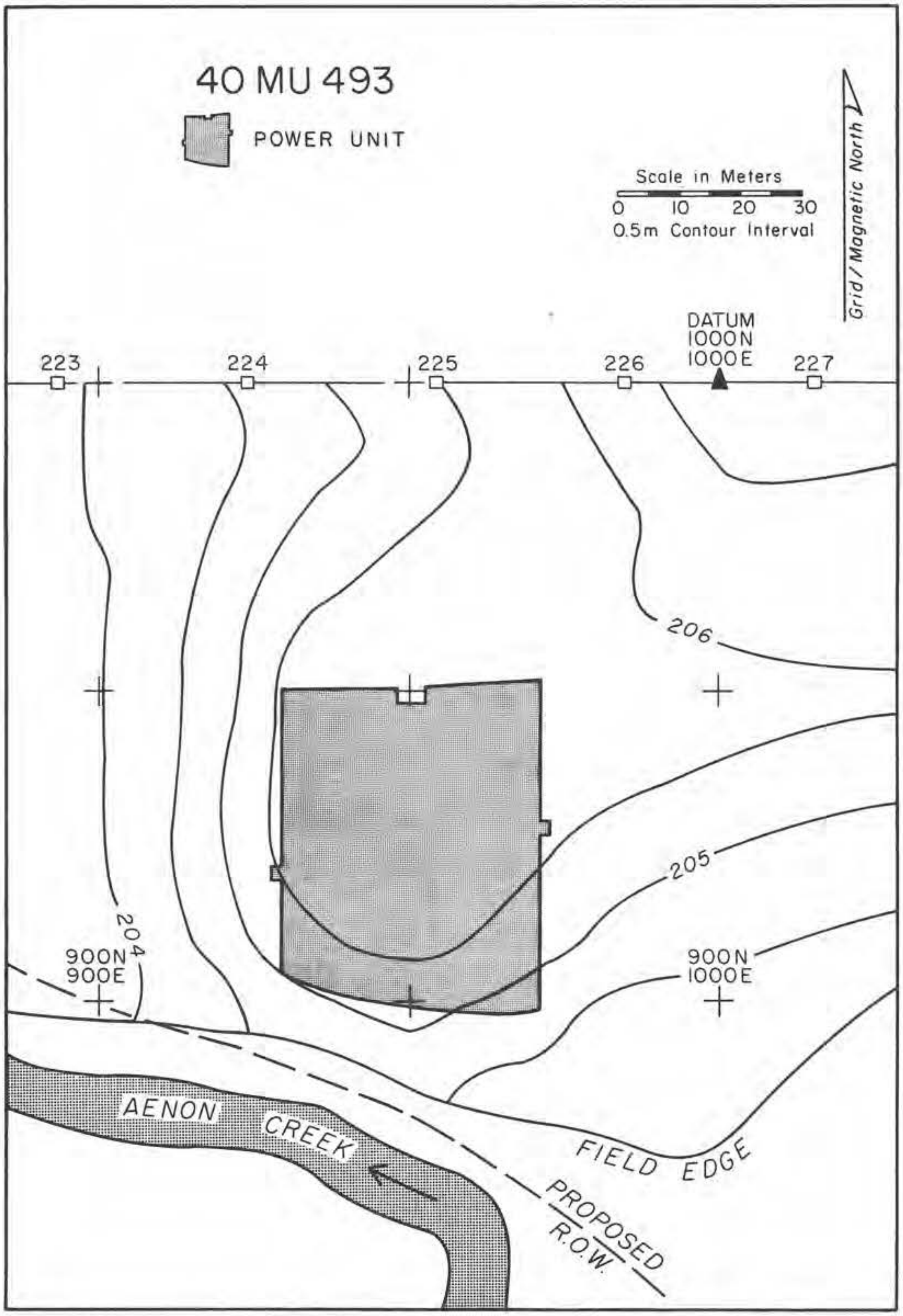

Figure 13. Block Power Unit.

Figure 14. Machine Removal of Plowzone in Block Power Unit and Troweling Features in Block Power Unit. Looking South (Top) and Southeast (Bottom).

Figure 15. Aerial View of Block Power Unit. North to Bottom of Photograph.

The waterscreened fill (9,592 liters) was processed through a system consisting of paired upper and lower screen boxes. The upper box was lined with 6.4 mm (1/4 inch) hardware cloth and the lower box was lined with 1.6 mm (1/16 inch) hardware cloth. Water was pumped to the apparatus from Aenon Creek to separate the soil from the residue. The 6.4 mm and 1.6 mm residues were recovered, dried, and stored for later analysis. The waterscreening of feature fill resulted in the accumulation of 85.6 kg of 6.4 mm residue and 331.1 kg of 1.6 mm residue.

The samples of fill collected for flotation (1,781 liters) were processed through a system consisting of two nested metal drums that were filled with water. Agitation and filling of the apparatus was provided through a hose fitted to the bottom of the outer drum. The inner drum had a screened bottom (1.6 mm mesh) through which soil passed during the flotation process. Material was either retained in the bottom of the inner drum (heavy fraction) or floated upward in the water and passed out of the drum through a sluice attached to the rim, where it was collected in a 250 mm (Number 60) geologic sieve (light fraction). The fractions were recovered, dried, and stored for later analysis. The heavy fraction residue was then separated into 6.4 mm (1/4 inch) and 1.6 mm (1/16 inch) size grades using nested screens. The flotation of feature fill resulted in the accumulation of 17.5 kg of 6.4 mm heavy fraction residue and 48.6 kg of 1.6 mm heavy fraction residue.

The 6.4 mm waterscreened and floated residues were completely sorted. The cultural material was divided into several categories (i.e., ceramics, lithic tools, chert, limestone, sandstone, shale, limonite/hematite, galena, bone, shell, plant remains, and a number of historic material categories) and the noncultural gravel was weighed and discarded. A total of 71.7 kg of noncultural gravel larger than 6.4 mm was thrown away. The sorted cultural material from the 6.4 mm waterscreened fractions was analyzed with the trowel sorted material. The 1.6 mm waterscreened and floated residues were sampled for analysis. Ten minutes was spent separating floral and faunal material from each kilogram of residue. The light fraction residue recovered from flotation samples was utilized in the paleoethnobotanical analysis.

The field and laboratory methods employed in the archaeological investigation of the Aenon Creek site were an effective means for maximizing the data recovery. The use of heavy machinery for plowzone removal was a practical strategy for studying large areas of the site in a short period of time. The intensive use of waterscreening allowed the rapid excavation of pits without the loss of significant information. The recovery of floral and faunal material through waterscreening and flotation aids in reconstructing the subsistence patterns of the past site inhabitants.

CHAPTER III

FEATURES

Charles Bentz, Jr.

A total of 57 pits and 1 structure was revealed in the power units on the Aenon Creek site (Figures 16 and 17). The pits and structure were all excavated during the Phase II testing and Phase III data recovery. An additional 17 excavated and numbered possible pits and 81 excavated possible postholes were found to be recent disturbances.

The pit features and structure were situated above the 205 m contour interval at the southern terminus of a terrace remnant of Aenon Creek. The distribution of features forms an oval measuring 52 m x 42 m (1,701 m^2). An area in the southeast section of the pit distribution is nearly devoid of features. This area measures 36 m x 22 m (657 m^2). An arc of postholes that form a structure and an earth oven are within the open area.

PITS

Size Classification

The variables of depth and maximum diameter were previously used by Schroedl (1986:90-97) to separate storage facilities from other pit types at the Chota-Tanasee site (40MR2) in East Tennessee. Features with a depth:diameter ratio of 0.5 or more were categorized as storage facilities. This numerical expression indicates storage pit depths are at least half as large as the diameters (Schroedl 1986:92). The variables of volume and surface area were previously used by Bentz (1988a:20-47) to separate pits into four classes or sizes at the Bailey site (40GL26) in Middle Tennessee. The pits were divided into size classes by plotting the excavated volume (liters) and surface area (m^2) of each on a graph. The size classes consisted of large deep (Class 1), medium (Class 2), shallow (Class 3), and large shallow (Class 4) pits. A comparison of volume: surface area ratios and depth:diameter ratios indicated the former separated storage facilities from other pits more accurately.

The pits at the Aenon Creek site were separated into size classes employing the Bailey site method of plotting the excavated volume and surface area of each on a graph (Table 1 and Figure 18). The pits were separated into four size classes; however, the previously noted large deep (Class 1) pit size was not represented while an additional size class of large (Class 5) pits was identified. The segregation of these

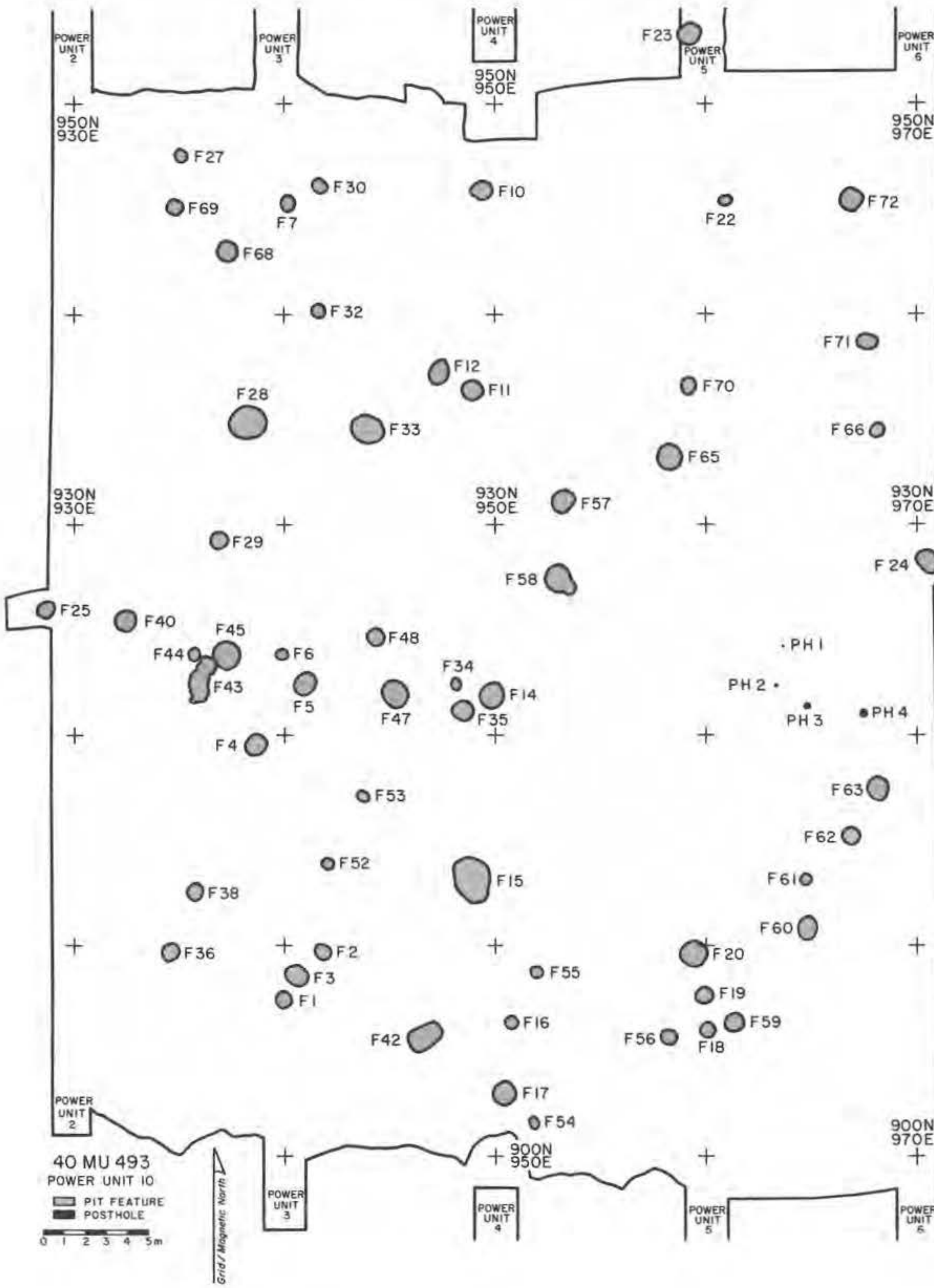

Figure 16. Feature Distribution.

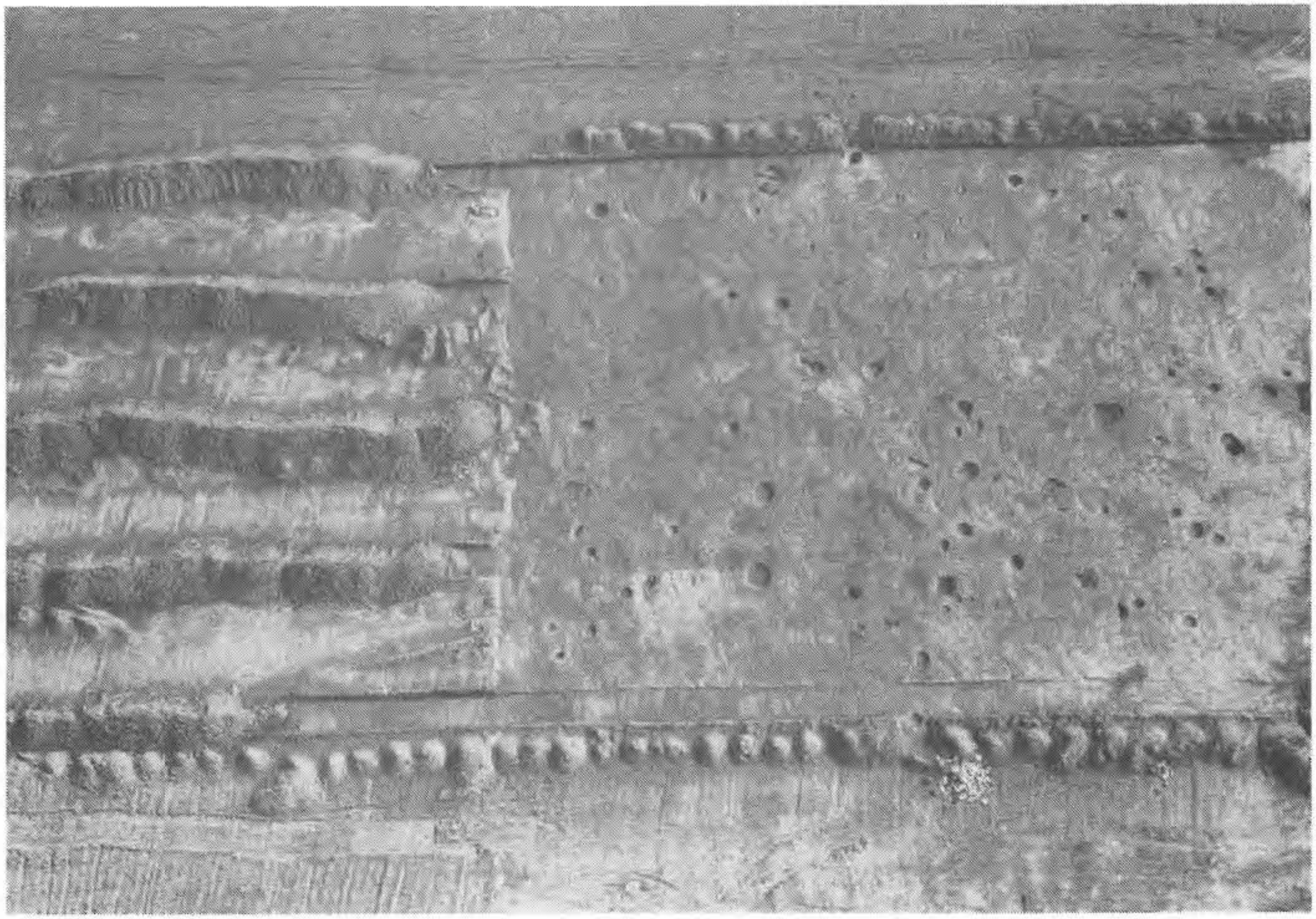

Figure 17. Aerial View of Feature Distribution.
North to Left of Photograph.

Table 1. Pit Feature Attributes.

Feature Number	Length (cm)	Width (cm)	Surface Area (m2)	Depth (cm)	Total Volume (liters)	Waterscreened Volume (liters)	Floated Volume (liters)	Volume (m³): [a] Surface Area (m2) Ratio	Depth (cm): Diameter (cm) Ratio	Plan Shape	Profile[b] Shape	Number of Zones	Function	Cultural Affiliation
								Medium (Class 2) Pits						
11	97	86	0.7	35.0	258	217	41	0.4	0.4	Circular	IAS, FB	2	Indeterminate	Indeterminate
14	123	113	1.1	30.0	415	375	40	0.4	0.2	Circular	IAS, FB	2	Indeterminate	Indeterminate Middle Woodland
17	117	112	1.0	23.0	286	266	20	0.3	0.2	Circular	IAS, FB	1	Indeterminate	Neel Phase
20	128	120	1.2	22.5	271	250	21	0.2	0.2	Circular	BS	1	Indeterminate	Indeterminate
24	125	89	0.9	48.0	484	394	90	0.8	0.4	Oval	IAS, FB	3	Storage	Indeterminate Middle Woodland
29	84	74	0.5	40.0	300	200	100	0.6	0.5	Circular	SES, FB	3	Storage	Neel Phase
33	146	131	1.5	21.0	400	380	20	0.3	0.1	Circular	IOS, FB	1	Indeterminate	Indeterminate
42	170	118	1.3	52.0	733	668	65	0.7	0.5	Oval	IOS, RB	2	Storage	Indeterminate
45	139	129	1.4	39.0	612	562	50	0.4	0.3	Circular	BS	2	Indeterminate	Neel Phase
47	133	124	1.3	32.5	420	310	110	0.3	0.2	Circular	BS	4	Indeterminate	Indeterminate Middle Woodland
58	160	123	1.6	35.0	514	444	70	0.3	0.3	Oval	BS	2	Indeterminate	Indeterminate
63	111	98	0.9	40.0	363	343	20	0.4	0.4	Circular	IOS, FB	1	Indeterminate	Indeterminate Middle Woodland
65	116	114	1.0	35.0	262	232	30	0.3	0.3	Circular	IAS, RB	1	Indeterminate	Indeterminate
72	111	110	1.0	29.0	375	315	60	0.4	0.3	Circular	IOS, FB	2	Indeterminate	Indeterminate Middle Woodland
n=14														
Range	84 - 170	86 - 131	0.5-1.6	21.0-52.0	258 - 733	200 - 668	20-110	0.2-0.7	0.1-0.5					
Mean	125.7	110.1	1.1	34.4	406.6	354.0	52.6	0.4	0.3					
SD	22.3	16.5	0.3	8.8	135.4	128.8	29.8	0.1	0.1					
								Shallow (Class 3) Pits						
1	85	76	0.5	12.0	61	45	16	0.1	0.1	Circular	IOS, FB	1	Indeterminate	Indeterminate
2	105	95	0.8	20.0	63	43	20	0.1	0.2	Circular	BS	1	Indeterminate	Indeterminate
3	112	91	0.8	21.5	134	114	20	0.2	0.2	Circular	BS	1	Indeterminate	Indeterminate Middle Woodland
4	105	96	0.8	25.0	217	177	40	0.3	0.2	Circular	IAS, FB	2	Indeterminate	Indeterminate
5	112	107	0.9	21.0	197	177	20	0.2	0.2	Circular	BS	1	Indeterminate	Ledbetter Phase
6	57	52	0.2	24.0	75	55	20	0.3	0.4	Circular	BS	1	Indeterminate	Indeterminate
7	73	63	0.4	21.0	81	51	30	0.2	0.3	Circular	IAS, IOS, FB	1	Indeterminate	Neel Phase
10	102	93	0.7	19.0	180	150	30	0.4	0.2	Circular	BS	1	Indeterminate	Indeterminate Middle Woodland
12	120	80	0.8	13.0	81	62	19	0.1	0.1	Oval	IOS, FB	2	Indeterminate	Indeterminate Middle Woodland
16	62	61	0.3	20.0	85	65	20	0.3	0.3	Circular	IAS, FB	1	Indeterminate	Indeterminate
18	73	73	0.4	18.0	91	71	20	0.2	0.3	Circular	IAS, IOS, FB	1	Indeterminate	Indeterminate
19	83	80	0.5	9.0	40	30	10	0.1	0.1	Circular	IAS, FB	1	Indeterminate	Indeterminate
22	64	48	0.2	16.0	30	16	14	0.1	0.3	Oval	BS	1	Indeterminate	Indeterminate

Table 1. (continued).

Feature Number	Length (cm)	Width (cm)	Surface Area (m2)	Depth (cm)	Total Volume (liters)	Waterscreened Volume (liters)	Floated Volume (liters)	Volume (m^3):[a] Surface Area (m2) Ratio	Depth (cm): Diameter (cm) Ratio	Plan Shape	Profile[b] Shape	Number of Zones	Function	Cultural Affiliation
							Shallow (Class 3) Pits							
23	111	104	0.9	17.0	151	131	20	0.2	0.2	Circular	BS	1	Indeterminate	Indeterminate
25	83	81	0.5	15.0	104	84	20	0.2	0.2	Circular	BS	1	Indeterminate	Middle Woodland Indeterminate
27	61	51	0.2	10.5	30	20	10	0.1	0.2	Circular	BS	1	Indeterminate	Indeterminate
30	73	67	0.4	23.0	110	75	20	0.3	0.3	Circular	IOS, VS, FB	1	Indeterminate	Indeterminate
32	59	59	0.3	11.0	54	44	10	0.2	0.2	Circular	IAS, FB	1	Indeterminate	Middle Woodland Neel Phase/ McFarland Phase
34	56	40	0.2	12.5	20	10	10	0.1	0.2	Oval	BS	1	Indeterminate	Indeterminate
35	99	94	0.7	15.0	135	120	15	0.2	0.2	Circular	IOS, FB	2	Indeterminate	Indeterminate
36	81	80	0.5	16.0	89	69	20	0.2	0.2	Circular	BS	1	Indeterminate	Indeterminate
38	78	71	0.4	22.0	101	81	20	0.2	0.3	Circular	IAS, FB	1	Indeterminate	Indeterminate
40	105	93	0.8	19.0	169	139	30	0.2	0.2	Circular	BS	2	Indeterminate	Ledbetter Phase
43	214	91	1.5	13.0	159	134	25	0.1	0.1	Rectangular	IOS, FB	3	Indeterminate	Historic
44	57	54	0.2	16.0	42	32	10	0.2	0.3	Circular	BS	1	Indeterminate	Neel Phase
48	86	80	0.5	28.0	170	150	20	0.3	0.3	Circular	BS	1	Indeterminate	Indeterminate
52	56	50	0.2	14.0	35	25	10	0.2	0.3	Circular	BS	1	Indeterminate	Indeterminate
53	50	50	0.2	15.0	34	0	34	0.2	0.3	Circular	BS	1	Cremation Receptacle	Middle Woodland Neel Phase
54	50	42	0.2	23.5	58	36	22	0.3	0.5	Circular	IOS, RB		Indeterminate	Neel Phase/ McFarland Phase
55	54	52	0.2	29.0	91	61	30	0.4	0.6	Circular	IOS, VS, FB	1	Indeterminate	Indeterminate
56	79	71	0.4	29.5	130	100	30	0.3	0.4	Circular	IAS, FB	1	Indeterminate	Middle Woodland Indeterminate
57	111	101	0.9	21.0	200	180	20	0.2	0.2	Circular	IAS, FB	1	Indeterminate	Neel Phase/ McFarland Phase
59	94	89	0.7	11.0	107	97	10	0.2	0.1	Circular	BS	1	Indeterminate	Indeterminate
60	110	89	0.8	21.0	183	163	20	0.2	0.2	Circular	IOS, FB	1	Indeterminate	Indeterminate
61	54	51	0.2	21.0	57	37	20	0.3	0.4	Circular	IAS, FB	1	Indeterminate	Middle Woodland Indeterminate
62	82	74	0.5	11.0	53	43	10	0.1	0.1	Circular	IOS, FB	1	Indeterminate	Middle Woodland Indeterminate
66	65	55	0.3	15.0	27	0	27	0.1	0.2	Circular	BS	3	Hearth	Indeterminate
68	93	91	0.7	16.5	120	100	20	0.2	0.2	Circular	BS	1	Indeterminate	Indeterminate
69	75	71	0.4	14.0	75	60	15	0.2	0.2	Circular	IOS, FB	1	Indeterminate	Indeterminate
70	79	65	0.4	38.0	155	126	29	0.4	0.5	Circular	IAS, IOS, RB	1	Indeterminate	Middle Woodland Indeterminate
71	95	67	0.5	10.5	110	100	10	0.2	0.1	Oval	IOS, FB	1	Indeterminate	Indeterminate
n=41														
Range	50-214	40-107	0.2-1.5	9 - 38	20 - 217	10 - 177	10 - 40	0.1-0.4	0.1-0.6					
Mean	84.5	73.2	0.5	18.2	100.1	79.8	19.9	0.2	0.3					
SD	28.9	18.4	0.3	6.1	54.0	50.9	7.4	0.1	0.1					

Table 1. (continued).

Feature Number	Length (cm)	Width (cm)	Surface Area (m2)	Depth (cm)	Total Volume (liters)	Waterscreened Volume (liters)	Floated Volume (liters)	Volume (m^3):[a] Surface Area (m2) Ratio	Depth (cm): Diameter (cm) Ratio	Plan Shape	Profile[b] Shape	Number of Zones	Function	Cultural Affiliation
Large Shallow (Class 4) Pit														
28	172	151	2.0	15.0	482	462	20	0.2	0.1	Circular	IOS, FB	1	Indeterminate	Indeterminate
Large (Class 5) Pit														
15	218	176	3.0	35.0	1,021	901	120	0.3	0.2	Oval	IAS, IOS, FB	3	Earth Oven	Neel Phase/ McFarland Phase

[a] 1 liter=0.001 m^3.

[b] VS-Vertical sides; BS-Basin-shape; IAS-Inslanting sides; IOS-Insloping sides; SES-Slightly expanding sides; FB-Flat bottom; RB-Round bottom.

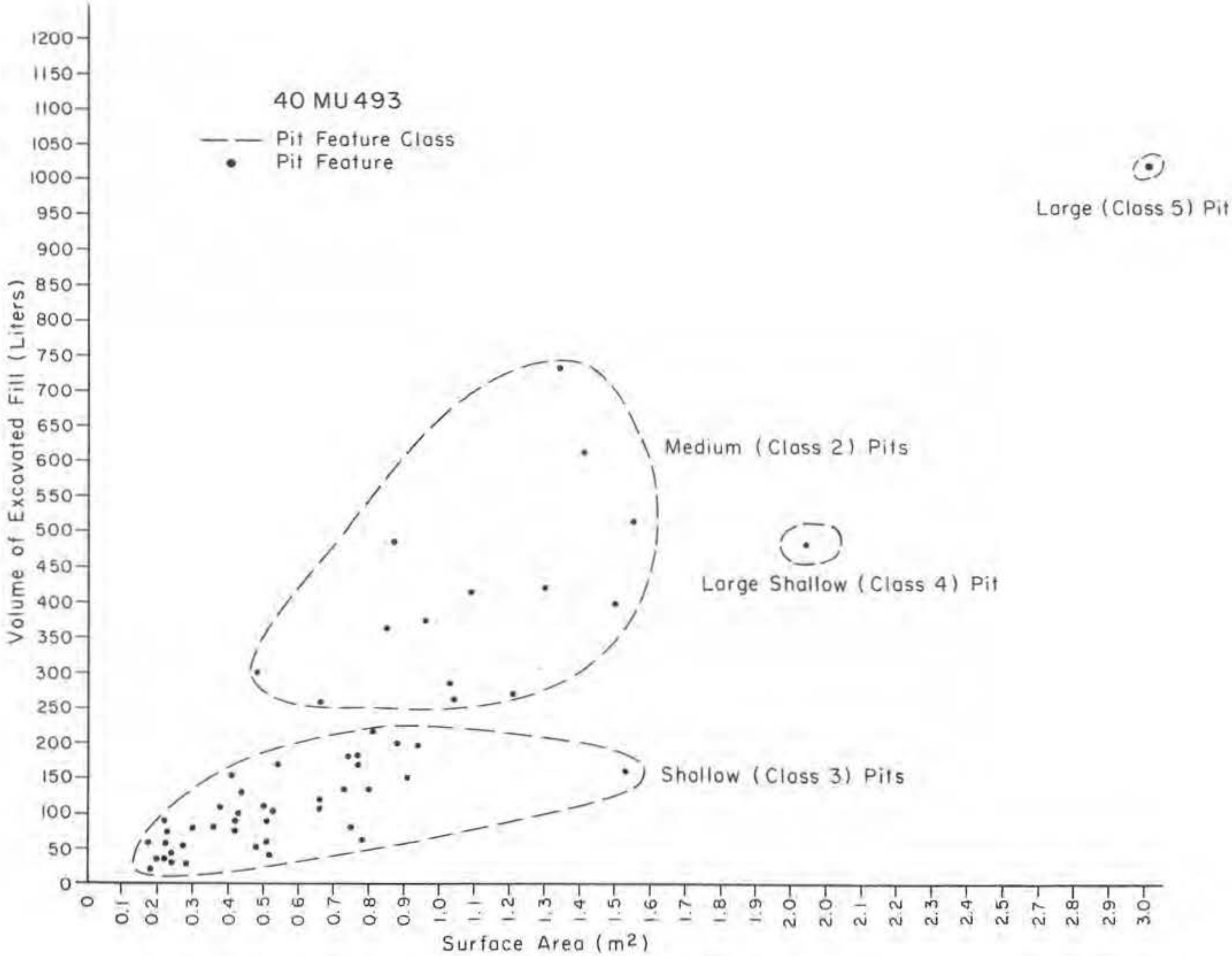

Figure 18. Pit Feature Excavated Volume:Surface Area.

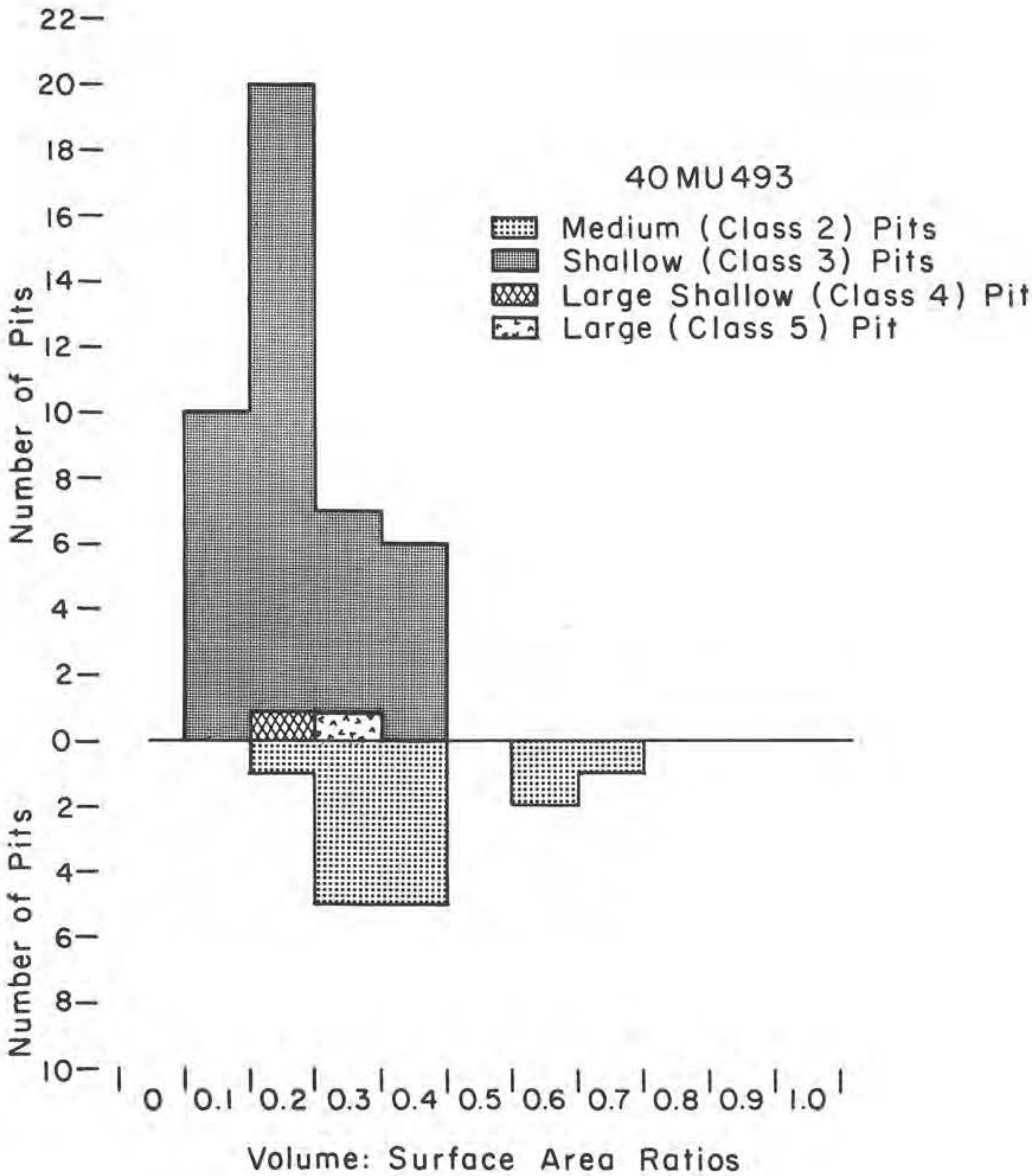

Figure 19. Volume:Surface Area Ratios of Pit Features.

attributes and examination of the pit forms and volume:surface area ratios indicated the medium (Class 2) pits included the storage facilities. The shallow (Class 3) pits included a hearth and a feature containing a redeposited human cremation. The majority of the pit features are of indeterminate function. A histogram plot of the volume:surface area ratios (Figure 19) indicated the shallow (Class 3) pits, large shallow (Class 4) pit, and large (Class 5) pit form a unimodal distribution with a concentration of values at 0.2. The medium (Class 2) pits form a bimodal distribution with values concentrating at 0.3 and 0.4 in one mode and 0.6 in the second mode. The second mode is comprised of the three storage pits on the site.

Large deep (Class 1) pits. The large deep class of pits previously identified on the Late Archaic Bailey site (Bentz 1988a:25, 30, 32) was not represented at the Aenon Creek site.

Medium (Class 2) pits. The medium pits were generally circular in plan view and were basin-shape or had inslanting sides and a flat bottom or insloping sides and a flat bottom in profile (n=14) (Figure 20). The mean dimensions of the Class 2 pits are 126 cm x 110 cm in plan view and 34 cm in depth (Table 1). Nearly two-thirds (n=9) of the medium pits contained multiple fill zones. Representative examples of the Class 2 pits are Features 14, 58, and 72.

Feature 14 was a circular pit with inslanting sides and a flat bottom (Figure 21). It measured 123 cm x 113 cm in plan view and 30 cm in depth. Two zones were defined in the fill and the depositional sequence occurred in the following order:

Zone A2-a 8-15 cm thick layer of dark brown to very dark grayish-brown silt loam mottled with light yellowish-brown silt loam was deposited across the bottom of the pit.

Zone A1-a 15-19 cm thick layer of dark brown to very dark grayish-brown silt loam was deposited over Zone A2.

Feature 14 was located near the center of the pit distribution.

Feature 58 was an oval basin-shape pit with a shallow protrusion extending 32 cm to the southeast (Figure 21). It measured 160 cm x 123 cm in plan view and 35 cm in depth. Excluding the protrusion, the feature would have been circular in plan view and measured 128 cm x 123 cm. Two zones were defined in the fill and the depositional sequence occurred in the following order:

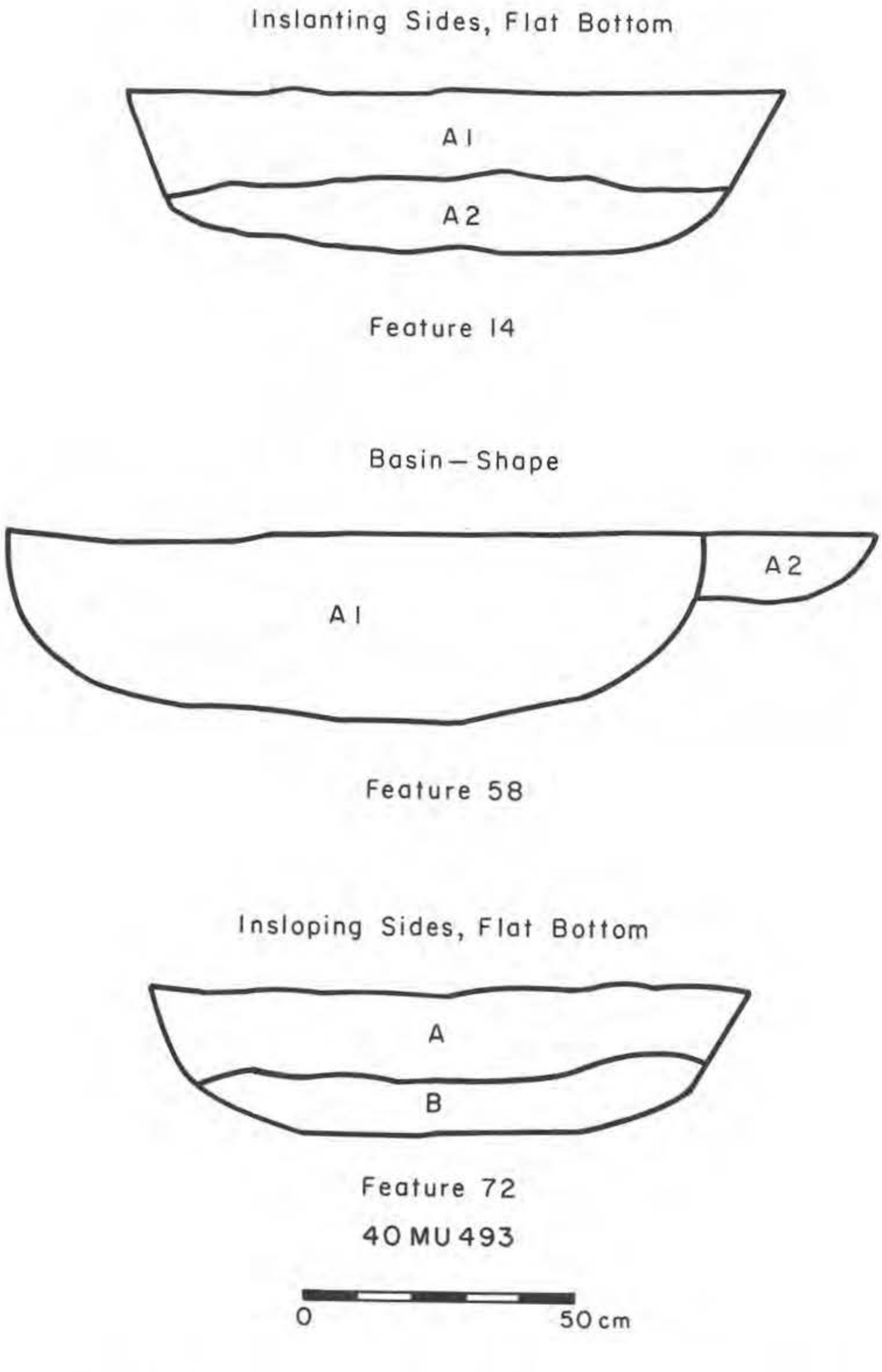

Figure 20. Profiles of Medium (Class 2) Pits.

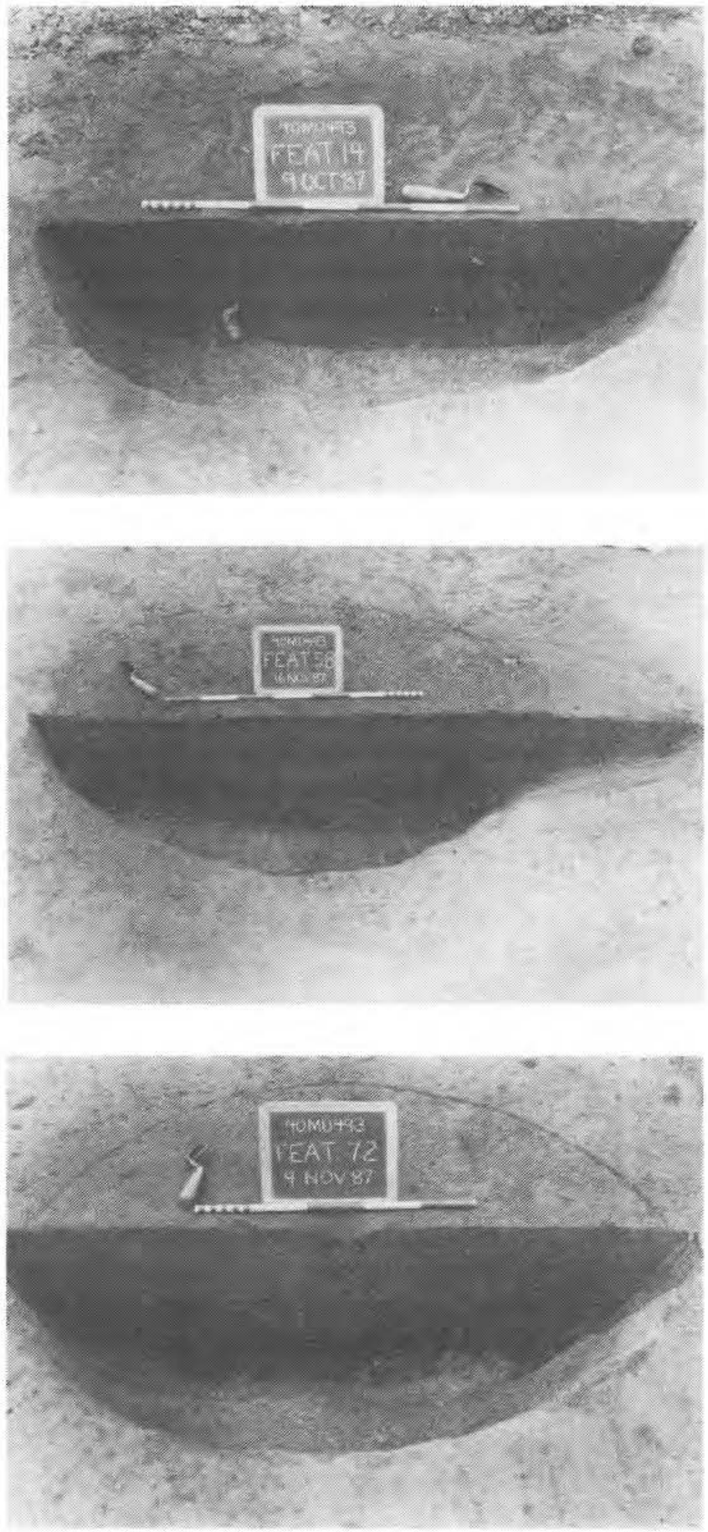

Figure 21. Medium (Class 2) Pits.

Zone A2-a dark yellowish-brown silt loam was deposited in the pit protrusion.

Zone A1-a dark brown silt loam was deposited in the remainder of the pit.

Feature 58 was located near the center of the pit distribution approximately 5 m northeast of Feature 14.

Feature 72 was a circular pit with insloping sides and a flat bottom (Figure 21). It measured 111 cm x 110 cm in plan view and 29 cm in depth. Two major zones were defined in the fill and the depositional sequence occurred in the following order:

Zone B-a 9-12 cm thick layer of dark brown silt loam containing abundant charcoal was deposited across the bottom of the pit.

Zone A-a 15-17 cm thick layer of dark yellowish-brown silt loam was deposited over Zone A.

Feature 72 was located at the northeast extent of the pit distribution.

Eight of the medium (Class 2) pits are attributed to the early Middle Woodland Neel phase and Indeterminate Middle Woodland occupations of the Aenon Creek site. The cultural affiliations of six Class 2 pits are Indeterminate. Three of the medium pit features (F 24, 29, and 42) served as storage facilities.

Shallow (Class 3) pits. The shallow pits were generally circular in plan view and were basin-shape or had inslanting sides and a flat bottom or insloping sides and a flat bottom in profile (n=41)(Figure 22). The mean dimensions of the Class 3 pits are 85 cm x 73 cm in plan view and 18 cm in depth (Table 1). Less than one-fourth (n=6) of the shallow pits contained multiple fill zones. Representative examples of the Class 3 pits are Features 36, 38, and 69.

Feature 36 was a circular basin-shape pit that measured 81 cm x 80 cm in plan view and 16 cm in depth (Figure 23). The fill was a dark brown silt loam. Feature 36 was located at the southwest extent of the pit distribution.

Feature 38 was a circular pit with inslanting sides and a flat bottom (Figure 23). It measured 78 cm x 71 cm in plan view and 22 cm in depth. The fill was a dark brown to brown silt loam. Feature 38 was located at the southwest extent of the pit distribution approximately 3 m north of Feature 36.

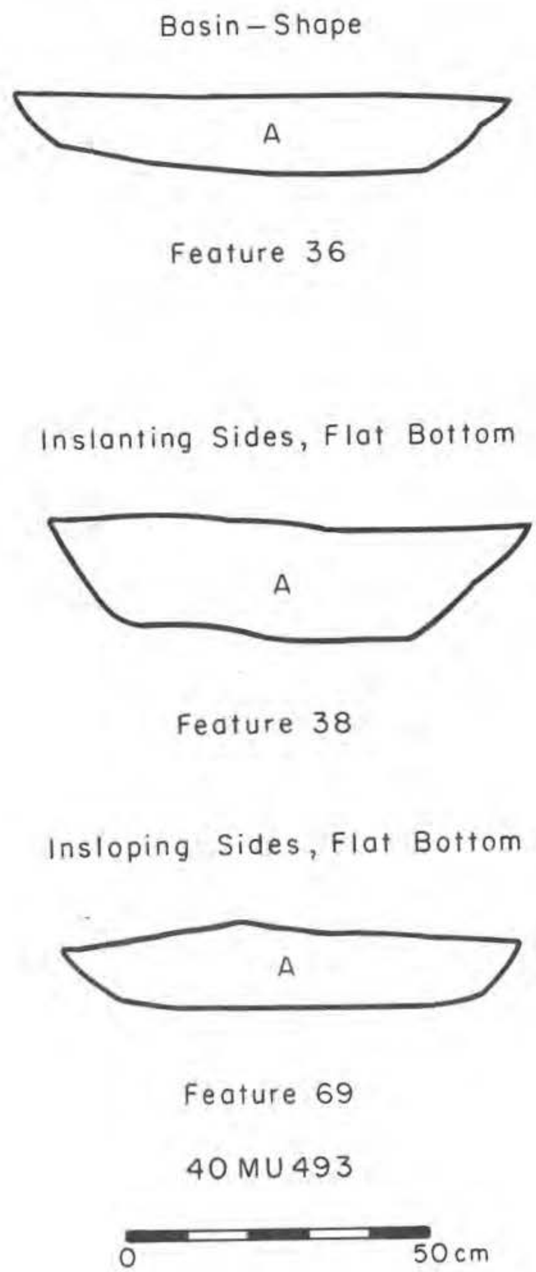

Figure 22. Profiles of Shallow (Class 3) Pits.

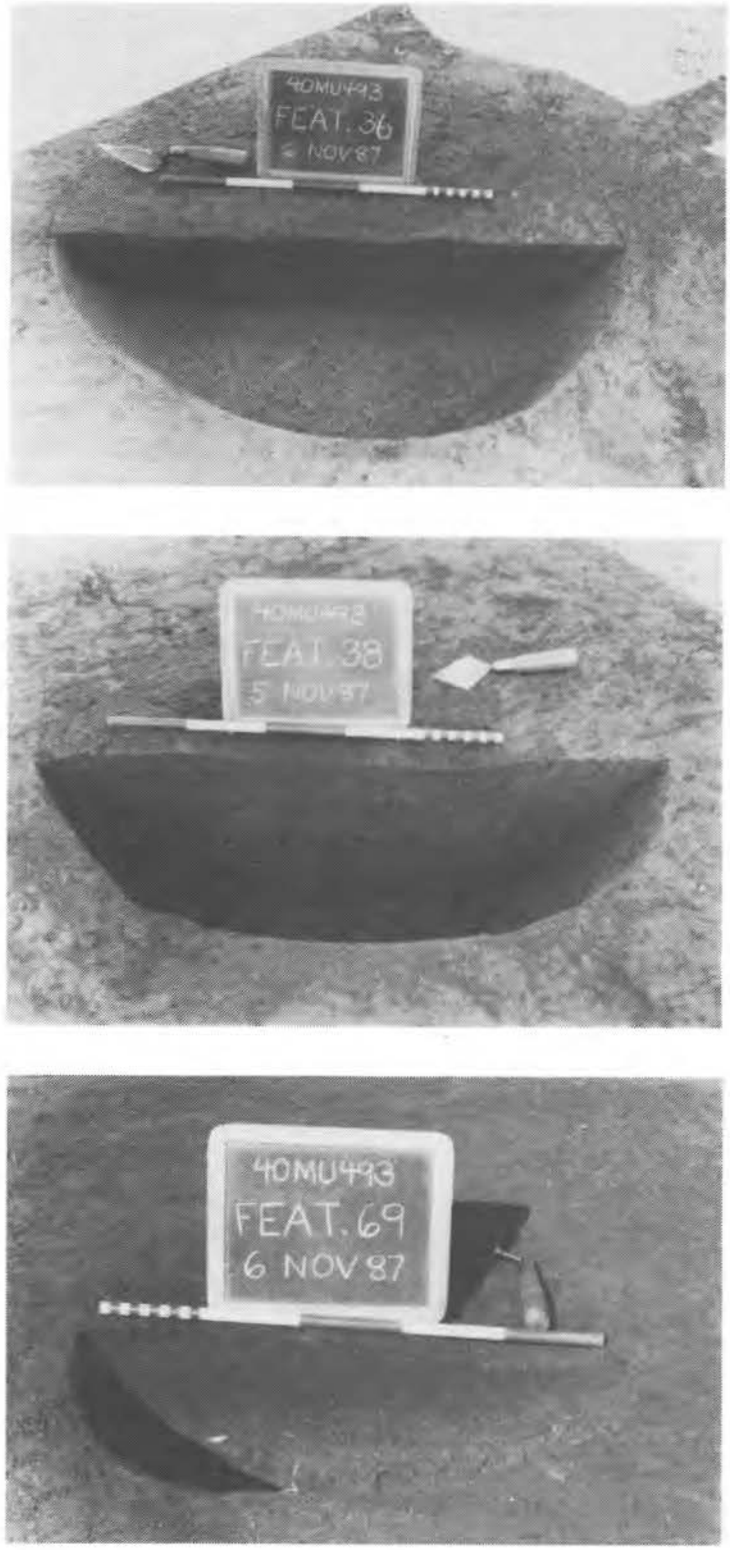

Figure 23. Shallow (Class 3) Pits.

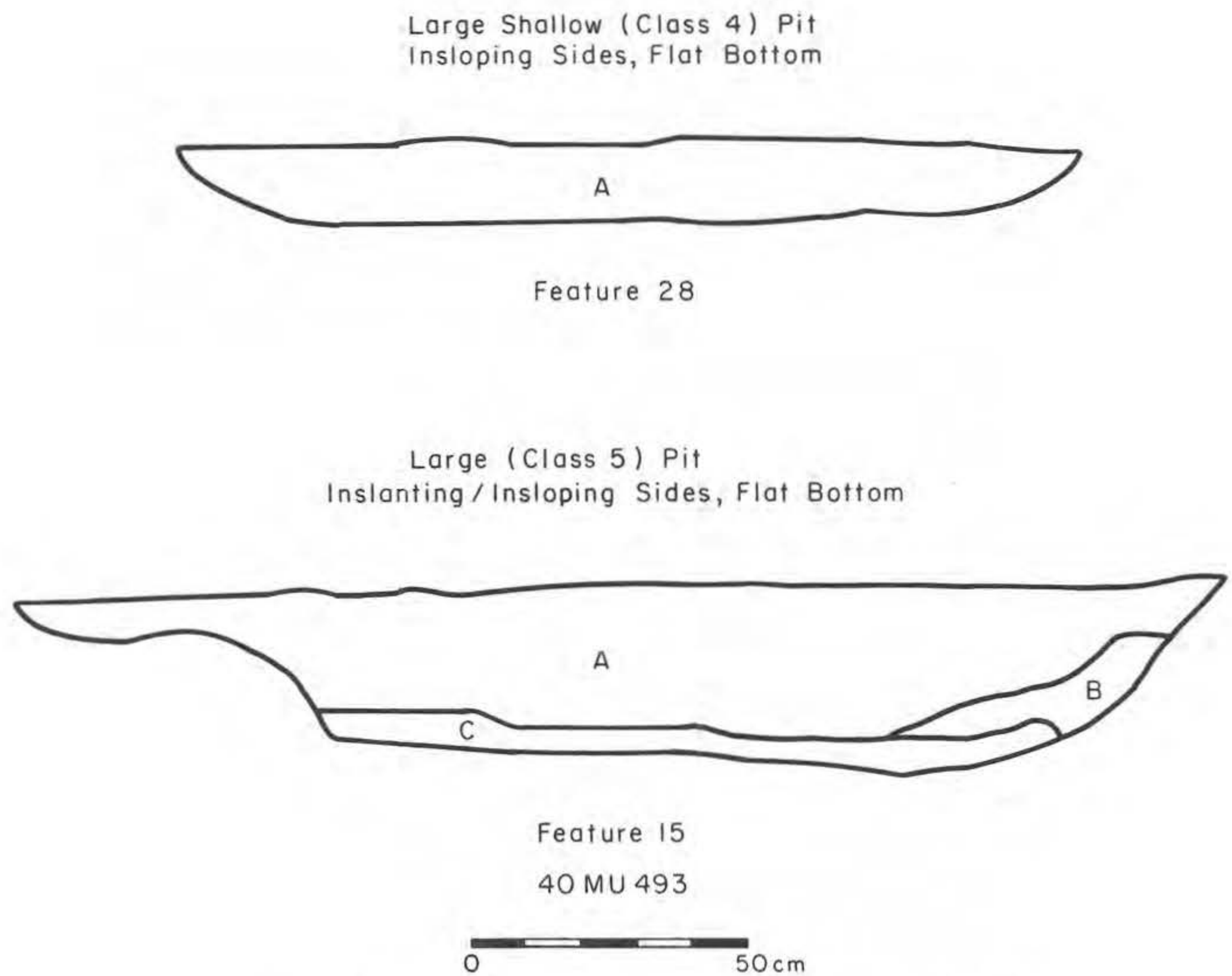

Figure 24. Profiles of Large Shallow (Class 4) and Large (Class 5) Pits.

Figure 25. Large Shallow (Class 4) and Large (Class 5) Pits. Class 4 Pit (Top) and Class 5 Pit (Bottom).

Feature 69 was a circular pit with insloping sides and a flat bottom (Figure 23). It measured 75 cm x 71 cm in plan view and 14 cm in depth. The fill was a dark yellowish-brown silt loam. Feature 69 was located at the northwest extent of the pit distribution.

Sixteen of the shallow (Class 3) pits are attributed to the early Middle Woodland Neel phase, early Middle Woodland Neel phase or McFarland phase, or Indeterminate Middle Woodland occupations of the Aenon Creek site. Two shallow pits are assigned to the Ledbetter phase occupation. One shallow pit is attributed to the historic occupation. The cultural affiliations of 22 Class 3 pits are Indeterminate. One of the shallow pits (F 53) served as a repository for two human cremations.

Large shallow (Class 4) pit. Feature 28, the only large shallow pit, was a circular pit with insloping sides and a flat bottom (Figures 24 and 25). It measured 172 cm x 151 cm in plan view and 15 cm in depth. The fill was a dark brown silt loam. Feature 28 was located in the northwest quadrant of the pit distribution. The cultural affiliation of Feature 28 is Indeterminate.

Large (Class 5) pit. Feature 15, the only large pit, was an oval pit with inslanting and insloping sides and a flat bottom (Figures 24 and 25). Shallow protrusions extended 40 cm to the south and 20 cm to the northwest from the surface of the pit. It measured 218 cm x 176 cm in plan view and 35 cm in depth. Excluding the protrusions, the feature would have been circular in plan view and measured 168 cm x 154 cm. Three zones were defined in the fill and the depositional sequence occurred in the following order:

Zone C-a 4-7 cm thick layer of black organic silt loam containing abundant charcoal and some burned limestone was deposited across the bottom of the pit.

Zone B-a 5-9 cm thick sloping layer of burned red to reddish-brown silt loam was deposited around nearly the entire circumference of the pit wall over Zone C.

Zone A-a dark brown silt loam was deposited in the remainder of the pit.

Feature 15 was located in the center of the southern half of the pit distribution. The cultural affiliation of Feature 15 is early Middle Woodland Neel phase or McFarland phase.

Summary of size classification. The majority of the medium (Class 2) pits either had inslanting to insloping sides and a flat bottom or were basin-shape. The Class 2 pits were approximately 40 cm larger in horizontal dimensions and 15 cm deeper than the shallow (Class 3) pits. The dimensions and forms of three medium pits are indicative of storage facilities while multiple fill zones in many of the pits suggest a secondary use as refuse receptacles. The functions of the remaining medium (Class 2) pits cannot be determined from the shapes, contents, or locations of these features. The medium pits had surface areas of 0.1-0.5 m^2 and volumes over 250 liters. Over one-half (57.1%) of the Class 2 pits are attributed to the Middle Woodland occupations of the Aenon Creek site. The cultural affiliations of the remaining Class 2 pits are Indeterminate.

Most of the shallow (Class 3) pits were either basin-shape or had inslanting to insloping sides and a flat bottom. The shallow pit class includes a hearth, a feature that contained redeposited human cremations, and a historic substructure pit. The functions of the remaining shallow (Class 3) pits cannot be determined from the shapes, contents, or locations of these features. The shallow pits had surface areas of 0.2-1.5 m^2 and volumes under 250 liters. Two (4.9%) of the Class 3 pits are attributed to the Late Archaic Ledbetter phase occupation of the Aenon Creek site and over one-third (39.0%) of the Class 3 pits are attributed to the Middle Woodland occupations. One Class 3 pit is historic. The cultural affiliations of the remaining Class 3 pits are Indeterminate.

The only large shallow (Class 4) pit had insloping sides and a flat bottom. The horizontal dimensions of the Class 4 pit were approximately 40-50 cm larger than the medium (Class 2) pits and the depth was about the same as the shallow (Class 3) pits. The large shallow pit had a surface area of 2.0 m^2 and a volume of nearly 500 liters. The function and cultural affiliation of the Class 4 pit are Indeterminate.

The single large (Class 5) pit had inslanting and insloping sides and a flat bottom. The horizontal dimensions of the Class 5 pit were approximately 65-95 cm larger than the medium (Class 2) pits and the depth was about the same as the Class 2 pits. The multiple fill zones and contents of the Class 5 pit are indicative of an earth oven. The large (Class 5) pit had a surface area of 3.0 m^2 and a volume over 1,000 liters. The large pit is attributed to the early Middle Woodland Neel phase or McFarland phase occupation of the Aenon Creek site.

Function

Storage facilities are large deep (Class 1) and medium (Class 2) pits. Large deep storage pits were lacking at the Aenon Creek site while three medium (Class 2) storage facilities (F 24, 29, and 42) were represented among the Class 2 pits. These features had steeply inslanting to insloping or slightly expanding sides and a flat or round bottom. The mean dimensions of these features are 126 cm x 94 cm in plan view and 47 cm in depth. The storage pits were situated along the west-central (F 29), south-central (F 42), and east-central (F 24) edges of the pit distribution. The cultural affiliation of two storage pits is Middle Woodland and one is Indeterminate.

A hearth is a shallow (Class 3) pit containing a loose granular dark fill. Evidence of *in situ* burning is indicated by the reddened and fired soil on the sides and bottom of the pit or concentrations of burned clay and charcoal in the fill. These features were used in cooking food and to provide light. The hearth (F 66) on the Aenon Creek site was located on the east edge of the pit distribution. The cultural affiliation of Feature 66 is Indeterminate.

An earth oven is generally a shallow (Class 3) pit or less often a large (Class 5) pit containing burned limestone concentrated in a layer at or near the bottom of the pit. Evidence of *in situ* burning is indicated by reddened soil on the pit sides and bottom along with layers of ash and/or charcoal. The presence or absence of *in situ* burning in earth ovens probably reflects the difference between heating blocks of limestone in the pit versus heating limestone in an adjacent area and depositing the hot blocks in a clean pit. Earth ovens functioned as sealed cooking pits for either quickly steaming food or slowly baking it. The large (Class 5) earth oven (F 15) on the Aenon Creek site exhibits evidence of *in situ* burning by a basal layer of charcoal containing some burned limestone and reddened fill around the edges of the pit. The reddened fill probably resulted from erosion of the burned feature walls after abandonment of the pit. The small amount of burned limestone in Feature 15 may be the result of repeated use and cleaning episodes with charcoal embers being left in the pit for later fires. The Class 5 earth oven was situated in the center of the south half of the pit distribution. The cultural affiliation of Feature 15 is early Middle Woodland Neel phase or McFarland phase.

A shallow (Class 3) pit (F 53) was excavated to inter the cremated remains of at least two individuals. Cremation of the dead and redeposition of the remains in a shallow pit is characteristic of the Middle Woodland period. Feature 53 was located in the southwest quadrant of the pit distribution. The cultural affiliation of this Class 3 pit is early Middle Woodland Neel phase.

A single shallow (Class 3) historic feature (F 43) was probably beneath a structure. Feature 43 was situated along the west edge of the pit distribution.

The functions of the remaining pits on the Aenon Creek site could not be determined from the size classes, forms, and material contents. These pits may have served as small temporary storage facilities, areas of soil recovery for construction or pottery production, processing facilities, or numerous other uses.

STRUCTURE

A structure, consisting of postholes (PH 1-4), was located along the east edge of the pit distribution (Figure 16). This semicircular structure was probably either a roofed shelter open on one side or a simple windbreak lacking a roof (Faulkner and McCollough 1974:245). The open side faced northeast and interior pits were lacking. The structure measured 4.7 m x 1.5 m (floor area-5.7 m^2). Four postholes that formed the wall of the structure were spaced 1.6-2.4 m apart. The mean dimensions of the postholes are 21 cm x 20 cm in plan view and 13 cm in depth. This shelter was probably a sleeping and work enclosure or wind break used during the warm weather.

Open-sided shelters were found on Late Archaic Ledbetter phase and early Middle Woodland McFarland phase and Neel phase occupations in the Duck River and Elk River drainages (Bentz 1988a:50-66; Butler 1977:11; DuVall 1982:67-71). The Ledbetter phase shelters were rectangular in form and contained interior hearths and storage pits while the early Middle Woodland shelters were semicircular in shape and generally lacked interior pits. Four McFarland phase shelters on the Ewell III site (40CF118) in the Upper Duck River Drainage measured 4.4-7.2 m x 2.1-4.3 m in plan view and the open sides faced northeast and northwest. The smallest of the Ewell III site shelters is approximately the same size as the Aenon Creek site structure. One Neel phase shelter on the Yearwood site (40LN16) in the Middle Elk River Drainage measured 7.7 m x 4.7 m in plan view and the open side faced southeast. The shelter on the Aenon Creek site is attributed to the early Middle Woodland occupation of the site because of the distinct similarities to other Woodland shelters in the region.

FEATURE DISTRIBUTION

The distribution of features forms an oval pattern measuring 52 m x 42 m (1,701 m^2) (Figures 16, 17, and 26). This distribution corresponds to the southern terminus of a terrace remnant of Aenon Creek at the 205 m contour interval (Figure 6).

Domestic activity zones on the site may be represented by clusters of two to five pits (Figure 27). These activity zones were generally comprised of one medium (Class 2) pit and one to four shallow (Class 3) pits (F 11 and 12; F 14, 34, and 35; F 17 and 54; F 18, 19, 20, 56, and 59; and F 44 and 45). One cluster consists of three shallow (Class 3) pits (F 1-3). The sparsity of cultural material in these features precludes determining the specific activities conducted within the zones. Similar domestic zones used for cooking, processing, and storage are characteristic of the early Middle Woodland in the Duck River Drainage (DuVall 1982:20-28, 39-79). The three medium (Class 2) storage pits (F 24, 29, and 42) occurred at the east, west, and south edges of the pit distribution separated from other features by approximately 3-6 m.

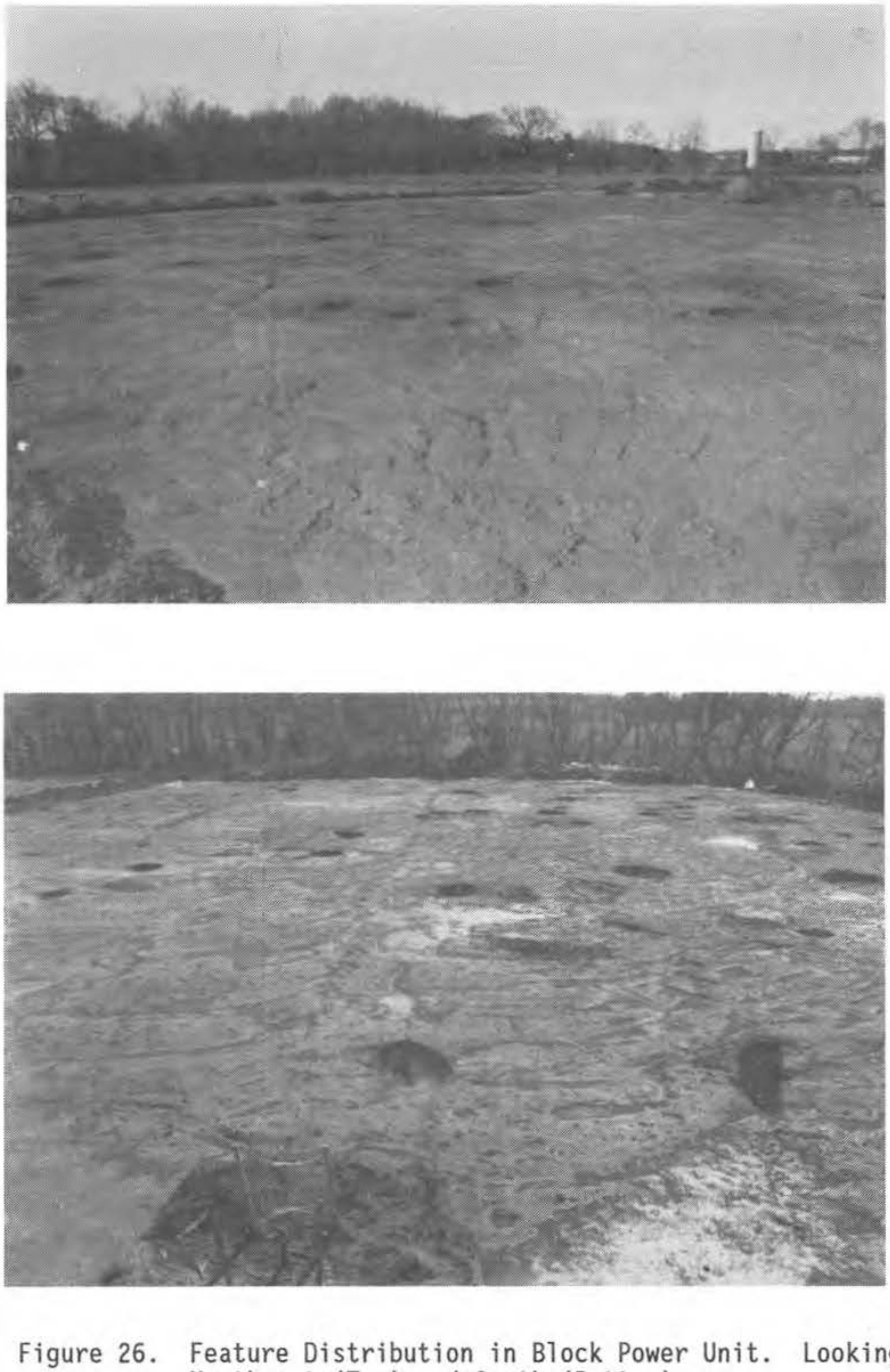

Figure 26. Feature Distribution in Block Power Unit. Looking Northwest (Top) and South (Bottom).

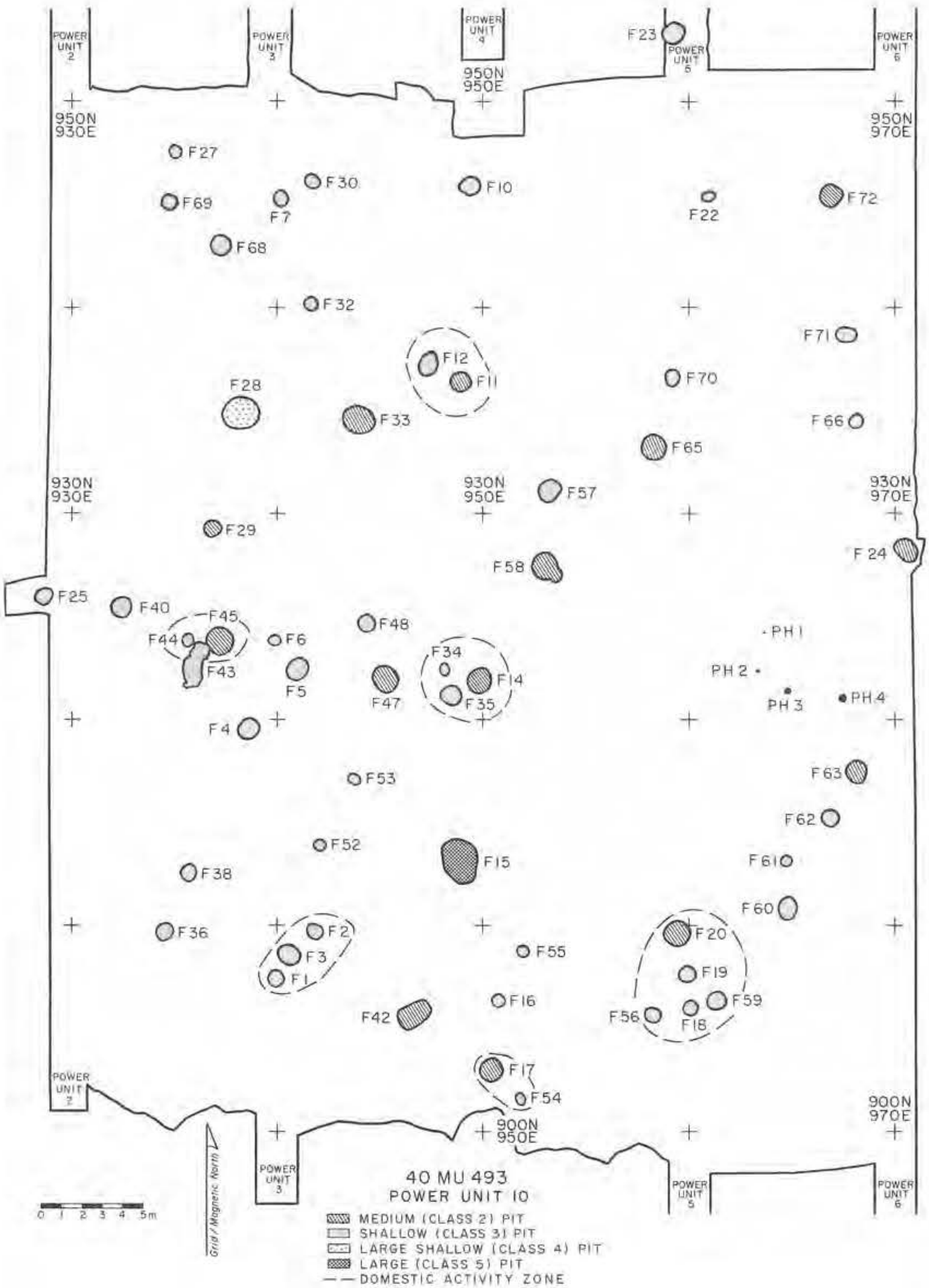

Figure 27. Distribution of Pit Features by Size Classification.

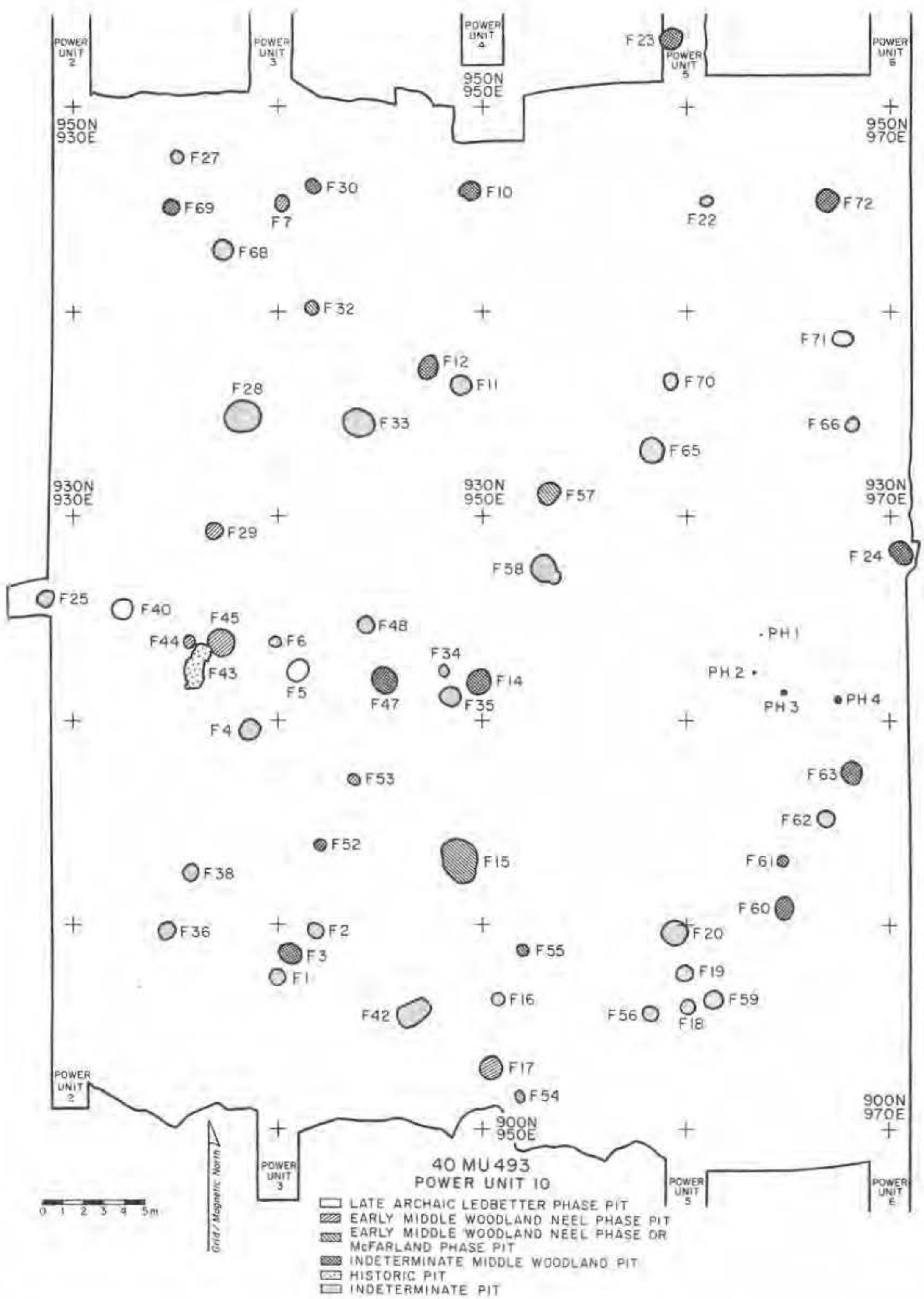

Figure 28. Distribution of Pit Features by Cultural Affiliation.

An area in the southeast section of the pit distribution was nearly devoid of features. This area measured 36 m x 22 m (657 m^2) and was delineated by Feature 66 to the northeast, Feature 42 to the southwest, Feature 14 to the northwest, and Feature 63 to the southeast and was further defined by 31 pit features bordering the area. The open space may represent a central communal work and sleep area with individual family units carrying out many daily activities around the periphery. The 31 pit features adjacent to the open area included those in four of the six domestic activity zones and two of the three medium (Class 2) storage pits. The domestic zones were spaced nearly evenly apart at the corners of a square pattern while a large (Class 5) earth oven (F 15) within the open area occurred at a central point equidistant from the activity zones. Each domestic zone may represent a family activity area while the earth oven was used by multiple families in the open space. Likewise, the semicircular pattern of four postholes (PH 1-4) that formed a shelter in the open area may also have been utilized by multiple families as a simple windbreak during certain work activities.

The two Late Archaic Ledbetter phase pits (F 5 and 40) were situated in the west-central portion of the feature distribution (Figure 28). The historic pit (F 43) was found in the same location. Pits identified as early Middle Woodland Neel phase (F 7, 17, 29, 44, 45, and 53), early Middle Woodland Neel phase or McFarland phase (F 15, 32, 54, and 57), or Indeterminate Middle Woodland (F 3, 10, 12, 14, 23, 24, 30, 47, 52, 55, 60, 61, 63, 69, and 72) were scattered across the site and found among the pits bordering the communal work and sleep area as well as in other sections of the feature distribution.

CHAPTER IV

RADIOCARBON DATES

Charles Bentz, Jr.

For the purpose of dating the Late Archaic and Middle Woodland occupations of the Aenon Creek site, four charcoal samples were sent to Beta Analytic, Inc. for analysis. The carbonized samples submitted for radiocarbon (C-14) age determinations each consisted of 6.1-20.2 grams of either hickory and ash wood; hickory and/or black walnut nutshell; or oak, hickory, ash, and redbud wood combined with hickory and black walnut nutshell. One of the samples dates the Late Archaic period occupation of the site to approximately 2400-2200 B.C. and three samples date the Middle Woodland period occupation to about 500 B.C.-A.D. 150.

A charcoal sample for C-14 dating was obtained from a pit (F 5) situated near the west-central edge of the feature distribution. Feature 5 was a shallow (Class 3) pit that contained a projectile point/knife diagnostic of the Late Archaic period and lacked Woodland artifacts. The projectile point/knife is in the Late Archaic Ledbetter cluster. A charcoal sample of hickory and black walnut nutshell from Feature 5 yielded a radiocarbon age and equivalent uncalibrated date of 4200 ± 100 years: 2250 B.C. (Beta-27351). Feature 5 was located approximately 8 m east of another shallow (Class 3) pit that contained a Late Archaic Ledbetter cluster projectile point/knife.

A series of 22 radiocarbon age determinations from Late Archaic occupations in the Interior Low Plateau Physiographic Province date archaeological phases attributed to this time period at approximately 5750-2450 B.P. (3800-500 B.C.). The radiocarbon assays place the early Late Archaic Benton phase at 5765-5245 B.P. (3815-3295 B.C.) with a mean date of 5557 B.P. (3607 B.C.), the Ledbetter phase at 5055-2850 B.P. (3105-900 B.C.) with a mean date of 4220 B.P. (2270 B.C.), and the terminal Late Archaic Wade phase at 3025-2400 B.P. (1075-450 B.C.) with a mean date of 2778 B.P. (828 B.C.) (Table 2 and Figure 29).

The one radiocarbon age determination from the Late Archaic component at the Aenon Creek site occurs near the mean date of the Ledbetter phase. Ledbetter cluster projectile points/knives and fewer Benton cluster and Little Bear Creek cluster projectile points/knives are associated with the Late Archaic Ledbetter phase in the Interior Low Plateau Physiographic Province. Features 5 and 40 on the Aenon Creek site are attributed to the Late Archaic Ledbetter phase because of the presence of a Ledbetter cluster projectile point/knife and lack of Woodland artifacts in each pit as well as the radiocarbon date of 2250 B.C. from Feature 5.

Charcoal samples for C-14 dating were obtained from three pits that contained ceramics and/or projectile points/knives diagnostic of the Middle Woodland period. Feature 7 was a shallow (Class 3) pit situated near the northwest edge of the pit

Table 2. Radiocarbon Dates from Selected Late Archaic through Middle Woodland Archaeological Phases.

Radiocarbon Age	Uncalibrated Date (B.C./A.D.)	Phase	Archaeological[a] Site	Source
5765±200	3815 B.C.	Benton	Ervin (40MU174)	Hofman 1984b:3-7
5660±190	3710 B.C.	Benton	Hayes (40ML139)	Klippel and Morey 1986:803
5245±230	3295 B.C.	Benton	Hayes (40ML139)	Klippel and Turner 1983:23
5055±105	3105 B.C.	Ledbetter	Eoff I (40CF32)	Faulkner 1977:213
4960±100	3010 B.C.	Ledbetter	Bailey (40GL26)	Bentz 1988b:84
4780±80	2830 B.C.	Ledbetter	Bailey (40GL26)	Bentz 1988b:84
4450±80	2500 B.C.	Ledbetter	Bailey (40GL26)	Bentz 1988b:84
4390±95	2440 B.C.	Ledbetter	Fattybread Branch (40MU408)	Amick 1986:390
4270±155	2320 B.C.	Ledbetter	Hayes (40ML139)	Klippel and Turner 1983:23
4210±155	2260 B.C.	Ledbetter	Fattybread Branch (40MU408)	Amick 1986:390
4200±100	2250 B.C.	Ledbetter	Aenon Creek (40MU493)	
4185±165	2235 B.C.	Ledbetter	Tom's Shelter (40MU390)	Hall 1985:96
4040±95	2090 B.C.	Ledbetter	Fattybread Branch (40MU408)	Amick 1986:390
4030±260	2080 B.C.	Ledbetter	Banks V (40CF111)	Faulkner and McCollough 1974:297, 316
3880±210	1930 B.C.	Ledbetter	Fattybread Branch (40MU408)	Amick 1986:390
3755±77	1805 B.C.	Ledbetter	Aaron Shelton (40CF69)	Wagner 1982:432
3025±75	1075 B.C.	Wade	Nowlin II (40CF35)	Keel 1978:134
2960±135	1010 B.C.	Wade	Banks III (40CF108)	Faulkner and McCollough 1974:294, 320
2920±215	970 B.C.	Wade	Nowlin II (40CF35)	Keel 1978:133
2850±870	900 B.C.	Ledbetter	Banks V (40CF111)	Faulkner and McCollough 1974:297
2790±80	840 B.C.	Wade	Ewell III (40CF118)	DuVall 1982:62

Table 2. (continued).

Radiocarbon Age	Uncalibrated Date (B.C./A.D.)	Phase	Archaeological Site	Source
2625±140	675 B.C.	Watts Bar	Nowlin II (40CF35)	McCollough and DuVall 1976:114
2575±85	625 B.C.	Wade	Oldroy (40HI131)	Herbert 1986:158
2400±60	450 B.C.	Wade	Chapman (40JK102)	Bentz 1986b:65
2400±70	450 B.C.	Neel	Aenon Creek (40MU493)	
2350±125	400 B.C.	Watts Bar	Nowlin II (40CF35)	McCollough and DuVall 1976:114
2340±90	390 B.C.	Watts Bar	Banks V (40CF111)	Faulkner and McCollough 1974:297
2285±110	335 B.C.	Neel	Brickyard (40FR13)	Butler 1968:204
2220±60	270 B.C.	Neel	Aenon Creek (40MU493)	
2170±185	220 B.C.	Neel	Parks (40CF5B)	Bacon 1982:178
2165±110	215 B.C.	McFarland	Aaron Shelton (40CF69)	Wagner 1982:421
2155±80	205 B.C.	Longbranch	Banks I (40CF34)	Faulkner and McCollough 1974:297
2095±430	145 B.C.	McFarland	Banks III (40CF108)	Faulkner and McCollough 1974:296
2065±60	115 B.C.	Neel	Eoff I (40CF32)	Faulkner 1977:73, 163
2040±95	90 B.C.	McFarland	Banks V (40CF111)	Faulkner and McCollough 1974:297
1980±60	30 B.C.	Neel	Yearwood (40LN16)	Butler 1977:10
1965±60	15 B.C.	McFarland	Eoff I (40CF32)	Faulkner and McCollough 1974:297
1930±65	A.D. 20	Neel	Yearwood (40LN16)	Butler 1977:10
1925±355	A.D. 25	McFarland	Ewell III (40CF118)	Keel 1978:164

Table 2. (continued).

Radiocarbon Age	Uncalibrated Date (B.C./A.D.)	Phase	Archaeological Site	Source
1900±95	A.D. 50	Neel	Yearwood (40LN16)	Butler 1977:10
1895±95	A.D. 55	McFarland	(40FR47)	Faulkner and McCollough 1974:297
1890±100	A.D. 60	McFarland	Ewell III (40CF118)	Keel 1978:164
1880±70	A.D. 70	Neel/McFarland	Aenon Creek (40MU493)	
1875±155	A.D. 75	Owl Hollow	Owl Hollow (40FR7)	Cobb and Faulkner 1978:61
1860±75	A.D. 90	McFarland	McFarland (40CF48)	Kline et al. 1982:68
1855±100	A.D. 95	Owl Hollow	Owl Hollow (40FR7)	Cobb and Faulkner 1978:61
1845±65	A.D. 105	McFarland	McFarland (40CF48)	Kline et al. 1982:68
1840±70	A.D. 110	McFarland	McFarland (40CF48)	Kline et al. 1982:68
1830±60	A.D. 120	McFarland	McFarland (40CF48)	Kline et al. 1982:68
1825±145	A.D. 125	McFarland	Banks III (40CF108)	Faulkner and McCollough 1974:295
1800±75	A.D. 150	McFarland	Banks III (40CF108)	Faulkner and McCollough 1974:295
1800±75	A.D. 150	Neel	Yearwood (40LN16)	Butler 1977:10
1795±110	A.D. 155	McFarland	Ewell III (40CF118)	Keel 1978:164
1785±155	A.D. 165	McFarland	Banks III (40CF108)	Faulkner and McCollough 1974:295
1760±400	A.D. 190	McFarland	Banks III (40CF108)	Faulkner and McCollough 1974:295
1740±60	A.D. 210	McFarland	McFarland (40CF48)	Kline et al. 1982:68
1725±60	A.D. 225	Owl Hollow	Owl Hollow (40FR7)	Cobb and Faulkner 1978:61
1715±65	A.D. 235	Owl Hollow	Owl Hollow (40FR7)	Cobb and Faulkner 1978:61

Table 2. (continued).

Radiocarbon Age	Uncalibrated Date (B.C./A.D.)	Phase	Archaeological Site	Source
1710±75	A.D. 240	Owl Hollow	Banks V (40CF111)	Cobb 1978:80-82
1695±85	A.D. 255	Owl Hollow	Owl Hollow (40FR7)	Cobb and Faulkner 1978:60
1675±60	A.D. 275	Owl Hollow	Owl Hollow (40FR7)	Cobb and Faulkner 1978:62
1665±85	A.D. 285	Owl Hollow	Banks V (40CF111)	Cobb 1978:80-82
1640±65	A.D. 310	Owl Hollow	Owl Hollow (40FR7)	Cobb and Faulkner 1978:61
1565±55	A.D. 385	Owl Hollow	Eoff I (40CF32)	Cobb 1982:152-158
1555±185	A.D. 395	Owl Hollow	Banks III (40CF108)	Faulkner and McCollough 1974:296, 473
1555±75	A.D. 395	Owl Hollow	Eoff I (40CF32)	Cobb 1982:152-158
1555±70	A.D. 395	Owl Hollow	Banks V (40CF111)	Cobb 1978:80-82
1515±65	A.D. 435	Owl Hollow	Banks V (40CF111)	Cobb 1978:80-82
1495±65	A.D. 455	Owl Hollow	Banks V (40CF111)	Cobb 1978:80-82
1485±145	A.D. 465	Owl Hollow	Banks III (40CF108)	Faulkner and McCollough 1974:296, 473
1485±95	A.D. 465	Owl Hollow	Shofner (40BD55)	Cobb and Faulkner 1978:12
1485±60	A.D. 465	Owl Hollow	Eoff I (40CF32)	Cobb 1982:152-154
1470±60	A.D. 480	Owl Hollow	Peters (40FR45)	Cobb and Faulkner 1978:61
1470±515	A.D. 480	Owl Hollow	Banks III (40CF108)	Faulkner and McCollough 1974:296, 473
1460±130	A.D. 490	Owl Hollow	Banks III (40CF108)	Faulkner and McCollough 1974:296, 473
1425±80	A.D. 525	Owl Hollow	Banks V (40CF111)	Cobb 1978:80-82
1415±60	A.D. 535	Owl Hollow	Owl Hollow (40FR7)	Cobb and Faulkner 1978:60
1385±85	A.D. 565	Owl Hollow	Owl Hollow (40FR7)	Cobb and Faulkner 1978:60
1385±85	A.D. 565	Owl Hollow	Shofner (40BD55)	Cobb and Faulkner 1978:12

Table 2. (continued).

Radiocarbon Age	Uncalibrated Date (B.C./A.D.)	Phase	Archaeological Site	Source
1380±95	A.D. 570	Owl Hollow	Banks V (40CF111)	Cobb 1978:80-82
1335±60	A.D. 615	Owl Hollow	Raus (40BD46)	Cobb and Faulkner 1978:38
1320±125	A.D. 630	Owl Hollow	Owl Hollow (40FR7)	Cobb and Faulkner 1978:61
1165±125	A.D. 785	Owl Hollow	Owl Hollow (40FR7)	Cobb and Faulkner 1978:61

[a] Benton is not a formally defined phase.

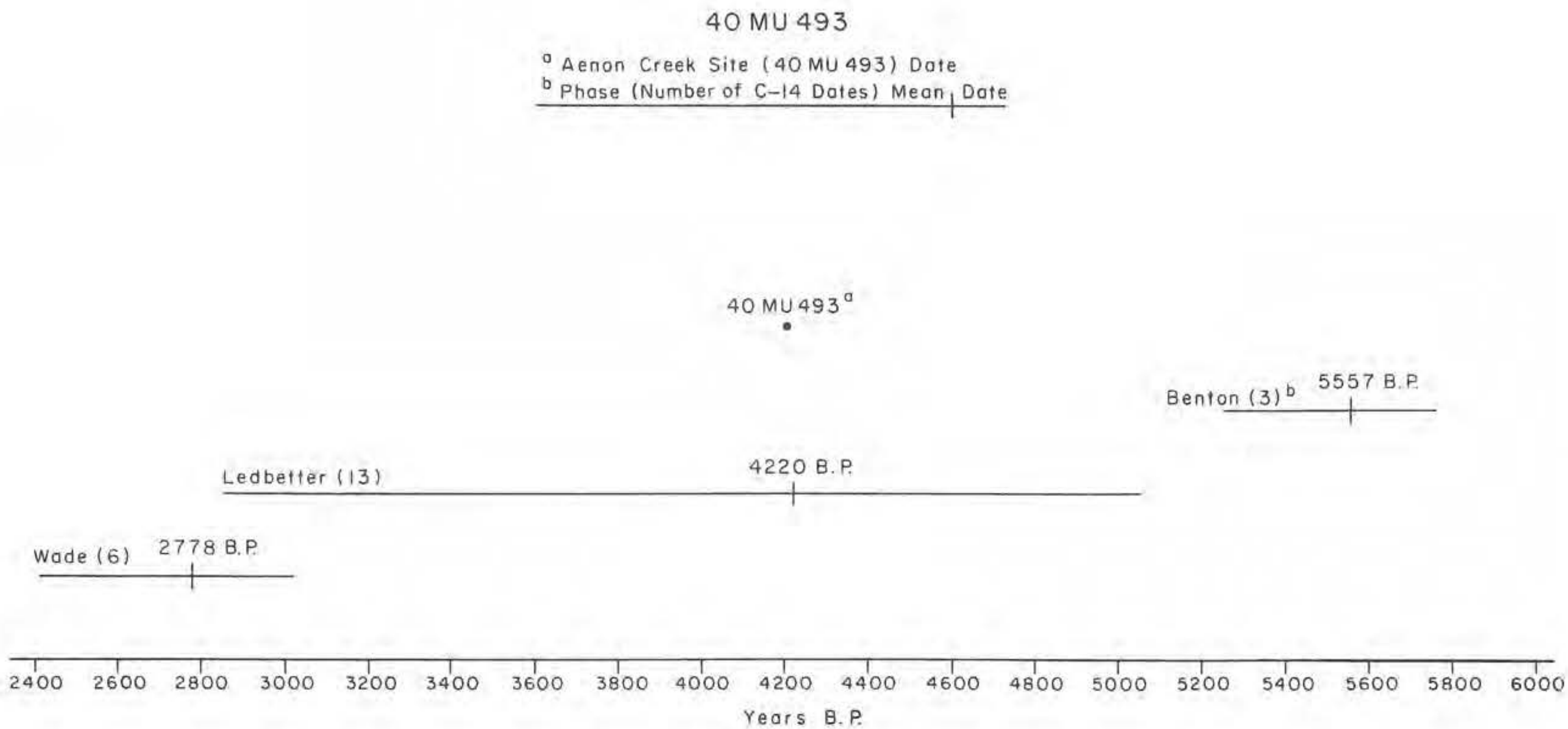

Figure 29. Chronological Distribution of Late Archaic Archaeological Phases.

near the northwest edge of the pit distribution that contained plain and cordmarked limestone tempered ceramics and a McFarland cluster projectile point/knife. A charcoal sample of oak, hickory, ash, and redbud wood and hickory and black walnut nutshell from Feature 7 yielded a radiocarbon age and equivalent uncalibrated date of 2400 ± 70 years: 450 B.C. (Beta-27352). Feature 15 was a large (Class 5) earth oven located in the south-central section of the pit distribution that contained limestone tempered ceramics. A charcoal sample of hickory and ash wood from Feature 15 yielded a radiocarbon age and equivalent uncalibrated date of 1880 ± 70 years: A.D. 70 (Beta-27353). Feature 29 was a medium (Class 2) storage pit situated along the west-central edge of the feature distribution. Plain, cordmarked, and check stamped limestone tempered ceramics were found in this pit along with projectile points/knives in the McFarland and Lanceolate Expanding Stem clusters. A charcoal sample of hickory nutshell from Feature 29 yielded a radiocarbon age and equivalent uncalibrated date of 2220 ± 60 years: 270 B.C. (Beta-27354).

A series of 57 radiocarbon age determinations from Early and Middle Woodland occupations in the Interior Low Plateau Physiographic Province date archaeological phases attributed to these time periods at approximately 2650-1150 B.P. (700 B.C.-A.D. 800). The radiocarbon assays place the Early Woodland Watts Bar phase at 2625-2340 B.P. (675-390 B.C.) with a mean date of 2438 B.P. (488 B.C.), the Early Woodland Longbranch phase at 2155 B.P. (205 B.C.), the early Middle Woodland Neel phase at 2285-1800 B.P. (335 B.C.-A.D. 150) with a mean date of 2019 B.P. (69 B.C.), the early Middle Woodland McFarland phase at 2165-1740 B.P. (215 B.C.-A.D. 210) with a mean date of 1886 B.P. (A.D. 64), and the late Middle Woodland Owl Hollow phase at 1875-1165 B.P. (A.D. 75-785) with a mean date of 1533 B.P. (A.D. 417) (Table 2 and Figure 30).

The three radiocarbon age determinations from the early Middle Woodland component at the Aenon Creek site overlap the time ranges for the Early Woodland and early Middle Woodland phases. The site form consists mostly of medium (Class 2) pits, including a few storage pits, shallow (Class 3) pits, including a feature that contained redeposited cremations, and a semicircular shelter. The shelter type is found on early Middle Woodland Neel phase and McFarland phase habitations in the Duck River Drainage of the Interior Low Plateau Physiographic Province. The site assemblage includes plain, cordmarked, fabric impressed, and check stamped limestone tempered ceramics and McFarland cluster and Lanceolate Expanded Stem cluster projectile points/knives. The association of these artifact types is characteristic of early Middle Woodland Neel phase settlements in the Duck and Elk River drainages. Cremation of the dead is also typical of the Neel phase.

Six pit features (F 7, 17, 29, 44, 45, and 53) are attributed to the early Middle Woodland Neel phase occupation of the Aenon Creek site. The material assemblage from five of these features includes plain, cordmarked, and check stamped limestone tempered ceramics and McFarland cluster and Lanceolate Expanded Stem cluster projectile points/knives. One of the features lacked Neel phase artifacts but contained redeposited cremations. Radiocarbon ages were determined for two of the six Neel

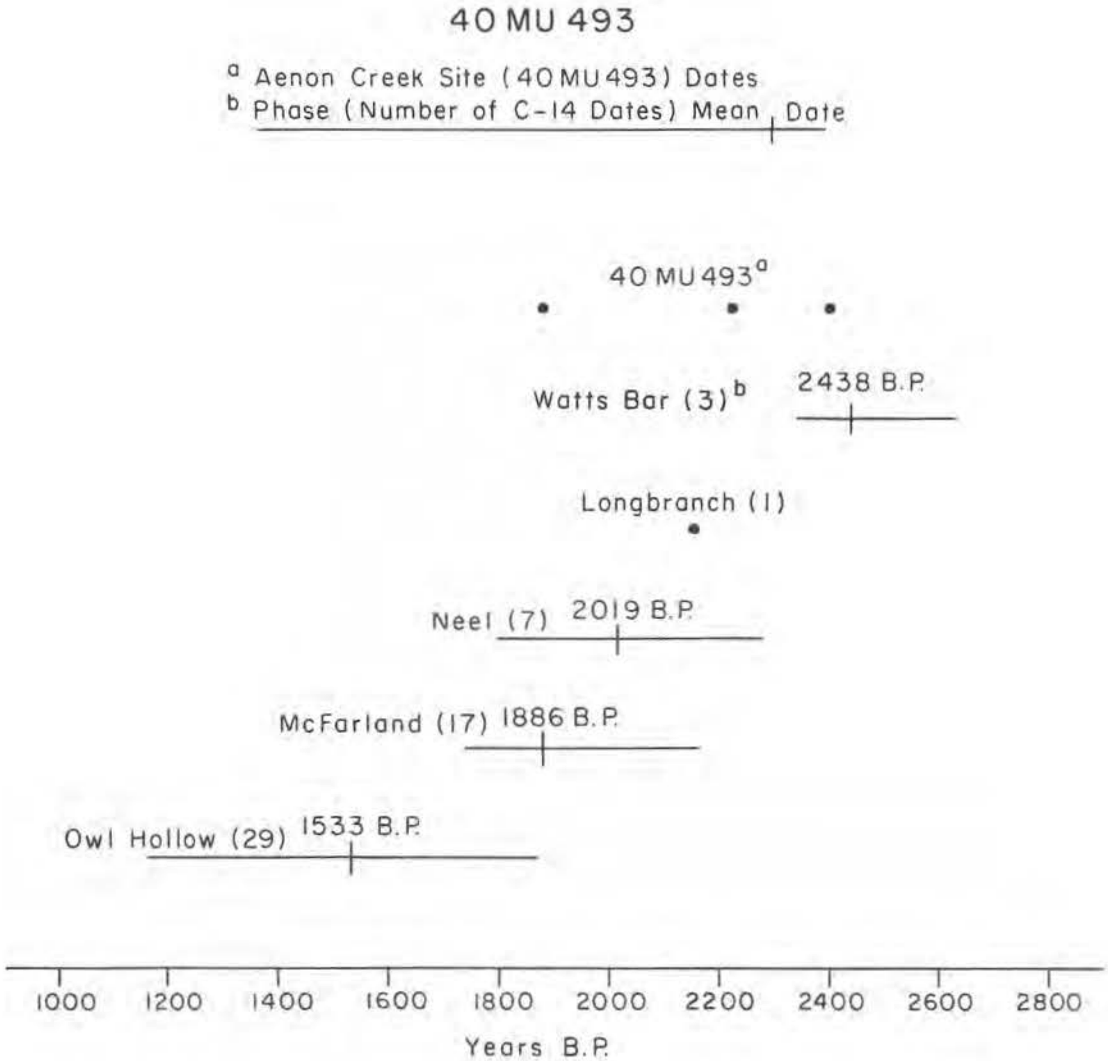

Figure 30. Chronological Distribution of Early Woodland and Middle Woodland Archaeological Phases.

phase features (F 7 and 29). Four pit features (F 15, 32, 54, and 57) are attributed to either the early Middle Woodland Neel phase or McFarland phase. The material assemblage from these features includes plain, fabric impressed, and residual limestone tempered ceramics and McFarland cluster projectile points/knives. These artifact types could represent an Early Woodland Longbranch occupation but most likely are the result of a Neel phase or early McFarland phase settlement during the early Middle Woodland. A radiocarbon age was determined for one of the four Neel phase/McFarland phase features (F 15). Seven pit features (F 24, 30, 47, 52, 60, 61, and 63) contained residual limestone tempered ceramics and are assigned an Indeterminate Middle Woodland cultural affiliation. These seven features could date as early as the Early Woodland Longbranch phase or as late as the late Middle Woodland Owl Hollow phase. The virtual absence of known Longbranch phase occupations in the Middle Duck River Drainage suggests these features are probably not Early Woodland. The near lack of projectile points/knives on the site associated with the Owl Hollow phase, Swan Lake variety of the Lanceolate Expanded Stem cluster and Lanceolate Spike cluster, suggests that these features are not late Middle Woodland. Eight pit features (F 3, 10, 12, 14, 23, 55, 69, and 72) lacked Middle Woodland artifacts but contained charred goosefoot and/or maygrass seeds and are also assigned an Indeterminate Middle Woodland cultural affiliation. These features could date as early as the early Middle Woodland Neel phase or as late as the late Middle Woodland Owl Hollow phase. The fifteen Indeterminate Middle Woodland features may be associated with the Neel phase occupation.

Nearly one-half of the pit features and the semicircular structure on the Aenon Creek site are attributed to the Middle Woodland period. An early Neel phase occupation occurred around 500-200 B.C. while a later Neel phase or McFarland phase occupation occurred around A.D. 1-100. Most of the pit features of Indeterminate cultural affiliation are probably associated with the Middle Woodland settlements. Two pit features are attributed to the Late Archaic Ledbetter phase. A few of the Indeterminate features may be associated with the Late Archaic component.

CHAPTER V

LITHIC MATERIAL

George M. Crothers

The Aenon Creek site lithic material was recovered from three contexts: 1) a systematic intensive surface collection of the disked ground surface, 2) excavation of a limited number of test units in the plowzone, and 3) excavation of pit feature fill defined in the subplowzone soil. The systematic or "controlled" surface collection is comprised of 116 10 m x 10 m contiguous units encompassing the entire site area. Additionally, these 10 m x 10 m collection units were divided into four sections and collected separately. Although this material has been analyzed, coded, and bagged separately, the analyses presented here treat the four sections as one analytical collection unit. Four 1 m x 1 m test units were excavated in arbitrary 10 cm levels to the base of the plowzone. Material was recovered in a dry screen lined with 6.4 mm (1/4 inch) hardware cloth. Feature fill was waterscreened through paired upper and lower screen boxes lined with 6.4 mm and 1.6 mm (1/16 inch) hardware cloth. A flotation column was also processed from each feature and the heavy fraction passed through 6.4 mm and 1.6 mm screens to make compatible size grade samples to the waterscreened material. Lithic material less than the 6.4 mm screen size was not analyzed.

Lithic material recovered from the Aenon Creek site is dominated by a variety of cryptocrystalline quartz (i.e., chert and chalcedony) knapping debitage, bifacial tools, flake tools, and unmodified residual chert fragments. Macrocrystalline quartz (i.e., milky quartz) and quartzite are also present but in very small quantities. Burned or heated limestone was also recovered in moderate quantities from numerous features and presumably indicates its use in earth ovens. Two large unheated blocks of limestone were recovered from two pits. Small amounts of shale, sandstone, limonite/hematite, and galena were also recovered from a few pit features. There is a conspicuous lack of material or tool fragments from pecked, ground, and abraded stone industries. Temporally and culturally diagnostic projectile point/knife clusters were identified representing Early Archaic through Late Woodland occupations of the Aenon Creek site. This lithic assemblage appears to be dominated by Late Archaic and Middle Woodland diagnostic projectile point/knife clusters.

LABORATORY METHODS

Material collected during the project was processed in three steps prior to any analysis. The initial step was to sort all material into broad artifact classes (i.e., debitage and cores, nondiagnostic bifacial and flake tools, hammerstone cobbles, and projectile points/knives). Second, nonmetric and metric attributes of those artifacts were translated into a computer coding format designed to provide meaningful material correlates without significantly obscuring variability among material remains. Finally, artifact codes were entered in a microcomputer database program, edited, and rechecked against the original material to insure that consistency was maintained during the coding process.

Each artifact class database file consists of a series of database "fields," pertaining to specific attributes, that contain a code identifying the attribute state of that artifact. Redundancy was an integral part of the format so that analyses could be conducted at various levels of detail. It was also important that information derived from the Aenon Creek site lithic coding format be comparable with other coding schemes (e.g., Columbia Archaeological Project) and integrable, in the broader sense, with typological nomenclature in common use in southeastern archaeology. However, a major concern while designing the coding format was that artifact variability (i.e., morphological, functional, stylistic, and material variability) not be obscured by simple typological conscripts.

Size Grade

Debitage, cores, unmodified chert, hammerstones, and other nonchert lithic debris were "size graded" by passing the material through a series of nested wire screens. The screen sizes used to separate material were Grade 0 < 3.1 mm (1/8 inch), Grade 1-3.1 mm, Grade 2-6.4 mm (1/4 inch), Grade 3-12.7 mm (1/2 inch), Grade 4-25.4 mm (1 inch), Grade 5-50.8 mm (2 inches), Grade 6-76.2 mm (3 inches), Grade 7-101.6 mm (4 inches), and Grade 8 > 101.6 mm.

Chert Raw Material Types

Chert was identified to its geologic parent formation when possible. All other lithic material was identified to the geologic rock type. Identifications were made using previous material descriptions (Amick 1984; Faulkner and McCollough 1973) and the extensive comparative collections at The University of Tennessee, Department of Anthropology. Cryptocrystalline quartz below Size Grade 2 (< 6.4 mm) was only identified as undifferentiated chert/chalcedony.

Five parent formation chert types were identified in the Aenon Creek site lithic material. These include Ordovician age Carters and Bigby-Cannon Limestone cherts, Silurian age Brassfield Formation chert, and Mississippian age Fort Payne Formation and St. Louis Limestone cherts. Milky quartz, quartzite, and chalcedony were also identified in the lithic material but the parent formations are not known. Chert and chalcedony greater than 6.4 mm that did not resemble one of the defined geologic types were classified as indeterminate and further differentiated as being "suspected local" or "suspected nonlocal" material. Material that exhibited characteristics of two or more defined local types, but could not be confidently assigned to only one, was designated as an indeterminate chert but suspected to have a local origin. Chert that was unfamiliar or lacked any distinguishing characteristic of the defined local types was designated as an indeterminate chert but suspected to be extralocal or exotic in origin.

Carters chert. Carters chert is immediately local to the Aenon Creek site, occurring in the creek bed gravel and as a residual constituent in the hills around the site. It is typically white to gray with gray-brown mottling and distinctive white specks are common throughout the matrix. A less common variety is characterized by fine darker gray banding. Carters chert is opaque, dull, and medium to coarse-grained and usually riddled with incipient fracture planes that make it less desirable for knapping (Amick 1984:48). Carters is comparable to the nearby Ordovician Ridley Limestone cherts. It is conceivable that if Ridley chert is present at the Aenon Creek site it would be nearly indistinguishable from the prevalent Carters chert occurring at the site. However, the poor knapping quality of Ridley chert, much like Carters, makes it less than a desirable resource at any distance from the direct source areas.

Bigby-Cannon chert. Bigby-Cannon chert, also referred to as gray-banded chert (Faulkner and McCollough 1973:53), is intermediately local to the Aenon Creek site. It is distinguished by its dark gray color with wavy black bands. It is opaque, fine-grained, and lustrous but weathers to a dull grainy "brown-banded" form (Amick 1984:54). This chert was desirable for its high tractability, nodule size, and qualities as a hammerstone in its weathered form.

Brassfield chert. Brassfield chert is an intermediately local chert but limited in its distribution. It exhibits a wide variety of colors and inclusions but is characterized by a smooth cream-colored cortex and faint maroon tinting often forming a thin subcortex band (Amick 1984:56). It is fine-grained, opaque, and highly tractable.

Fort Payne chert. Fort Payne chert is a common chert resource throughout the Interior Low Plateau. Its many color varieties and structural qualities have been described by numerous authors (Amick 1984; Faulkner and McCollough 1973; Penny and McCollough 1976). The varieties commonly distinguished by researchers (blue-gray and tan laminated, pepper-and-salt speckled, and fibrous) were not distinguished in the Aenon Creek site material coding scheme. Its abundance as both river cobbles and residual material in the intermediate environs of Aenon Creek makes it a highly useful chert resource.

St. Louis chert. St. Louis chert is also a well known chert type in the Midsouth. The chert has a distinct blue-green to blue-gray vitreous translucent appearance. It is highly tractable and fine-grained. St. Louis chert is not immediately local to the Aenon Creek site but its occurrence on archaeological sites throughout the Nashville Basin is not uncommon due to its desirable qualities.

Cortex

Cortex, when it was present on chert debitage or tools, was identified as matrix/residual, waterworn, incipient fracture planes, or combinations of incipient and residual or waterworn cortex. Matrix/residual cortex was identified by its thick chalking appearance. This cortex is often associated with incipient fracture planes. Waterworn cortex, as the name implies, is derived from the tumbling action in a stream. It typically has a dense hard (often brown-stained) "rolled" appearance, meaning the edges of a blocky fragment have been rounded and smoothed. Incipient fracture planes are characterized by their flat angular surfaces where the chert has fractured along its natural cleavage.

Lithic Tool and Debris Types

Complete flakes (containing a platform, bulb of percussion, and a distal terminus) were identified as primary decortication if all of the dorsal surface contained cortex. Secondary decortication flakes had negative flake scars on the dorsal surface but still contained cortex. Tertiary core reduction flakes may have cortex remaining on the platform but the primary dorsal surface lacks all cortex. Biface thinning flakes were classed based on the presence of a lipped platform, generally at an acute angle to the dorsal surface. Biface thinning flakes may contain cortex and were coded accordingly.

Broken flakes were coded separately because of the problems with inflating secondary decortication flake categories (Amick 1984). Broken flakes were distinguished between proximal (platform remnant bearing) and distal (lacking platform). Further, the amount of cortex and presence of a lipped platform were used to distinguish these broken flake categories. The categories correspond to the primary (full), secondary (partial), tertiary (none), and biface thinning (lipped) categories used for complete flakes. Additionally, an attempt to identify blades, bipolar debris, core rejuvenation flakes, and retouch was made but they represent minor categories or were not identified during the coding process.

Four types of nonflake or core debris were recognized. Primary cores and core fragments exhibit flake removal platforms and numerous flake scars. Incipient cores do not contain flake removal platforms but do exhibit several random flake scars. Blocky debris was used to describe the significant amount of large angular or cubical debris exhibiting relatively recent breakage or "shatter" but no consistent or distinct evidence of flake removal or testing. Residual material, primarily Carters chert, that did not exhibit any flake removal or recent shatter was coded as unmodified material.

The tool type categories consist primarily of biface manufacturing stages, a small number of utilized and retouched flake tools, a unifacial scraper, a few drill bits, a perforator, and several hammerstones. Retouched flakes were distinguished from utilized flakes in that retouch appeared to be intentional reshaping of the flake margin to obtain a specific shape such as a small projection or spur while utilized flakes appeared to have damage along one or more of the flake margins from use as a cutting or scraping implement.

Five bifacial manufacturing stages were recognized along with a category for indeterminate bifacial fragments. Biface I category was used to describe crude bifacially flaked implements often containing cortex on the surfaces. Biface II stage includes bifacial blanks shaped predominantly by hard hammer percussion. Cortex is rarely present on these. Biface III stage is shaped primarily by soft hammer percussion but still retains a "blank" shape. The Biface IV stage contains pressure flaked, shaped, or haft modified margins but represents an unfinished form. The Biface V stage represents finished tool forms. This stage was further divided into fragments containing evidence of the haft modification (proximal fragments), fragments of distal and medial finished forms, and complete or nearly complete projectile point/knife diagnostic types.

A total of 81 diagnostic projectile points/knives was identified in the Aenon Creek site tool assemblage representing 14 temporally or culturally significant types in 8 clusters. Additional metric and nonmetric attributes were recorded for these artifacts, including overall length, greatest width of blade, greatest thickness, stem length, stem width at the neck, stem width at the base, weight, basal morphology, evidence of basal grinding, blade morphology, and evidence of blade retouch or resharpening.

Heat Alteration

Five categories of heat alteration or possible heat alteration were recognized for the tool and debitage lithic classes. Increased luster and distinct color change were recorded as definite heat alteration prior to final modification. Some color change (usually uneven) and increase in luster was recorded as possible heat alteration prior to final modification. Incipient potlids were recorded as evidence of slight heat alteration, most likely the result of post-depositional activities. Scattered potlid scars and some change in luster were recorded as definite exposure to heat after final modification but the intent is not implied. Much potlidding, crenulation, and change in luster are evidence of intense heating after final modification but again aboriginal intent or post-depositional activities cannot be inferred.

RESULTS

Surface Collection Lithic Debris and Tools

The controlled surface collection produced 8,245 pieces of lithic debitage and debris. This material is summarized in Table 3 by flake or debris type and raw material. Eighty-three percent of this material is dominated by Fort Payne and Carters chert types, 56% and 27% respectively. Removing the indeterminate local material and undifferentiated chert less than 6.4 mm in size leaves less than 2% of the debris subsumed by Bigby-Canon, Brassfield, St. Louis, quartz, quartzite, chalcedony, and indeterminate nonlocal material types.

Table 3. Surface Collection Lithic Debris by Material Type.

Flake Type	Material Type										
	Fort Payne	Carters	Bigby-Cannon	Brassfield	St. Louis	Quartz	Chalcedony	Indeterminate Local	Indeterminate Nonlocal	< 6.4 mm	Total
<u>Complete Flakes</u>											
Primary	6[a]	5						6			17
Secondary	300	153		2	2			59			516
Tertiary	282	82	3	4	1			49	1	4	426
Biface Thinning	117	16		1				19	1	3	157
Blade	2										2
Core Rejuvenation	9	1			1						11
Retouch	1	1								5	7
Subtotal	717	258	3	7	4			133	2	12	1,136
<u>Broken Flakes</u>											
Proximal, Full Cortex	13	6						2		1	22
Proximal, Partial Cortex	169	53	3	6	1		1	26			259
Proximal, No Cortex	427	86		5	2		2	67	3	12	604
Proximal, Lipped	238	13		3	2			51	1	12	320
Distal, Full Cortex	22	10						12		1	45
Distal, Partial Cortex	440	132	4	5	2			86		5	674
Distal, No Cortex	1,215	157	5	9	9	1	2	339	2	101	1,840
Subtotal	2,524	457	12	28	16	1	5	583	6	132	3,764
<u>Other</u>											
Prepared Core	194	115	5	2	1			8	1		326
Incipient Core	245	260	3	6				23	1		538

Table 3. (continued).

Flake Type	Material Type										
	Fort Payne	Carters	Bigby-Cannon	Brassfield	St. Louis	Quartz	Chalcedony	Indeterminate Local	Indeterminate Nonlocal	< 6.4 mm	Total
<u>Other</u>											
Blocky Debris	939	793	8	10		3	3	340	1	28	2,125
Unmodified Nodules	1	311						44			356
Subtotal	1,379	1,479	16	18	1	3	3	415	3	28	3,345
Site Total	4,620	2,194	31	53	21	4	8	1,131	11	172	8,245

[a] Number of pieces.

A slightly different pattern is seen for the chert tool forms summarized in Table 4. Eighty-six percent of the tool assemblage is dominated by Fort Payne and Carters chert types, 80% and 6% respectively. Indeterminate local chert types account for less than 6% of the tool forms and the remaining types account for 8% of the tools. This may reflect a curated tool discard pattern in which tools made of less local chert types (i.e., Brassfield and St. Louis) are exhausted and discarded in place of retooling with more local Fort Payne and Carters chert.

All the stages of biface manufacture and core reduction trajectories are well represented among the Fort Payne and Carters tool and flake types. Bigby-Cannon and quartzite appear to be selected primarily for use as hammerstones. In fact much of the Bigby-Cannon debitage and core debris may be more related to the breakage of hammerstones than flake or bifacial tool production.

Examination of the proportion of Carters chert debris types indicates that tool forms are grossly underrepresented in the assemblage. Figure 31 is a simple proportional comparison of Carters and Fort Payne debris and tool classes. Whereas tools and blocky debris make up 1% and 42% of the Carters assemblage, respectively, the Fort Payne assemblage is comprised of 6% tools and only 19% blocky debris. This includes the rejection of 311 pieces or 14% of the Carters material as being unmodified residual debris. This suggests that either: 1) the reduction of Carters into tool forms produces a much greater ratio of waste to productive items due to the internally fractured nature of Carters chert, 2) that aboriginal use of Carters chert is overestimated by spurious plow-induced or other post-depositionally induced breakage and pseudo-flaking of residual material occurring at the site, or 3) aboriginal use of Carters chert involved processes that we have not or cannot recognize in the archaeological record.

To further explore the differences in prehistoric use of Carters versus Fort Payne chert, simple density plots were prepared using the distributional data from the controlled surface collection. The distribution of these two material types, shown in Figure 32, indicates almost identical patterns of distribution. Similar depositional forces seem to be working on the two material types. However, it is still unclear whether the depositional factors that have shaped these two similar distributions are aboriginal manifestations or post-depositional creations.

Test Unit Lithic Debris and Tools

The excavation of 4 1 m x 1 m test units in the plowzone recovered 869 pieces of chert debitage, 1 core, 8 incipient cores, 57 pieces of blocky debris, 23 pieces of unmodified chert, and 7 chert tools (including 1 diagnostic point type). This material is summarized in Table 5 by unit level and gross debris type.

Table 4. Surface Collection Lithic Tools by Material Type.

Tool Type	Material Type										
	Fort Payne	Carters	Bigby-Cannon	Brassfield	St. Louis	Quartz	Quartzite	Chalcedony	Indeterminate Local	Indeterminate Nonlocal	Total
Flake Tools											
Utilized Flake	16[a]	4			2					1	23
Retouched Flake	4	1									5
Unifacial Scraper		1									1
	21	5			2					1	29
Bifacial Tools											
Indeterminate Biface Fragment	53	3		3	2				7	1	69
Biface I	11	2							1		14
Biface II	23	4									27
Biface III	18	2							2	1	23
Biface IV	33	2		2				2	3		42
Biface V	37	2				1			1		41
Hafted Biface V	37			2					2		41
Projectile Point/Knife	40	1		2	3	1			1		48
Drill	5										5
Perforator	1										1
Subtotal	258	16		9	5	2		2	17	2	311
Other Tools											
Hammerstone	7	2	3				4			1	17
Site Total	286	23	3	9	7	2	4	2	19	2	357

[a]Number of pieces.

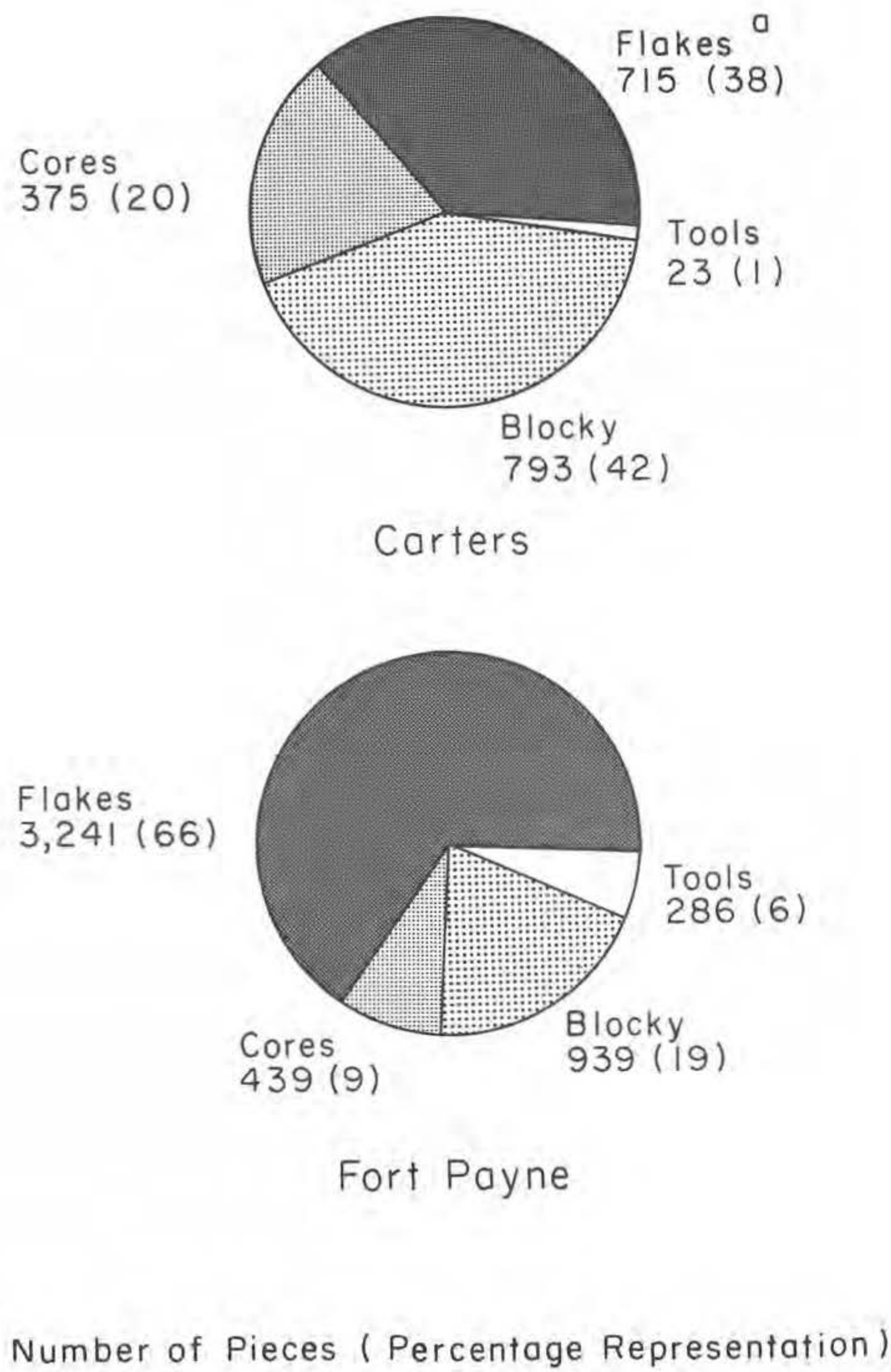

Figure 31. Proportional Comparison of Carters Chert and Fort Payne Chert Debris and Tool Classes.

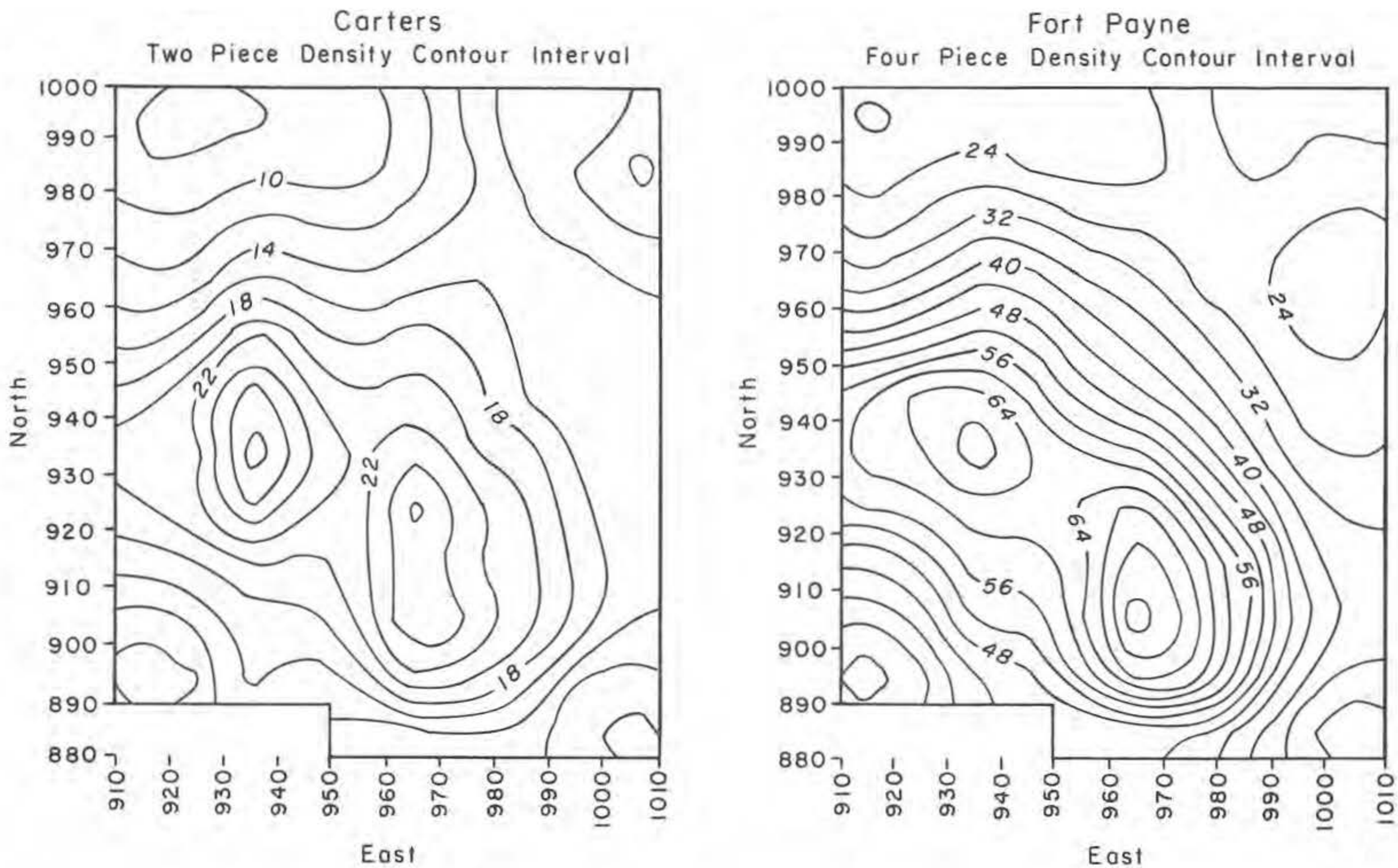

Figure 32. Controlled Surface Collection Density of Carters Chert and Fort Payne Chert Debitage.

Table 5. Chert Debris and Tools by Test Unit and Level.

Test Unit and Level	Flake Debris	Core Fragments	Incipient Cores	Blocky Debris	Unmodified Debris	Tools
Test Unit 1: 920 N, 949 E						
Level 1	128 (80.00)[a]		3 (167.40)	11 (100.80)	3 (4.00)	
Level 2	105 (47.00)		1 (19.70)	7 (41.85)		
Subtotal	233 (127.00)		4 (187.10)	18 (142.65)	3 (4.00)	
Test Unit 2: 940 N, 949 E						
Level 1	109 (63.60)			6 (81.15)	2 (1.35)	
Level 2	191 133.90)		1 (128.95)	13 (68.40)	8 (6.15)	1 (5.50)
Level 3	48 (27.00)		1 (20.50)	2 (9.40)	4 (3.40)	
Subtotal	348 (224.50)		2 (149.45)	21 (158.95)	12 (9.55)	3 (6.85)
Test Unit 3: 960 N, 949 E						
Level 1	95 (63.35)	1 (51.00)		5 (130.50)	3 (21.10)	1 (2.20)
Level 2	107 (70.50)		2 (43.60)	5 (31.40)		2 (13.45)
Level 3	41 (47.80)			4 (59.00)		1 (10.40)
Subtotal	243 (181.65)	1 (51.00)	2 (43.60)	14 (220.90)	3 (21.10)	4 (26.05)
Test Unit 4: 980 N, 949 E						
Level 1	21 (17.15)			1 (2.70)	3 (47.75)	
Level 2	23 (22.20)			3 (16.70)	2 (6.80)	
Level 3	1 (0.60)					
Subtotal	45 (39.95)			4 (19.40)	5 (54.55)	
Site Total	869 (573.10)	1 (51.00)	8 (380.15)	57 (541.90)	23 (89.20)	7 (32.90)

[a] Number of pieces (weight in grams).

Table 6. Lithic Debris and Tools by Feature.

Feature Number	Chert Debitage	Lithic Tools	Unmodified Chert	Limestone	Shale	Sandstone	Limonite/ Hematite	Galena
				Medium (Class 2) Pits				
11	191 (302.55)[a]	3 (8.80)	24 (14.70)	32 (1,191.20)		1 (6.10)		
14	488 (995.85)	4 (36.80)	76 (133.45)					
17	502 (766.35)	5 (18.70)	132 (157.30)			1 (3.30)		
20	137 (232.90)		17 (33.75)	8 (278.40)				
24	319 (380.35)	3 (53.20)	30 (26.25)					
29	450 (698.85)	7 (173.50)	61 (53.80)	45 (28,361.70)		1 (3.20)		
33	148 (369.90)		33 (31.80)					
42	510 (738.15)	4 (36.60)	30 (90.35)	43 (56,660.80)	3 (0.70)	4 (34.20)		
45	844 (1,978.40)	6 (55.00)	56 (47.55)					
47	674 (1,637.80)	1 (4.50)	97 (136.60)	1 (1.00)	15 (5.10)			
58	613 (1,567.60)	2 (7.60)	61 (15.00)	3 (0.60)			8 (17.20)	
63	332 (784.45)	3 (15.70)	15 (34.25)					
65	258 (218.00)		12 (5.70)					
72	106 (532.15)		21 (22.60)					
Subtotal	5,572(11,203.30)	38 (410.40)	665 (803.10)	132 (86,493.70)	18 (5.80)	7 (46.80)	8 (17.20)	
				Shallow (Class 3) Pits				
1	25 (21.40)							
2	42 (16.60)		5 (10.50)					
3	69 (66.10)		31 (36.30)	1 (4.80)				
4	228 (471.00)	3 (1.40)	20 (72.35)	3 (0.70)			2 (8.80)	
5	201 (614.85)	1 (2.00)	12 (9.05)	4 (80.80)				
6	10 (2.85)		4 (1.20)					
7	92 (136.05)	1 (9.35)	6 (15.75)					
10	121 (360.45)	2 (9.00)	24 (34.00)					
12	38 (65.95)		4 (9.50)	16 (210.90)				

Table 6. (continued).

Feature Number	Chert Debitage	Lithic Tools	Unmodified Chert	Limestone	Shale	Sandstone	Limonite/ Hematite	Galena
				Shallow (Class 3) Pits				
16	269 (870.30)		44 (50.70)	1 (1.70)		1 (13.60)	1 (12.20)	
18	163 (643.05)		17 (37.95)					
19	4 (0.90)		3 (1.15)					
22	12 (38.45)			1 (231.50)				
23	78 (110.00)		9 (24.15)					
25	168 (323.10)	2 (20.45)	11 (26.45)					
27	3 (1.80)		6 (6.45)					
30	52 (36.15)	1 (0.15)	1 (0.90)					
32	17 (7.20)		1 (1.30)					
34	2 (0.35)		1 (0.80)					
35	52 (85.40)	1 (12.95)	12 (8.60)	1 (1.10)		1 (1.70)		
36	33 (11.05)		7 (4.15)					
38	42 (45.30)		25 (17.65)					
40	158 (433.70)	2 (29.30)	13 (6.55)					
43	162 (147.30)		17 (28.00)	2 (12.60)				1 (12.30)
44	48 (29.35)		2 (4.60)					
48	84 (157.80)		15 (12.60)	1 (15.90)				
52	47 (51.60)		5 (1.60)					
53	17 (28.10)		5 (5.05)					
54	40 (34.50)	2 (24.25)						
55	143 (426.00)	1 (2.80)	6 (4.85)					
56	220 (366.30)	4 (56.75)	29 (64.10)					
57	234 (469.95)	6 (63.40)	9 (4.60)					
59	55 (147.45)	1 (17.25)	2 (1.10)					
60	234 (267.20)	1 (6.10)	44 (52.75)			1 (8.60)		
61	89 (143.70)		11 (13.65)					
62	22 (29.45)		2 (0.75)					
66	8 (3.75)				1 (1.20)			
68	25 (65.80)		7 (7.75)					

Table 6. (continued).

Feature Number	Chert Debitage	Lithic Tools	Unmodified Chert	Limestone	Shale	Sandstone	Limonite/ Hematite	Galena
				Shallow (Class 3) Pits				
69	148 (376.45)	2 (29.20)	5 (4.30)					
70	5 (2.40)		17 (21.90)					
71	2 (76.75)		2 (2.30)					
Subtotal	3,462 (7,185.85)	30 (284.35)	434 (605.35)	30 (560.00)	1 (1.20)	3 (23.90)	3 (21.00)	1 (12.30)
				Large Shallow (Class 4) Pit				
28	154 (562.15)		34 (40.35)	1 (0.50)				
				Large (Class 5) Pit				
15	842 (1,024.50)	5 (32.45)	79 (64.70)	31 (309.30)		4(622.30)		
Site Total	10,030(19,975.80)	73 (727.20)	1,212(1,513.50)	194 (87,363.50)	19 (7.00)	14(693.00)	11 (38.20)	1 (12.30)

[a] Number of pieces (weight in grams).

Feature Context Lithic Debris and Tools

Excavation of 57 pit features recovered 10,030 (19,975.8 g) pieces of lithic debitage, 73 (727.2 g) tools or fragments, 1,212 (1,513.5 g) pieces of unmodified chert, 194 (87,363.5 g) pieces of limestone, 19 (7.0 g) pieces of shale, 14 (693.0 g) pieces of sandstone, 11 (38.2 g) pieces of limonite/hematite, and 1 (12.3 g) piece of galena. This material is summarized by feature class, feature number, and gross debris type in Table 6.

The medium (Class 2) pits contained the greatest concentration of chert debitage. The 14 Class 2 pits, representing 24% of all pit features, contained over 55% of the chert debitage and 99% of the limestone by weight. Two of the Class 2 features (F 29 and 42) contained 97% of the limestone material. The cultural affiliation of many of these Class 2 pits is early Middle Woodland Neel phase or Indeterminate Middle Woodland. The single large (Class 5) pit also contains a large concentration of chert debitage and is classified as a Neel phase/McFarland phase feature.

The feature context material is dominated by Fort Payne and Carters chert with a significant quantity of unmodified residual chert pebbles and chunky debris. The unmodified chert debris from feature contexts represents 12% of all lithic material compared to only 4% for material derived from the surface collection.

Twenty-three diagnostic projectile points/knives were recovered from feature contexts. These are described below in context of the temporal sequence represented at the Aenon Creek site.

Temporal Sequence of Diagnostic Projectile Points/Knives

Identification of diagnostic point clusters and types was used as a temporal discriminator in the Aenon Creek site lithic material. Cluster and type definitions and identification were based on published descriptions and type collections in The University of Tennessee, McClung Museum and Department of Anthropology. The primary sources for this typology are Kneberg (1956, 1957) and Faulkner and McCollough (1973). Radiocarbon dated time estimations for the temporal and cultural phases were derived principally from Fogarty et al. (1986:21-37) and Bentz (1988b:85-90). A summary of the metric attributes for the diagnostic types identified in this analysis is presented in Table 7. Eighty-one diagnostic points were identified from the Aenon Creek site representing 14 types. The Late Archaic Benton and Ledbetter clusters and early Middle Woodland McFarland cluster are the most common point clusters identified at the site. Forty-eight of the points were recovered during the controlled surface collection. A single point was recovered from excavation of test units and eleven points were recovered during the mechanical stripping of the plowzone or in

Table 7. Metric Attributes of Diagnostic Projectile Point/Knife Types.

Attribute	Range	Mean	SD[a]	n
	Medium Side-notched (Big Sandy)			
Length[b]	30.8-59.9	47.9	9.1	3
Width	22.4-28.6	25.4	2.5	4
Thickness	7.8-9.3	8.3	0.4	4
Stem Length	10.7-11.8	11.2	0.3	4
Stem Width-Neck	15.7-22.1	18.7	2.4	4
Stem Width-Base	25.0-31.6	27.6	2.9	3
Weight	6.5-15.2	10.6	3.6	3
	Medium Short Stem (Sykes-White Springs)			
Length	40.4-66.8	50.0	10.7	4
Width	22.9-31.7	28.5	3.4	4
Thickness	7.3-8.8	8.0	0.4	5
Stem Length	5.6-7.6	6.8	0.6	5
Stem Width-Neck	15.7-21.4	18.5	2.1	5
Stem Width-Base	20.4-23.9	22.5	1.5	3
Weight	12.6-13.1	12.9	0.3	2
	Large Short Stem, Bevelled Base (Benton)			
Length	64.7-117.8	94.9	22.3	3
Width	29.7-48.5	38.7	5.2	15
Thickness	7.9-11.7	9.8	1.0	18
Stem Length	6.5-12.0	9.8	1.5	18
Stem Width-Neck	20.0-30.1	24.1	3.0	15
Stem Width-Base	18.0-35.5	25.6	5.3	10
Weight	26.0-46.3	36.2	10.2	2
	Large Expanded Stem, Barbed (Pickwick Ledbetter)			
Length				
Width	39.3-39.8	39.6	0.3	2
Thickness	9.0-13.1	10.7	1.4	5
Stem Length	12.1-13.4	12.7	0.6	4
Stem Width-Neck	14.9-17.8	16.2	1.0	5
Stem Width-Base	17.3-17.5	17.4	0.1	2
Weight				

Table 7. (continued).

Attribute	Range	Mean	SD[a]	n
Large Straight Stem ("Classic" Ledbetter)				
Length	72.4			1
Width	28.2-39.2	33.2	3.3	6
Thickness	8.8-12.6	10.4	1.4	8
Stem Length	11.2-15.5	13.1	1.2	8
Stem Width-Neck	16.7-19.7	18.0	1.1	8
Stem Width-Base	15.3-19.1	17.2	1.3	8
Weight	23.4			1
Large Contracting Stem (Contracting Stem Ledbetter)				
Length				
Width	33.6-41.5	36.7	2.7	6
Thickness	9.0-16.2	12.0	2.2	8
Stem Length	9.7-14.8	12.3	1.8	8
Stem Width-Neck	17.1-24.2	20.7	2.4	7
Stem Width-Base	13.3-19.0	15.5	1.7	6
Weight				
Medium Expanded Stem, Barbed (Wade)				
Length				
Width	29.7			1
Thickness	6.1-7.6	7.0	0.6	3
Stem Length	11.3-14.0	13.1	1.2	3
Stem Width-Neck	13.9			1
Stem Width-Base	15.7-20.4	18.1	2.3	2
Weight				
Medium-large Expanded Stem, Barbed (Wade/Motley)				
Length	69.1			1
Width	29.4-37.0	34.2	3.2	3
Thickness	7.9-8.9	8.3	0.4	3
Stem Length	11.5-12.4	12.0	0.4	3
Stem Width-Neck	12.5-17.0	14.4	1.8	3
Stem Width-Base	14.9-20.0	16.8	2.3	3
Weight	15.5			1

Table 7. (continued).

Attribute	Range	Mean	SD[a]	n
Medium Stemmed, Rounded Base (Adena Rounded-base)				
Length	46.5-56.6	51.5	5.0	2
Width	21.8-36.0	27.7	4.8	5
Thickness	7.9-11.5	9.7	1.2	7
Stem Length	8.9-15.0	12.3	2.4	7
Stem Width-Neck	13.6-19.6	16.7	1.9	7
Stem Width-Base	11.2-16.4	14.1	1.8	7
Weight	10.6-12.3	11.4	0.8	2
Medium-large Triangular, Recurvate Blade (Nolichucky)				
Length	47.8-52.7	51.0	2.0	3
Width	21.9-25.6	23.3	1.5	3
Thickness	7.3-8.1	7.5	0.2	4
Weight	7.9-8.2	8.1	0.2	2
Medium-large Triangular, Straight Blade (Camp Creek)				
Length				
Width	23.8-31.5	27.2	2.9	5
Thickness	7.2-10.2	8.8	1.0	5
Weight				
Medium Triangular, Straight Blade (Connestee Triangular)				
Length	30.6-42.9	34.8	4.9	4
Width	18.7-26.5	21.7	2.5	9
Thickness	6.2-8.2	7.5	0.6	9
Weight	4.1-6.6	5.1	0.8	4
Medium-large Lanceolate, Expanded Stem (Bakers Creek)				
Length				
Width	28.0			1
Thickness	8.7			1
Stem Length	13.3			1
Stem Width-Neck	21.0			1
Stem Width-Base	24.6			1
Weight				

Table 7. (continued).

Attribute	Range	Mean	SD[a]	n
	Small Triangular, Corner-notched (Jack's Reef)			
Length				
Width				
Thickness	5.3			1
Stem Length				
Stem Width-Neck				
Stem Width-Base				
Weight				

[a] Standard deviation.

[b] Dimensional attributes in millimeters and weights in grams.

the back dirt. Twenty-one points were recovered in feature context. The diagnostic types are presented below referent to their temporal significance.

Early Archaic-Middle Archaic. Ephemeral Early and Middle Archaic occupation of the Aenon Creek site is represented by two diagnostic point clusters, Big Sandy and Sykes-White Springs. Four medium side-notched points (Figure 33A) resembling the Big Sandy cluster were identified in the surface collection and plowzone stripping. This point cluster is tentatively identified as emergent transitional Paleoindian-Early Archaic. Three are made of Fort Payne chert and one is made of St. Louis chert. Medium short stem Sykes-White Springs cluster points (Figure 33B) have some characteristics common to Benton cluster points but are distinct based on overall size and lack of the well beveled base. Five Sykes-White Springs cluster points were identified at the Aenon Creek site. Three of these are from feature context (F 45 and 56), one from the surface collection, and one from the plowzone stripping. Material manufacture includes two Fort Payne, one Brassfield, one Carters, and one indeterminate chert.

Late Archaic. The Late Archaic period is well represented at the Aenon Creek site based on numbers of diagnostic projectile points. Late Archaic period projectile points/knives include the Benton and Ledbetter clusters. Benton cluster points date earlier (5800-4600 B.P.) and Ledbetter cluster points date slightly later (5500-2800 B.P.) but considerable overlap occurs in these time spans.

Large short stem, beveled base or Benton cluster points (Figure 34) are well known in Tennessee prehistory, first defined by Kneberg (1956). The characteristically large (often resharpened) blade, short (corner-removed) stem, and incurvate to straight well beveled base are identifying characteristics. Nine Benton cluster points were collected from the surface, five were found during plowzone removal, and four are from feature context (F 14, 45, and 57). Fort Payne chert is the most common material, one is made of St. Louis, and two are of an indeterminate chert. Three show evidence of heat alteration prior to final modification and two have been reworked or resharpened.

The Ledbetter cluster points are all similar in that they are large stemmed points sometimes referred to as "undifferentiated stem." Three morphological variants of the Ledbetter cluster were identified: large expanded stem, slightly barbed (Pickwick) (Figure 35A), large straight stem asymmetrical blade ("classic") (Figure 35B), and large contracting stem (Figure 35C). Six Pickwick type Ledbetter points were identified, five in the surface collection and one from Feature 29. Four of these are made of Fort Payne chert and two are made of Carters chert. Eight straight stem or "classic" type Ledbetter points were identified. Seven of these were made in the surface collection and one is from Feature 24. All are made of Fort Payne chert except one of Brassfield chert. Eight contracting stem type Ledbetter points were identified; four in the surface collection, two from the plowzone stripping, and one each from Feature 5 and Feature

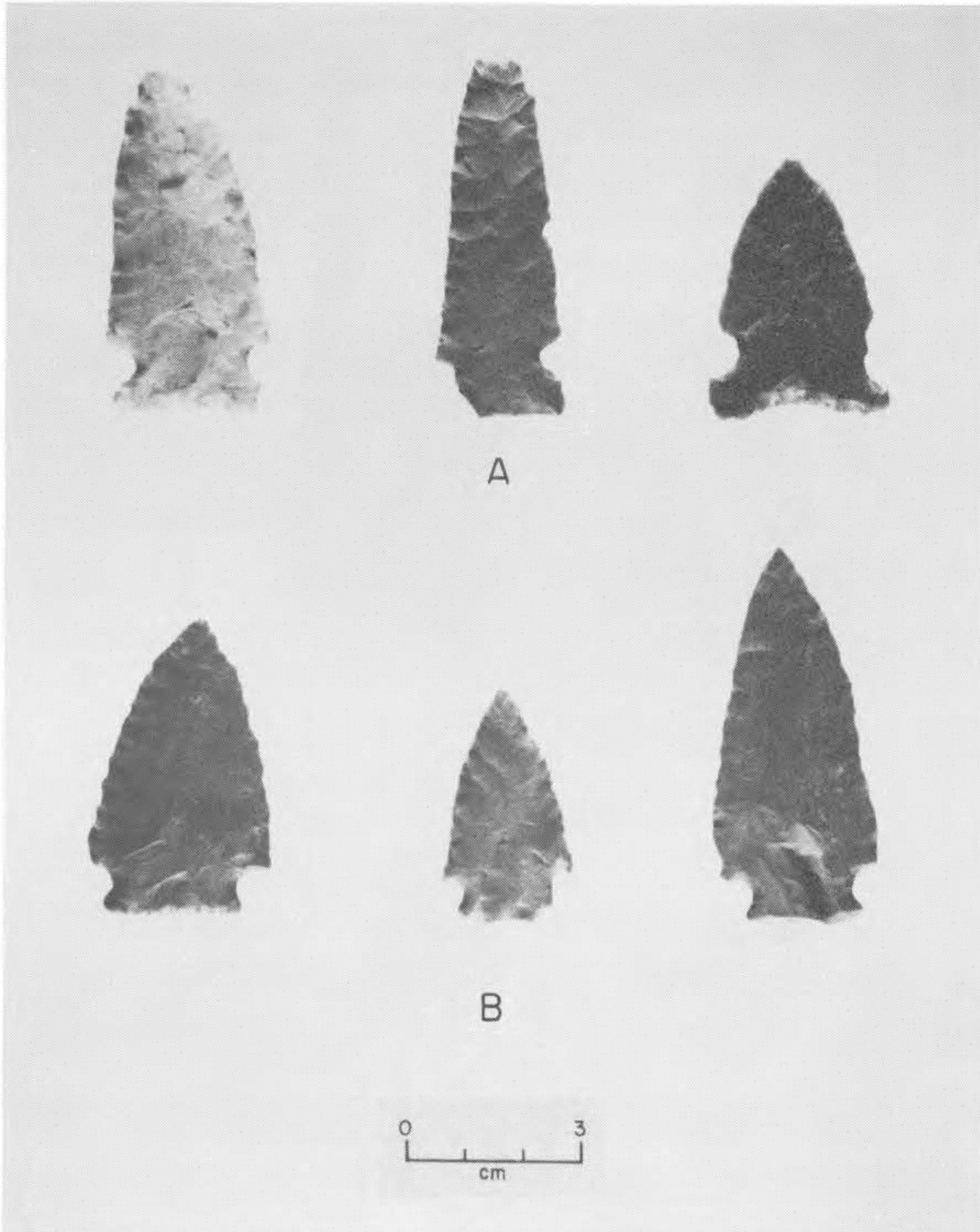

Figure 33. Early Archaic Big Sandy Cluster and Middle Archaic Sykes-White Springs Cluster Projectile Points/Knives. A-Big Sandy Cluster; B-Sykes-White Springs Cluster.

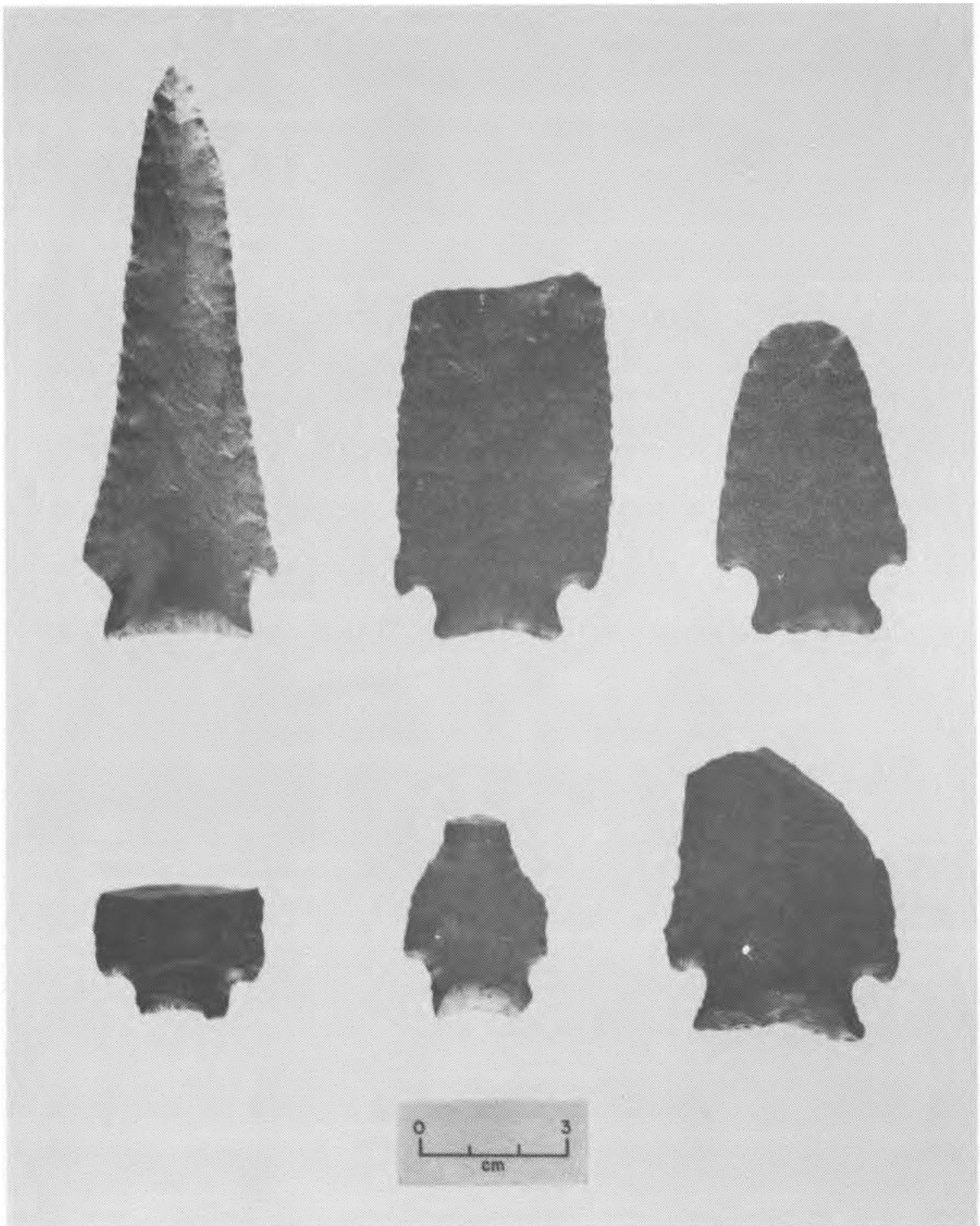

Figure 34. Late Archaic Benton Cluster Projectile Points/Knives.

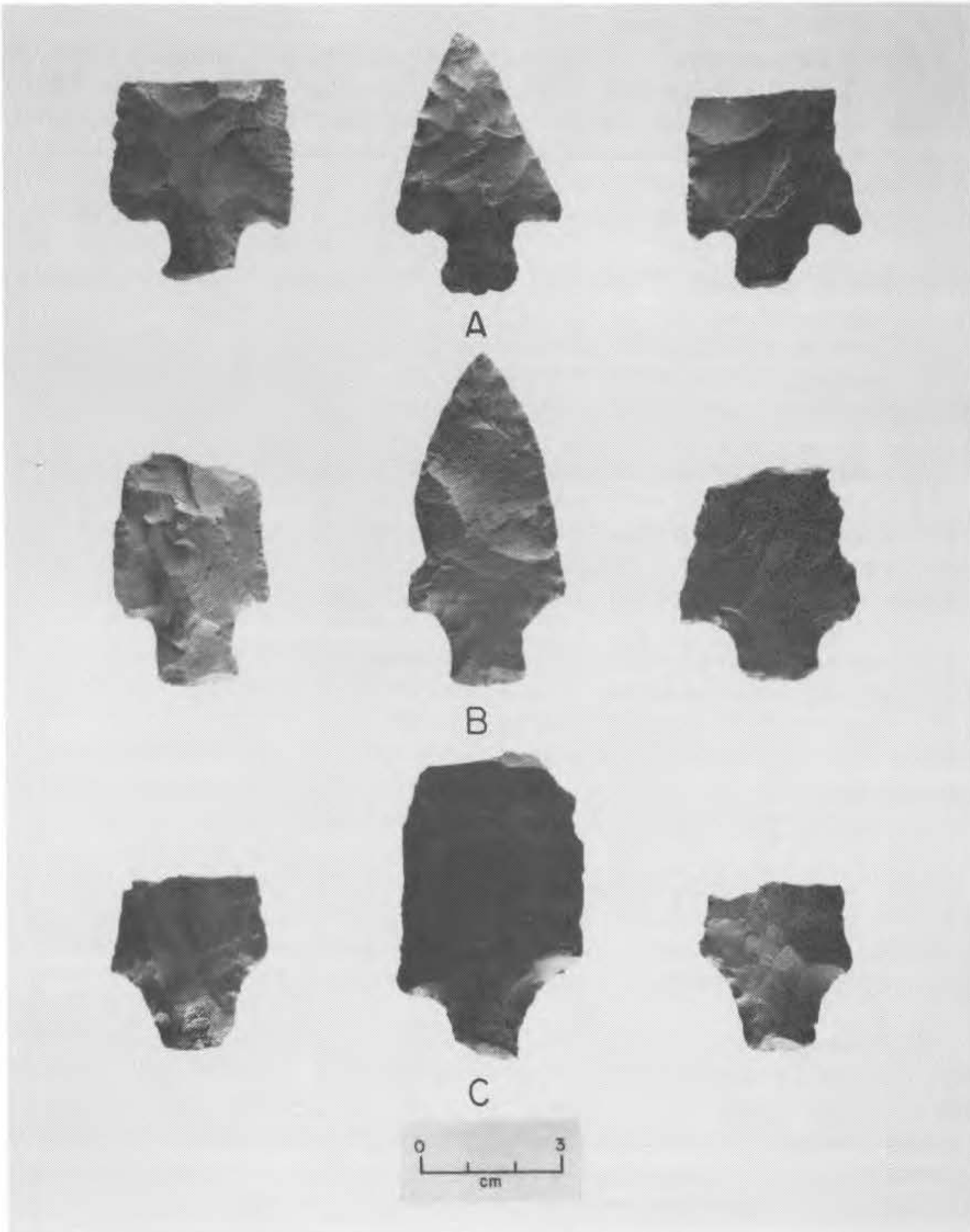

Figure 35. Late Archaic Ledbetter Cluster Projectile Points/Knives. A-Pickwick Type; B-"Classic" Type; C-Contracting Stem Type.

40. All of the contracting stem variants are made of Fort Payne chert.

Terminal Late Archaic. A projectile point/knife cluster of this period is the Wade cluster (Faulkner and McCollough 1973:149). A date range of 3100 to 2400 B.P. is inferred. Two morphological variants are differentiated. Medium expanded stem, barbed type points (Figure 36A) are referent to the classic wide blade Wade form (Faulkner and McCollough 1973:109). Three Wade type points were recovered during the surface collection. Two are made of Fort Payne chert and one is made of St. Louis chert. A second morphological variant, medium-large expanded stem, barbed points (Figure 36B), is referable to Wade/Motley type points. The principal difference between the Wade type and Wade/Motley type is that the blade of the latter is narrower and longer. Three Wade/Motley type points were recovered, one each from Features 15 and 69 and one from the controlled surface collection. Two of these points are made of Fort Payne chert and one is of an indeterminate chert.

Early Woodland-Middle Woodland. A projectile point/knife cluster diagnostic of the Early Woodland period is the Adena-like Rounded-base cluster. The McFarland cluster is diagnostic of the late Early Woodland and early Middle Woodland. The Lanceolate Expanded Stem cluster is diagnostic of the Middle Woodland period (Faulkner and McCollough 1973). These periods date between 2500-1300 B.P.

The medium stemmed, rounded-base point cluster (Figure 36C) has been referred to as Adena-like and is considered to be a terminal Late Archaic-Early Woodland form by Faulkner and McCollough (1973:150). A date range of 3000 to 2000 B.P. is inferred. Five Rounded-base cluster points were collected from the surface and one was recovered from Test Unit 3. All are made of Fort Payne chert, two have evidence of heat treatment, and basal grinding is evident on four specimens.

The medium to large triangular point tradition commonly referred to as the McFarland cluster (Faulkner and McCollough 1973:146) encompasses a range of Early to Middle Woodland types. These triangular points are grouped into three morphological variants based on their similarity to previously named types.

Medium-large triangular, recurvate blade points (Figure 37A) are referable to the Early Woodland Nolichucky type of East Tennessee (Kneberg 1956, 1957) that may date from 2500 to 2000 B.P. Incurvate to straight ground bases are characteristic of this type. Two of the triangular recurvate blade points are from the surface collection and one each is from Feature 29 and Feature 54. Two Nolichucky points are made of Fort Payne, one of Brassfield, and one is of an indeterminate chert.

Medium-large triangular, straight blade points (Figure 37B) are referable to the Camp Creek type of East Tennessee (Kneberg 1956, 1957). These appear to have the same chronological association with the Early Woodland as the Nolichucky type. Camp

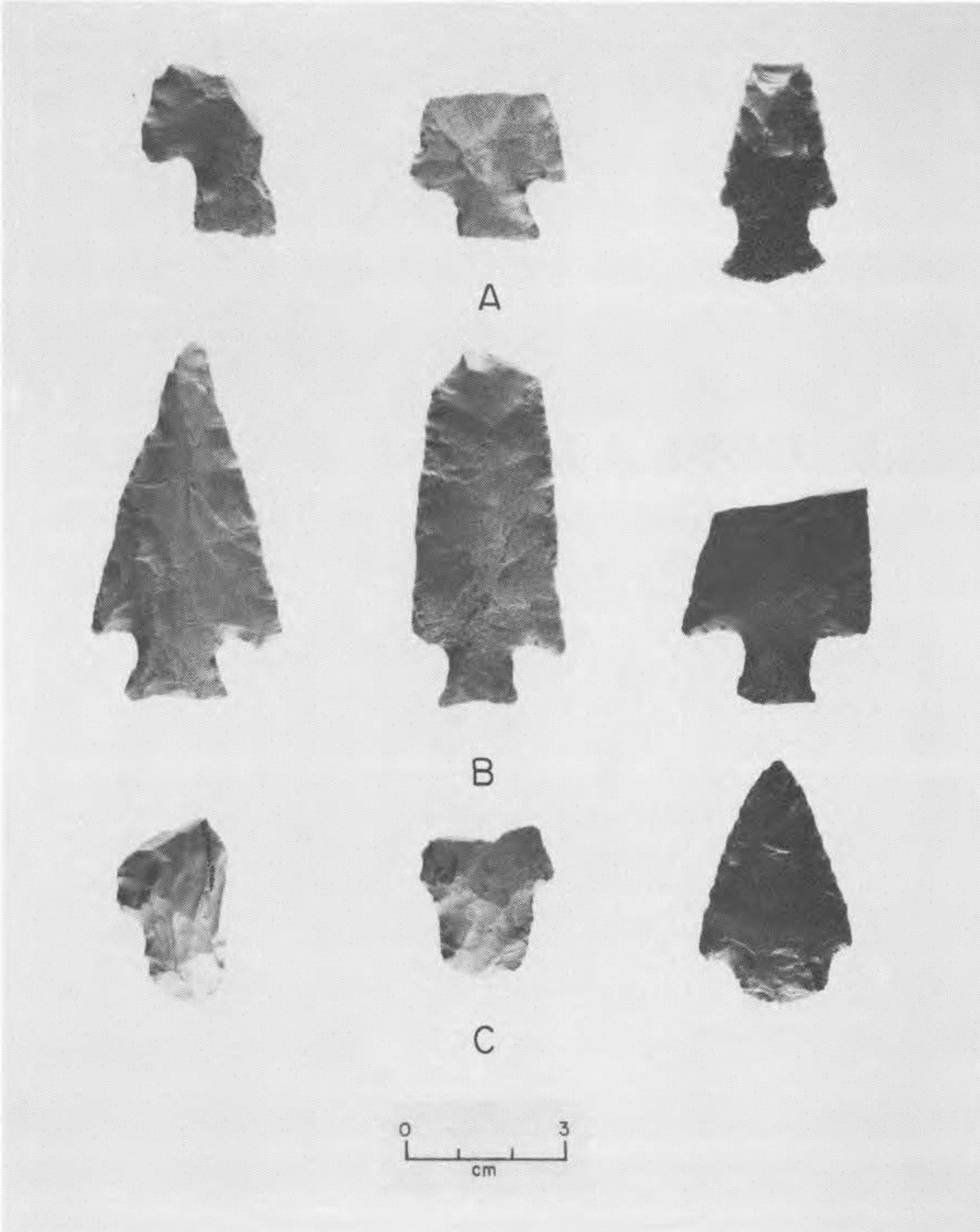

Figure 36. Terminal Late Archaic Wade Cluster and Early Woodland Rounded-base Cluster Projectile Points/Knives. Wade Cluster, A-Wade Type, B-Wade-Motley Type; C-Rounded-base Cluster.

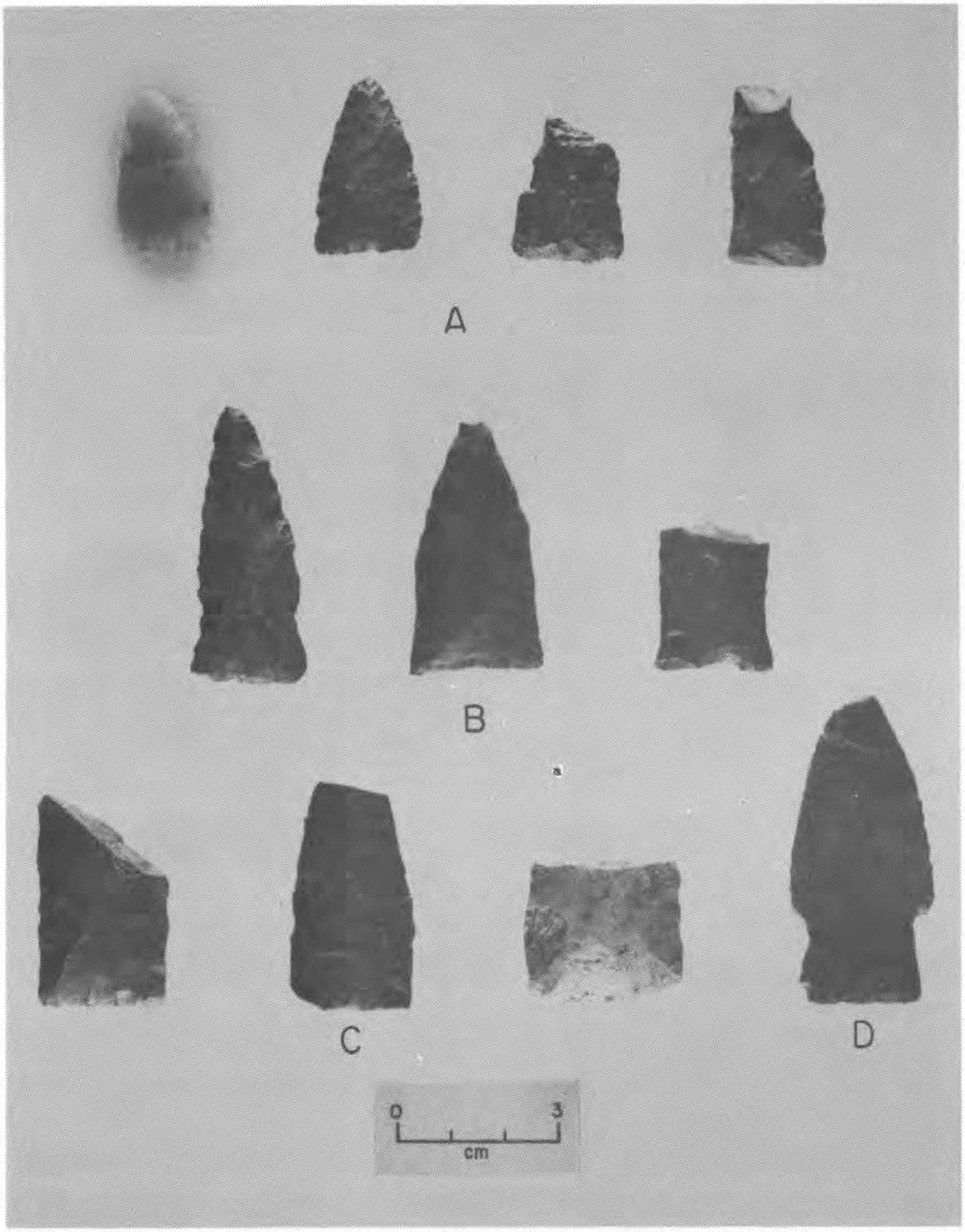

Figure 37. Early and Middle Woodland McFarland Cluster and Middle Woodland Lanceolate Expanded Stem Cluster Projectile Points/Knives. McFarland Cluster, A-Nolichucky Type, B-Camp Creek Type, C-Connestee Triangular Type; Lanceolate Expanded Stem Cluster, D-Bakers Creek Type.

Medium-large triangular, straight blade points (Figure 37B) are referable to the Camp Creek type of East Tennessee (Kneberg 1956, 1957). These appear to have the same chronological association with the Early Woodland as the Nolichucky type. Camp Creek is differentiated from Kneberg's Nolichucky type in that the blade is straight to slightly excurvate. Camp Creek is differentiated from Kneberg's Greenville type in that the base is straight to slightly excurvate. Basal grinding is characteristic. Five triangular straight blade type points were recovered from feature context (F 7, 14, 17, 29, and 57). None were found during the surface collection. Four of these points are made of Fort Payne chert and one is made of Carters chert.

The medium triangular, straight blade points (Figure 37C) are referable to the Connestee Triangular type of eastern Tennessee and western North Carolina (Keel 1976). This type appears to be associated with Middle Woodland contexts. A maximum date range of 2000 to 1300 B.P. is suggested. Eight medium triangular type points were recovered during the surface collection and one was found during the plowzone stripping. All points are made of Fort Payne chert with the exception of one point made of milky quartz.

A single distinct Bakers Creek type point of the Lanceolate Expanded Stem cluster was recovered from Feature 29 (Figure 37D). This medium-large lanceolate, expanded stem point appears to be associated with the Middle Woodland Copena complex of northern Alabama (DeJarnette et al. 1962). Faulkner and McCollough (1973:100) suggest a Middle Woodland context for this point type in the Upper Duck River.

Late Woodland-Early Mississippian. A single small triangular, corner-notched projectile point was recovered in the surface collection. This form is comparable to the Jack's Reef corner-notched type and is not assigned to a point cluster (Cambron and Hulse 1975:68). This point is made of St. Louis chert. It appears to be a common but never abundant Late Woodland-Early Mississippian type that may date from 1300 to 750 B.P. The lack of any other diagnostic material from these periods indicates at the most a very ephemeral Late Woodland or Early Mississippian occupation of the Aenon Creek site.

Diagnostic Projectile Point/Knife Types in Feature Context

The 21 diagnostic projectile points/knives identified in feature context provide some measure of time period for the construction and use of these features (Table 8). Because of their nature of construction, excavation of pits into the subsurface, incorporation of material from earlier occupations on the site into later features should be expected. Many factors weigh into the assigning of cultural or temporal affiliation to feature use.

Table 8. Projectile Point/Knife Clusters from Feature Context.

Feature Number	Projectile Point/ Knife Cluster	Cultural Affiliation
	Medium (Class 2) Pits	
14	Benton, McFarland	Mixed
17	McFarland	Early Middle Woodland
24	Ledbetter	Late Archaic
29	Ledbetter, McFarland, Lanceolate Expanded Stem	Mixed
45	Sykes-White Springs, Benton	Mixed
	Shallow (Class 3) Pits	
5	Ledbetter	Late Archaic
7	McFarland	Early Middle Woodland
40	Ledbetter	Late Archaic
54	McFarland	Early Middle Woodland
56	Sykes-White Springs	Middle Archaic
57	Benton, McFarland	Mixed
69	Wade	Terminal Archaic
	Large (Class 5) Pit	
15	Wade	Terminal Archaic

CHAPTER VI

PREHISTORIC CERAMICS

Charles Bentz, Jr.

The prehistoric ceramics from the Aenon Creek site were initially classified and quantified by the tempering agent and surface treatments. Temper characteristics and sherd thicknesses were then described. The surfaces and cores of the sherds were color coded with the *Munsell Soil Color Charts* (1973). To simplify the color coding system, the various hues, values, and chromas of a color were combined and only the verbal description of the color was noted. Ceramic weights were used in the comparison of various pottery types.

A total of 421 (745.0 g) sherds was recovered from 15 prehistoric pit features, 1 historic pit feature, and 2 treefall depressions. Nearly three-fourths (70.9%) of the ceramics by weight was contained in one early Middle Woodland Neel phase medium (Class 2) pit (F 29). All of the ceramic assemblage is limestone tempered and surface treatments are plain, cordmarked, fabric impressed, check stamped, and indeterminate (Table 9).

LIMESTONE TEMPERED CERAMICS

Mulberry Creek Plain

Approximately one-fourth (25.5%) of the pottery with identifiable surface treatments, including one small rim sherd, is limestone tempered and has plain exteriors (Figure 38A). The rim has an indeterminate form and the lip is rounded and tapers. The Mulberry Creek Plain sherds in cross-section exhibit per cm^2 2-13 temper particles or casts of the particles measuring 1-2 mm in size and 10-28 temper particles or casts less than 0.5 mm in diameter. The sherd thicknesses generally range from 7-10 mm. The exterior sherd surfaces are red, pink, brown, reddish-brown, reddish-gray, and gray in color. The interior sherd surfaces are pink, brown, and gray and the sherd cores are red, pink, brown, reddish-brown, and gray in color.

Flint River Cordmarked

Nearly one-fourth (22.3%) of the pottery with identifiable surface treatments, including four rim sherds, is limestone tempered and has exterior surfaces marked by a cordwrapped paddle (Figure 38B). The cordage twist was indeterminate. The cord impressions measure 0.5-2.5 mm in diameter and are spaced 1.0-4.5 mm apart. Vessel orifice sections have incurving necks and vertical or everted rims. Vessel lips are rounded to slightly flattened. During vessel manufacture cord impressions were

Table 9. Prehistoric Ceramics.

Feature Number	Surface Treatment[a]					
	Plain	Cordmarked	Fabric Impressed	Check Stamped	Indeterminate	Total
			Medium (Class 2) Pits			
17	9 (25.0)b	5 (18.1)			28 (26.2)	42 (69.3)
24					1 (1.4)	1 (1.4)
29	12 (46.8)	29 (99.8)		71 (284.7)	167 (96.6)	279 (527.9)
45		1 (1.1)				1 (1.1)
47					1 (1.3)	1 (1.3)
65					9 (2.7)	9 (2.7)
Subtotal	21 (71.8)	35 (119.0)		71 (284.7)	206 (128.2)	333 (603.7)
			Shallow (Class 3) Pits			
7	2 (2.9)	1 (5.0)			6 (18.2)	9 (26.1)
30					1 (0.1)	1 (0.1)
32	15 (49.3)		1 (3.0)		11 (2.8)	27 (55.1)
43	2 (2.8)				1 (0.6)	3 (3.4)
44	1 (3.4)	1 (0.5)			3 (0.6)	5 (4.5)
52					4 (7.4)	4 (7.4)
54	1 (13.3)		2 (6.2)		4 (1.7)	7 (21.2)
60					3 (4.4)	3 (4.4)
61					1 (1.4)	1 (1.4)

Table 9. (continued).

Feature Number	Surface Treatment[a]					
	Plain	Cordmarked	Fabric Impressed	Check Stamped	Indeterminate	Total
			Shallow (Class 3) Pits			
Subtotal	21 (71.7)	2 (5.5)	3 (9.2)		34 (37.2)	60 (123.6)
			Large (Class 5) Pit			
15					17 (10.0)	17 (10.0)
			Tree Disturbances			
39					9 (5.8)	9 (5.8)
67		1 (0.7)			1 (1.2)	2 (1.9)
Subtotal		1 (0.7)			10 (7.0)	11 (7.7)
Site Total	42 (143.5)	38 125.2)	3 (9.2)	71 (284.7)	267 (182.4)	421 (745.0)

[a] All surface treatments are limestone tempered.

[b] Number of pieces (weight in grams).

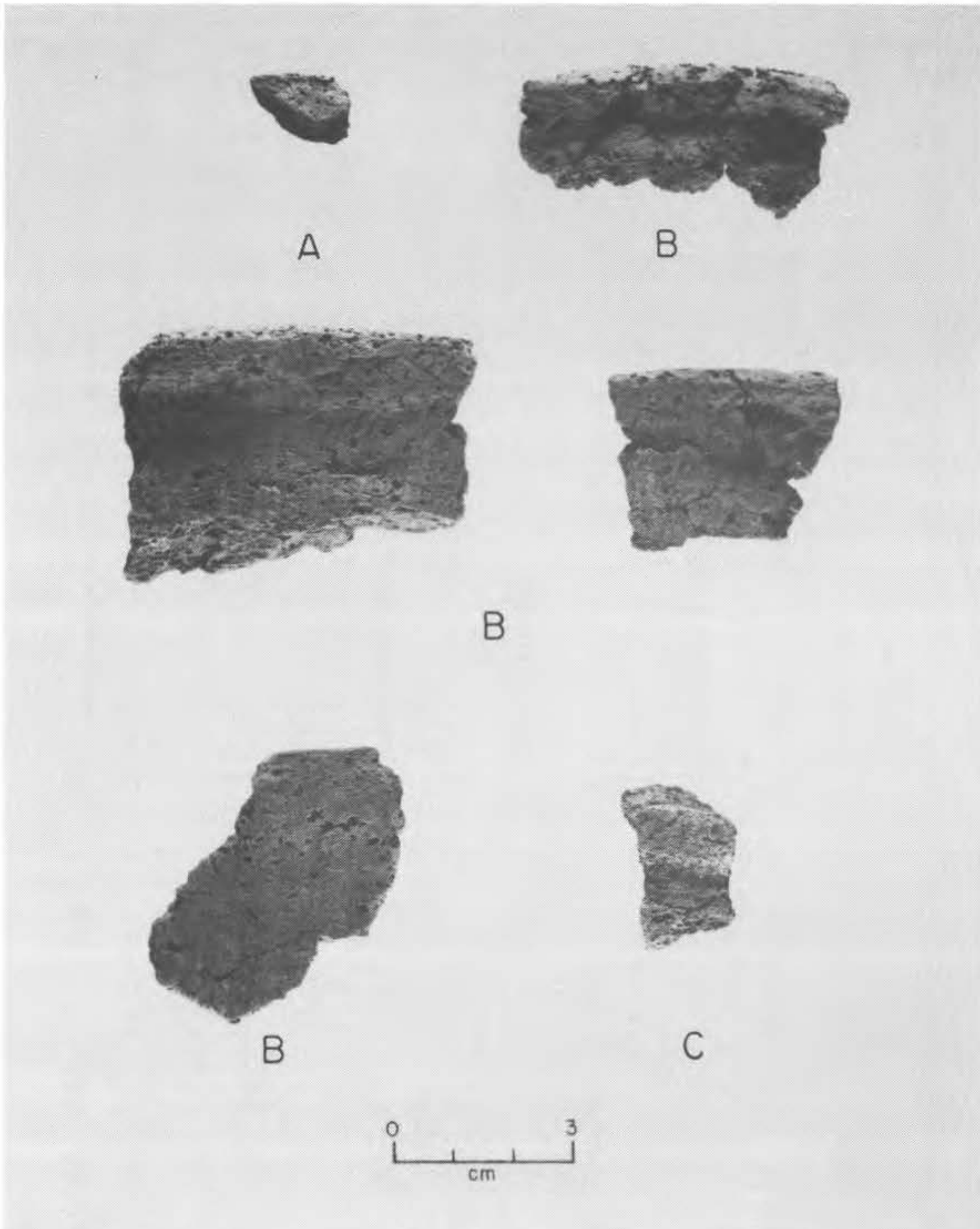

Figure 38. Limestone Tempered Plain, Cordmarked, and Fabric Impressed Ceramics. A-Mulberry Creek Plain; B-Flint River Cordmarked; C-Longbranch Fabric Impressed.

smoothed and nearly obliterated up to 3 cm below the lips of two rim sections. Two joinable cordmarked sherds broken along coil junctures indicate some flattened sections of clay forming vessel walls measured 15-21 mm in width. Flint River Cordmarked sherds in cross-section exhibit per cm^2 2-8 temper particles or casts of the particles measuring 1-2 mm in size and 15-26 temper particles or casts 0.5 mm or less in diameter. The sherd thicknesses generally range from 7-11 mm. The exterior sherd surfaces are brown and pinkish-gray in color. The interior sherd surfaces are gray and pinkish-gray in color and the sherd cores are red, reddish-brown, brown, gray, and pinkish-gray in color.

Wright Check Stamped

Approximately one-half (50.6%) of the pottery with identifiable surface treatments is limestone tempered and impressed with rectangular and square check patterns. All of the Wright Check Stamped pottery was recovered from the same pit feature (F 29). A check stamped vessel rim section that measured about 18 cm x 13 cm fragmented upon removal from the pit and comprises the majority of this ceramic type (Figure 39). The reconstructed vessel consists of two rim sections and numerous sherds. The vessel sections have incurving necks, vertical rims, and flattened lips folded slightly to the exterior. The inner orifice diameter of the vessel measured 34 cm and the reconstructed rim sections comprise 15% of the orifice. The exterior surface of this vessel is impressed with rectangular checks measuring 4-5 mm x 2-3 mm in size. The checks are spaced 2-3 mm apart in each row and the rows are spaced 2-4 mm apart. A second Wright Check Stamped vessel is probably represented by a single sherd impressed with slightly rounded and irregularly spaced square checks measuring 2-3 mm x 2-3 mm. The Wright Check Stamped sherds in cross-section exhibit per cm^2 5 temper particles or casts of the particles measuring 1 mm in size and 18 temper particles or casts 0.5 mm in diameter. The sherd thicknesses generally range from 7-11 mm. The exterior sherd surfaces are pink, brown, reddish-brown, and pinkish-gray in color. The interior sherd surfaces are brown and gray and the sherd cores are brown, reddish-yellow, and gray in color.

Longbranch Fabric Marked

Two body sherds (1.6%) with identifiable surface treatments are limestone tempered and have exterior surfaces impressed with a fabric wrapped wooden or cane paddle that left wicker-like impressions in the wet clay (Lafferty 1981:316-317; Walthall 1980:112) (Figure 38C). The fabric was of a plain plaited type with a close weft and a wide warp (Haag 1942:517; Heimlich 1952:17). A cordwrapped stick or paddle edge was also sometimes carefully applied to the vessel surface in imitation of the fabric impressions (Lewis and Kneberg 1946:85-87; Walthall 1980:112). The Longbranch Fabric Marked sherds in cross-section exhibit per cm^2 10 temper particles or casts of the particles measuring 1 mm in size and 16 temper particles or casts less than 0.5 mm in diameter. The sherd thicknesses range from 7-8 mm. The exterior sherd surfaces are pink, brown, and gray in color. The interior sherd surfaces and cores are pink and gray in color.

Figure 39. Limestone Tempered Check Stamped Ceramics. Wright Check Stamped.

Indeterminate

Approximately three-fourths (75.5%) of the ceramic assemblage has identifiable surface treatments while the remaining one-fourth (24.5%) is indeterminate and either lacks an exterior surface or is too small to accurately determine the surface treatment. The indeterminate sherds are limestone tempered and in cross-section exhibit per cm^2 3-20 temper particles or casts of the particles measuring 1 mm in size and 7-50 temper particles or casts less than 0.5 mm in diameter. A single sherd is tempered with limestone and angular quartz fragments and in cross-section exhibits per cm^2 eight temper particles or casts of limestone particles 1-2 mm in size. The exterior and interior sherd surfaces are brown, reddish-brown, and gray in color. The sherd cores are red, brown, reddish-brown, reddish-yellow, pinkish-gray, and gray in color.

CERAMIC CHRONOLOGY AND DISTRIBUTION

The prehistoric ceramics from the Aenon Creek site were separated into four limestone tempered types based on the surface treatments; plain, cordmarked, check stamped, and fabric impressed. These Middle Woodland ceramic forms are typical of the Neel and McFarland phases in the Elk and Duck River drainages of Middle Tennessee.

The early Middle Woodland Neel phase ceramics are predominantly limestone tempered plain (Mulberry Creek Plain), cordmarked (Flint River Cordmarked), check stamped (Wright Check Stamped), and fabric impressed (Longbranch Fabric Marked). Nonlocal Neel phase ceramics include limestone tempered red slipped over plain, red slipped over complicated stamped, and incised/punctated; sand tempered plain, incised, punctated, simple stamped, and rocker stamped over cordmarked; grog tempered oval rocker-dentate stamped and diamond and dot check stamped; and grit-grog tempered rocker stamped (Bacon 1982:179-180; Butler 1968:203-204, 1977:7, 12; Faulkner 1977:163-169).

The early Middle Woodland McFarland phase ceramics are predominantly limestone tempered plain (Mulberry Creek Plain), check stamped (Wright Check Stamped), and fabric impressed (Longbranch Fabric Marked). The fabric impressed pottery was carried over from the Early Woodland period and continued through the early McFarland phase but was replaced by check stamped pottery during the late McFarland phase. Additional limestone tempered ceramic types associated with the McFarland phase include simple stamped (Bluff Creek Simple Stamped), curvilinear complicated stamped (Pickwick Complicated Stamped), and some nonlocal red slipped pottery. Small quantities of mixed grit and limestone tempered ceramics were often recovered from McFarland contexts (Davis 1978:337, 407, 421; Faulkner and McCollough 1973:424, 1974:330-331, 576-577; Kline et al. 1982:4; Wagner 1982:485, 522).

Identifiable limestone tempered ceramic types were represented in 7 of the 15 prehistoric pit features, the historic pit feature, and a treefall depression containing pottery on the Aenon Creek site. Mulberry Creek Plain and Flint River Cordmarked ceramic types were found in three prehistoric pits (F 7, 17, and 44); Flint River Cordmarked was the only identifiable ceramic type found in one prehistoric pit (F 45) and a treefall depression (F 67); and Mulberry Creek Plain, Flint River Cordmarked, and Wright Check Stamped ceramic types were found in one pit (F 29). The five prehistoric features containing these ceramic types are assigned to the Neel phase because of the occurrence of Flint River Cordmarked ceramics along with Mulberry Creek Plain and Wright Check Stamped. Two prehistoric pits (F 32 and 54) that contained Mulberry Creek Plain and Longbranch Fabric Marked ceramics are classified as Neel phase/McFarland phase because of the occurrence of ceramic types representative of either phase. The historic pit (F 43) contained Mulberry Creek Plain ceramics. Nonlocal ceramics found in Neel phase and McFarland phase contexts were not present at the Aenon Creek site. The seven prehistoric pit features (F 24, 30, 47, 52, 60, 61, and 63) that contained indeterminate limestone tempered ceramics are classified as Indeterminate Middle Woodland. A prehistoric pit feature (F 15) that contained indeterminate limestone tempered ceramics is classified as Neel phase/McFarland phase on the basis of a radiocarbon date. A treefall depression (F 39) also contained only indeterminate limestone tempered ceramics. Prehistoric pit features that contained identifiable or indeterminate ceramics did not cluster in any area(s) of the site but the northeast quadrant of the site was generally devoid of pits with ceramics.

CHAPTER VII

HUMAN SKELETAL REMAINS

Susan Thurston Myster

During the Aenon Creek site investigations, a pit containing redeposited cremations was excavated in the southwest quadrant of the feature distribution. The cremations were secondarily deposited in a circular shallow (Class 3) pit (F 53) that measured 50 cm x 50 cm in plan view and 15 cm in depth. The burials have been assigned to the early Middle Woodland Neel phase occupation of the site. A predominant mortuary practice during this phase is cremation of the dead in specialized pits near a habitation site. Redeposition of the cremated remains is generally in small pits near house structures (Bentz 1986a).

SKELETAL INVENTORY

A majority of the skeletal remains exhibit evidence of burning and are less than one centimeter in size. It is clear that a significant proportion of the bone is definitely human. The taxonomic classification of the remaining bone is unknown; however, the morphology and texture are consistent with human bone. A positive classification is not possible due to the size of the fragments. Table 10 presents a summary of the recovered skeletal material.

Determination of minimum number of individuals (MNI) is based on a number of criteria. The most reliable criterion is duplication of skeletal elements. The presence of two right femora in a collection of skeletal material is a good indication that at least two individuals are represented. When no duplication of skeletal elements exists more than one individual may be discerned based on morphological differences such as age and sex characteristics.

The minimum number of individuals represented in the redeposited cremation is two. This determination is based on morphological differences. At least one subadult and one adult individual are present.

SKELETAL ANALYSIS

Sex Determination

Subadult sex determination. Numerous attempts have been made to develop an accurate method to determine the sex of immature skeletal remains; however, there has been little success to date. Therefore, sex determination of subadult skeletal material is considered inaccurate and unreliable at this time (Bass 1987; Krogman and

Table 10. Enumeration and Identification of Cremated Human Remains from Feature 53.

	Number of Pieces	Skeletal Element
	50	Cranial
	7	Tooth
	6	Inferior/superior articular facets of vertebrae
	156	Long bone
	7	Femur/humerus head
	5	Miscellaneous articular surfaces
	1	Proximal articular surface of 1st or middle row phalange
	1	Rib
	938	Miscellaneous
Total	1,171	

Iscan 1986; Ubelaker 1978).

Sex determination of the subadult individual in this sample was not possible.

Adult sex determination. The adult sex determination techniques applied today have been remarkably accurate in the assessment of sex for skeletal material from individuals of known gender. It is with confidence that these techniques are applied to prehistoric skeletal remains in order to determine the sex of an individual (Bass 1987; Black 1978; Krogman and Iscan 1986; Stewart 1979; Ubelaker 1978).

Sex determination of the adult individual in this sample was not possible due to the fragmentary nature of the skeletal material.

Age Determination

Subadult age determination. The age of the one subadult represented is based on epiphyseal union of the proximal end of a proximal or middle row phalange. Krogman and Iscan (1986) report that this epiphysis unites with the shaft between 15 and 16 years of age. Since there is only slight evidence of fusion remaining, it is likely this individual is near 16 years of age.

Adult age determination. There are a variety of techniques available for age determination of adult individuals (Bass 1987; Krogman and Iscan 1986; Stewart 1979; Ubelaker 1978). The fragmentary nature of the Aenon Creek adult individual precludes the application of the most reliable of these techniques, observation of the pubic symphysis morphology. Epiphyseal union was used to distinguish adult and subadult material but this technique is of little use after 25-28 years of age. Less precise methods such as degenerative changes on the vertebrae and dental attrition were applied. It must be stated from the outset, however, that these techniques are not very precise and that age estimates based on these are, to a great extent, population specific. Age of onset, tempo of development, and severity of degenerative changes and dental attrition are determined by the lifestyle and cultural practices of the population.

Due to the fragmentary nature of the adult skeletal material and the absence of the more precise age indicators, a specific age estimate cannot be determined. The morphology of the cranial and long bone fragments is consistent with that of an adult. The vertebrae fragments recovered exhibit no osteoarthritic lipping or articular facet destruction. According to Stewart (1958) this indicates an individual less than 40 years of age. The incompleteness of the vertebral remains (n=6) may affect the accuracy of this assessment. The teeth present exhibit, in all instances, severe dental attrition with secondary dentin observable.

Paleopathology

No skeletal or dental pathologies or anomalies were observed.

BURIAL SUMMARY

The Aenon Creek site skeletal sample consists of the cremated remains of at least two individuals, one adult and one subadult. Sex determination of either individual was not possible. Age of the subadult was determined to be 15-16 years of age based on fusion of the proximal epiphysis of a first or middle row phalange. A precise age estimation of the adult individual was impossible due to the fragmented condition of the skeletal material. A general determination of adult, tentatively less than 40 years of age, was made. No skeletal or dental pathologies were observed on the recovered skeletal material.

CHAPTER VIII

PLANT REMAINS

Anna R. Dixon

LABORATORY METHODS

Soil samples for flotation were taken from 57 pit features and one tree disturbance at the Aenon Creek site. Samples of fill for flotation were collected from arbitrary 10 cm levels established in one-half of each pit. The fills from selected pits or zones within certain pits were entirely floated. The average volume of soil samples was 20-30 liters, sample volumes ranged from 10-120 liters. A total volume of 1,781 liters of soil was collected for flotation, 1,693 liters from pit features and 88 liters from the tree disturbance. The samples were water separated at The University of Tennessee, Department of Anthropology using an "Owl Hollow Project" type flotation tank and sluice unit (q.v. Field and Laboratory Methods) (Cobb and Faulkner 1978:4-11). The processed samples were air-dried and packaged in vials. The light fractions were sent to The University of Tennessee, Ethnobotany Laboratory for analysis. Samples from multiple proveniences within a single feature were analyzed separately and then combined to produce a single feature entry for tabulation. All of the light fractions from most features were analyzed; however, in features which had a soil volume of 50 or more liters (F 15, 24, 42, 45, 47, 58, 67, and 72) and multiple zones, a subsample (i.e., usually one zone and its levels) was analyzed.

Samples were passed through a nested series of geologic screens (2 mm, 1 mm, and 500 mm). The > 2 mm sample was sorted to separate charred botanical material from non-charred botanical (e.g., rootlets, twigs, and modern seeds) and other nonbotanical remains such as lithic flakes, bones, ceramics, etc. The sorted > 2 mm sample was separated into categories such as seeds, nutshell, and wood charcoal. Genus/species identifications were made, when possible, on all of the material greater than 2 mm, with the exception of the wood charcoal, and each component was weighed. Wood charcoal fragments greater than 2 mm were randomly selected from each feature for identification until a total of 30 identifiable fragments per feature was obtained. Some features contained less than 30 identifiable fragments.

The remainder of the material in the 1 mm and 500 mm screens, as well as the "dust pan" beneath the screens, was scanned and the presence or absence of wood charcoal and the various types of nutshell was noted. Fruit fragments, seeds, and Asteraceae disc fragments were removed, counted, and weighed by genus/species. The sample residue (soil "dust," bits of bone, small nutshell, wood fragments, etc.) which remained after the removal of fruit fragments, seeds, etc. was weighed as a single unit.

All material was examined using a Bausch and Lomb stereozoom binocular microscope at magnifications of 10x-70x. The University of Tennessee, Ethnobotany Laboratory comparative collection of both archaeological and modern specimens was consulted to aid in identifications. Other reference sources included Britton and Brown (1970), Core et al. (1979), Fowells (1965), Halls (1977), Martin and Barkley (1973), and Radford et al. (1968).

RESULTS

A total of 1,360.56 g of charred plant material was recovered from the light fraction flotation samples (Table 11). The presence of diagnostic artifacts and/or radiocarbon dates allowed the assignment of cultural affiliations to some features (Table 1). The paleoethnobotanical analysis further confirmed variation among features of differing time periods and allowed the assignment of an Indeterminate Middle Woodland cultural affiliation to additional features.

Potential Plant Food Remains

Nuts. Four genera of nuts were represented in the samples from the Aenon Creek site (Table 12). Hickory nutshell remains accounted for 95.1% of all nut remains. A small amount (0.05 g) of thin-shelled hickory (e.g., *Carya cordiformis*) was identified in Feature 11. As its common name implies, *C. cordiformis* is not very palatable to either animals or humans (Halls 1977:136), which may account for its small contribution to the total sample.

The species of hickory most likely represented at the site are shagbark hickory (*Carya ovata*) and mockernut hickory (*C. tomentosa*), both of which are commonly found in the Nashville Basin at present and most probably in the past (Crites and Clebsch 1986). Both produce sweet edible nuts. Hickory nutshell remains were found in all features at the Aenon Creek site, with the exception of Feature 27 which contained no potential plant food remains.

Black walnut (*Juglans nigra*), butternut (*J. cinerea*), hazelnut (*Corylus* spp.) and acorn (*Quercus* spp.) occurred less frequently in the features. Black walnut was encountered in 16% of the features, butternut in a single feature, and hazelnut in 7% of the features. Black walnut, butternut and hazelnut accounted for only 1.3% of the potential plant food remains, by weight.

Fragments of nutshell too small to identify as either hickory or walnut were combined to form the hickory/walnut category. This category represents 3.3% of the total nutshell remains.

Acorn shell (*Quercus* spp.) comprised 0.2% of the total nut and plant food remains, although it was present in small amounts in 19 (33%) of the features.

Table 11. Plant Remains from Features.

Feature	Total Charred Plant Remains (g)	Potential Plant Foods	Wood Charcoal	Sample Residue	Unidentified
		Medium (Class 2) Pits			
11	31.01	4.51 (14.5)[a]	9.67 (31.2)	16.83 (54.3)	
14	41.25	25.94 (62.9)	0.51 (1.2)	14.80 (35.9)	
17	12.33	4.26 (34.5)	2.07 (16.8)	6.00 (48.7)	
20	21.98	7.58 (34.5)	0.38 (1.7)	14.02 (63.8)	
24	6.24	1.13 (18.1)	0.61 (9.8)	4.50 (72.1)	
29	277.28	17.12 (6.2)	122.41 (44.1)	137.73 (49.7)	0.02
33	8.97	6.40 (71.3)	0.07 (0.8)	2.50 (27.9)	
42	22.98	10.02 (43.6)	2.46 (10.7)	10.50 (45.7)	
45	83.02	42.73 (51.5)	0.29 (0.3)	40.00 (8.2)	
47	5.24	1.30 (24.8)	0.44 (8.4)	3.50 (66.8)	
58	31.15	16.33 (52.5)	0.82 (2.6)	14.00 (44.9)	
63	17.28	2.95 (17.1)	2.33 (13.5)	12.00 (69.4)	
65	2.10	0.53 (25.2)	0.42 (20.0)	1.15 (54.8)	
72	9.58	0.64 (6.7)	0.44 (4.6)	8.50 (88.7)	
Subtotal	570.41	141.44 (24.8)	142.92 (25.1)	286.03 (50.1)	0.02
		Shallow (Class 3) Pits			
1	1.13	0.38 (33.6)	0.07 (6.2)	0.68 (60.2)	
2	5.40	2.12 (39.3)	0.03 (0.5)	3.25 (60.2)	
3	3.02	1.11 (36.7)	0.12 (4.0)	1.79 (59.3)	
4	21.78	6.68 (30.6)	0.23 (1.1)	14.87 (68.3)	
5	11.17	3.95 (35.4)	1.72 (15.4)	5.50 (49.2)	<0.01
6	1.53	0.26 (17.0)	0.17 (11.1)	1.10 (71.9)	
7	20.30	1.20 (5.9)	7.60 (37.4)	11.50 (56.7)	
10	125.17	103.11 (82.4)	2.06 (1.6)	20.00 (16.0)	
12	2.82	0.23 (8.2)	0.49 (17.3)	2.10 (74.5)	<0.01
16	17.75	0.21 (1.2)	7.54 (42.5)	10.00 (56.3)	
18	10.89	2.09 (19.2)	1.80 (16.5)	7.00 (64.3)	
19	0.22	0.09 (40.9)	0.03 (13.6)	0.10 (45.5)	
22	10.77	1.18 (11.0)	4.09 (38.0)	5.50 (51.0)	
23	23.79	14.74 (62.0)	1.05 (4.4)	8.00 (33.6)	
25	4.21	0.60 (14.3)	2.11 (50.1)	1.50 (35.6)	
27	0.10			0.10(100.0)	
30	4.10	0.10 (2.4)	2.25 (54.9)	1.75 (42.7)	
32	2.39	0.38 (15.9)	1.01 (42.3)	1.00 (41.8)	
34	2.70	1.70 (63.0)		1.00 (37.0)	
35	4.26	1.20 (28.2)	0.01 (0.2)	3.05 (71.6)	
36	2.17	0.11 (5.1)	0.03 (1.4)	2.03 (93.5)	
38	0.58	0.20 (34.5)	0.08 (13.8)	0.30 (51.7)	
40	29.71	16.75 (56.4)	4.46 (15.0)	8.50 (28.6)	
43	1.52	0.69 (45.4)	0.26 (17.1)	0.57 (37.5)	
44	6.76	1.55 (22.9)	2.21 (32.7)	3.00 (44.4)	

Table 11. (continued).

Feature	Total Charred Plant Remains (g)	Potential Plant Foods	Wood Charcoal	Sample Residue	Unidentified
		Shallow (Class 3) Pits			
48	1.02	0.18 (17.7)	0.04 (3.9)	0.80 (78.4)	
52	0.88	0.05 (5.7)	0.58 (65.9)	0.25 (28.4)	
53	1.53	0.40 (26.1)	0.01 (0.7)	1.12 (73.2)	
54	1.28	0.25 (19.6)	0.30 (23.4)	0.73 (57.0)	
55	7.70	1.06 (13.8)	2.64 (34.3)	4.00 (51.9)	
56	3.72	0.29 (7.8)	2.23 (59.9)	1.20 (32.3)	
57	7.27	5.57 (76.6)	0.20 (2.8)	1.50 (20.6)	
59	1.52	0.49 (32.2)	0.03 (2.0)	1.00 (65.8)	
60	2.38	0.23 (9.7)	0.10 (4.2)	2.05 (86.1)	
61	17.96	3.64 (20.3)	2.32 (12.9)	12.00 (66.8)	
62	3.16	2.14 (67.8)	0.02 (0.6)	1.00 (31.6)	
66	2.12	0.44 (20.8)	0.52 (24.5)	1.16 (54.7)	
68	76.01	53.99 (71.0)	0.02	22.00 (29.0)	
69	16.66	6.68 (40.1)	0.53 (3.2)	9.45 (56.7)	
70	1.83	0.13 (7.1)	0.55 (30.1)	1.15 (62.8)	
71	19.67	14.62 (74.3)	0.05 (0.3)	5.00 (25.4)	
Subtotal	478.95	250.79 (52.4)	49.56 (10.3)	178.60 (37.3)	
		Large Shallow (Class 4) Pit			
28	17.05	10.33 (60.6)	0.22 (1.3)	6.50 (38.1)	
		Large (Class 5) Pit			
15	285.44	0.61 (0.2)	172.58 (60.5)	112.25 (39.3)	
		Tree Disturbance			
67	8.71	0.11 (1.3)	1.60 (18.4)	7.00 (80.3)	
Site Total	1,360.56	403.28 (29.6)	366.88 (27.0)	590.38 (43.4)	0.02

[a] Weight in grams (percentage representation).

Table 12. Potential Plant Food Remains.

Feature	Total Potential Plant Food (g)	Hickory Nut Shell	Hickory Nut/ Thin-shelled	Black Walnut Shell	Butternut Shell	Hickory/Walnut Shell	Hazelnut Shell	Acorn Shell	Seeds	Squash Rind Fragments	Asteraceae Seed-head Fragments	Other
Medium (Class 2) Pits												
11	4.51	2.34 (51.9)a	0.05 (1.1)	0.05 (1.1)	0.90 (20.0)	0.91 (20.1)	0.19 (4.2)	0.03 (0.7)	<0.01		0.03 (0.7)	0.01 (0.2)
14	25.94	24.89 (96.0)				1.04 (4.0)			0.01			
17	4.26	4.17 (97.9)				0.06 (1.4)		0.01 (0.2)	0.02 (0.5)			
20	7.58	7.53 (99.3)				0.05 (0.7)						
24	1.13	0.95 (4.1)				0.18 (15.9)						
29	17.12	12.84 (75.1)		0.85 (5.0)		2.60 (15.2)	0.01	0.46 (2.7)	0.33 (1.9)	0.02 (0.1)	0.01	
33	6.40	6.35 (99.2)				0.05 (0.8)						
42	10.02	9.99 (99.7)				0.01 (0.1)		0.02 (0.2)				
45	42.73	40.42 (94.6)		2.30 (5.4)				0.01	<0.01			
47	1.30	1.25 (96.2)		0.04 (3.1)				0.01 (0.7)				
56	16.33	16.27 (99.6)						0.06 (0.4)				
63	2.95	2.13 (72.2)		0.50 (17.0)		0.27 (9.2)		0.02 (0.6)	0.03 (1.0)			
65	0.53	0.52 (98.1)						0.01 (1.9)				
72	0.64	0.63 (98.4)							0.01 (1.6)			
Subtotal	141.44	130.28 (92.1)	0.05	3.74 (2.6)	0.90 (0.6)	5.17 (3.7)	0.20 (0.1)	0.63 (0.5)	0.40 (0.3)	0.02	0.04	0.01
Shallow (Class 3) Pits												
1	0.38	0.38(100.0)				<0.01						
2	2.12	1.92 (90.6)		0.04 (1.9)		0.16 (7.5)						
3	1.11	0.86 (77.5)				0.25 (22.5)			<0.01			
4	6.68	6.26 (93.7)				0.42 (6.3)		<0.01	<0.01			
5	3.95	3.51 (88.9)				0.41 (10.4)		0.01 (0.2)	0.02 (0.5)			
6	0.26	0.26(100.0)								<0.01		
7	1.20	0.64 (53.3)		0.24 (20.0)		0.19 (15.9)		0.01 (0.8)	0.11 (9.2)	0.01 (0.8)		
10	103.11	98.18 (95.2)		0.05 (<1.0)		4.79 (4.6)	0.01(<1.0)	0.03 (<1.0)	0.05 (<1.0)			
12	0.23	0.18 (78.3)				0.05 (21.7)			<0.01			<0.01
16	0.21	0.21(100.0)									<0.01	
18	2.09	1.39 (66.5)				0.69 (33.0)		0.01 (0.5)	<0.01			
19	0.09	0.08 (88.9)				0.01 (11.1)						
22	1.18	1.13 (95.8)							0.03 (2.5)			0.02 (1.7)
23	14.74	14.55 (98.7)		0.19 (1.3)					<0.01		<0.01	
25	0.60	0.60(100.0)										
27	0.00											
30	0.10	0.09 (90.0)				0.01 (10.0)						
32	0.38	0.29 (76.3)				0.09 (23.7)						
34	1.70	1.70(100.0)										
35	1.20	1.20(100.0)										
36	0.11	0.11(100.0)										
38	0.20	0.15 (75.0)				0.05 (25.0)						
40	16.75	16.46 (98.3)				0.28 (1.7)	0.01	<0.01				
43	0.69	0.68 (98.6)				0.01 (1.4)			<0.01			
44	1.55	1.32 (85.2)				0.20 (12.9)		0.03 (1.9)				
48	0.18	0.18(100.0)										
52	0.05	0.01 (20.0)				0.02 (40.0)		0.02 (40.0)				
53	0.40	0.38 (95.0)				0.02 (5.0)						
54	0.25	0.21 (84.0)				0.04 (16.0)						
55	1.06	1.06(100.0)							<0.01			
56	0.29	0.24 (82.8)				0.05 (17.2)						
57	5.57	5.57(100.0)										
59	0.49	0.49(100.0)										
60	0.23	0.23(100.0)										
61	3.64	3.45 (94.8)				0.15 (4.1)		0.04 (1.1)	<0.01			
62	2.14	2.13 (99.5)						0.01 (0.5)				
66	0.44	0.41 (93.2)				0.03 (6.8)						
68	53.99	53.99(100.0)										
69	6.68	6.57 (98.4)				0.10 (1.5)			0.01 (1.0)			
70	0.13	0.13(100.0)										
71	14.62	14.62(100.0)										
Subtotal	250.79	241.82 (96.4)		0.52 (0.2)		8.01 (3.2)	0.02	0.16 (0.1)	0.21 (0.1)	0.03	<0.01	0.02
Large Shallow (Class 4) Pit												
28	10.33	10.33(100.0)										
Large (Class 5) Pit												
15	0.61	0.43 (70.6)				0.16 (26.2)			0.01 (1.6)		0.01 (1.6)	
Tree Root Disturbance												
67	0.11	0.11(100.0)										
Site Total	403.28	382.97 (95.0)	0.05	4.28 (1.1)	0.90 (0.2)	13.34 (3.3)	0.22	0.79 (0.2)	0.62 (0.2)	0.05	0.05	0.03

[a]Weight in grams (percentage representation).

Seeds. A total of 348 whole seeds and 135 seed fragments representing 14 genera and 5 general categories was recovered from the flotation samples (Table 13).

The identified genera include *Ampelopsis* spp. (peppervine), *Chenopodium* spp. (goosefoot), *Desmodium* spp. (tick-trefoil), *Galium aparine* (bedstraw), *Geranium* sp. (geranium), *Gleditsia triacanthos* (honey locust), *Phalaris caroliniana* (maygrass), *Portulaca oleracea* (purslane), *Phytolacca americana* (pokeweed), *Strophostyles* spp. (wild bean), *Viola* sp. (violet or pansy), and *Vitis* spp. (grape).

General categories of seeds identified include Vitaceae, the grape family which includes grape and peppervine (both of which were found in other features), "Type I" seeds, seed coat fragments too small or damaged to identify to the genus/species level, unidentified seeds and seed fragments, and "legume" (genus/species unknown).

Several species of *Ampelopsis* are native to eastern North America. Peppervine is a high-climbing vine of the grape family which can be found growing in low woods; some species can be found growing in waste places (Radford et al. 1968:697-698). It is not edible for humans.

Chenopodium spp. (goosefoot) remains were found in seven features, most abundantly in Feature 29. The several species of goosefoot commonly found in eastern North America today are regarded as weeds and they thrive in disturbed areas such as abandoned fields and roadsides. Based on seed coat patterning, size and beaking characteristics, the species of *Chenopodium* represented at the Aenon Creek site is *C. bushianum*. Identification was hampered by the condition of the carbonized remains. Although recorded as technically "whole," almost 90% of the seeds were "popped," i.e., with the endosperm missing due to the heat of carbonization and with the seed coat (testa) heavily damaged or completely burned away. Seed coat characteristics are especially important for the proper identification of the different species of *Chenopodium*. On many specimens, nevertheless, characteristic reticulate patterning was observed on the testa remnants and seed size (allowing for 5% shrinkage as recommended by Smith 1985) was consistent with *C. bushianum*. Approximately 13% of the *Chenopodium* remains were whole and unpopped. Most were immature seeds, which do not pop easily because of their low moisture content (Smith 1985). Some seeds (n=5), however, were not clearly immature specimens and may represent other species of *Chenopodium*. The latter specimens exhibited small seed size, smooth to striate seed coats, and acute seed margins more reminiscent of species such as *C. album* and *C. standleyanum*. The young shoots and leaves of *Chenopodium* can be eaten as a potherb and the seeds made into flour or cooked whole as a gruel (Peterson 1977:152).

North American varieties of *Desmodium* are erect perennial herbs commonly found in thickets, open woods, woods borders, and waste places (Radford et al. 1968:604-613). It is not regarded as edible for humans.

Galium aparine (bedstraw) is an annual herb found in meadows, woodlands, and waste places (Radford et al. 1968:986). The bristly fruits easily attach to animals and

Table 13. Seeds.

Feature Number	Total Number of Seeds: Whole	Total Number of Seeds: Fragments	*Ampelopsis* spp.	*Chenopodium* spp.	*Desmodium* spp.	*Galium aparine*	*Geranium* spp.	*Gleditsia tricanthos*	*Phalaris caroliniana*	*Portulaca oleracea*	*Phytolacca americana*	*Rubus* spp.	*Strophostyles* spp.	*Sambucus canadensis*	*Viola* sp.	*Vitis* spp.	Vitaceae	"Type I"	Fragments	Unidentified	Legume
Medium (Class 2) Pits																					
11	0	1										1F(100.0)[a]									
14	1	2							1W (25.0)							2F(75.0)					
17	1	1		1W (50.0)				1F(50.0)													
29	211	112	8W,2F (3.1)	73W,44F(36.2)		1W(0.3)	2W(0.6)	3F (0.9)	126W,52F(55.1)					1W,4F(1.6)			4F (1.2)			2F (0.6)	1F (0.3)
45	0	1														1F(100.0)					
47	1	0							1W(100.0)												
63	107	0																107W(100.0)			
72	6	1							6W,1F(100.0)												
Subtotal	327	116	8W,2F (2.3)	74W,44F(26.5)		1W(0.2)	2W(0.5)	4F (0.9)	134W,53F(42.0)			1F (0.2)		1W,4F(1.1)		3F (0.7)	4F (0.9)	107W(23.9)		2F (0.5)	1F (0.2)
Shallow (Class 3) Pits																					
3	1	3		3F (75.0)																1W(25.0)	
5	0	1														1F(100.0)					
7	0	8						8F(100.0)													
10	4	0		1W (25.0)					3W (75.0)												
12	2	0		1W (50.0)														1W(50.0)			
18	1	1			1W(50.0)															1F(50.0)	
22	0	1						1F(100.0)													
23	2	0							1W (50.0)												1W(50.0)
30	2	0							1W (50.0)				1W(50.0)								
40	2	0		1W (50.0)						1W (50.0)											
43	0	1									1F(100.0)										
55	1	0		1W(100.0)																	
61	2	0		1W (50.0)											1W(50.0)						
69	3	1		1W (25.0)					2W,1F (75.0)												
Subtotal	20	16		6W,3F(25.0)	1W (2.8)			9F (25.0)	7W,1F (22.2)	1W(2.8)	1F (2.8)		1W(2.8)		1W(2.8)	1F (2.8)		1W(2.8)		1W,1F(5.6)	1W(2.8)
Large (Class 5) Pit																					
15	1	1								1W(50.0)									1F(50.0)		
Site Total	348	135	8W,2F (2.2)	80W,47F(26.3)	1W(0.2)	1W(0.2)	2W(0.4)	13F(2.7)	141W,54F(40.4)	2W(0.4)	1F (0.2)	1F (0.2)	1W(0.2)	1W,4F(1.0)	1W(0.2)	4F (0.8)	4F (0.8)	108W(22.4)	1F (0.2)	1W,3F(0.8)	1W,1F(0.4)

[a] Number of whole seeds "W" or seed fragments "F" (percentage representation).

human clothing and may have been carried into the site in this manner.

Two whole seeds identified as *Geranium* sp. (geranium) were found in Feature 29. Of the two native species listed in Radford et al. (1968:650-651), one is found chiefly in alluvial woods and the other is common in disturbed habitats.

Gleditsia triacanthos (honey locust) was identified in four features (F 7, 17, 22, and 29). The fruit of honey locust is long and linear with the seeds embedded in a sugary pulp (Radford et al. 1968:578). Honey locust is a common, though not dominant, tree species in the Nashville Basin (Crites and Clebsch 1986).

Phalaris caroliniana (maygrass) is an annual grass, which in its natural range (the Coastal Plain and Lower Piedmont of the southeastern United States, the Ozark Plateau, and the forest-prairie transition areas of Missouri and Kansas) occurs in ditches, along roadsides, and in waste places (Cowan 1978:269; Radford et al. 1968:122). The natural range of maygrass falls outside of Tennessee and its presence in archaeological contexts represents an extension of its natural range by humans (Cowan 1978; Crites and Terry 1984).

Portulaca oleracea (purslane) is a common prostrate annual found throughout the southeastern United States in fields and waste places (Chapman et al. 1974; Radford et al. 1968:434). Two whole specimens were identified in Features 15 and 40.

Phytolacca americana (pokeweed) is a tall perennial herb found throughout the Southeast in disturbed habitats (Radford et al. 1968:429). The young shoots and leaves of pokeweed can be eaten by humans while the purplish fruits are eaten by animals (Peterson 1977:46).

Rubus spp. (raspberry/blackberry) are woody plants with erect, arching or trailing, often thorny stems (Radford et al. 1968:537) and are found in thickets, woodland borders, and old fields. Only one specimen of *Rubus* was identified from the site (F 11).

One specimen of *Strophostyles* spp. (wild bean) was found in Feature 30. Wild bean is a trailing or twining perennial vine found in fields, woods, and clearings (Radford et al. 1968:640). It is not regarded as edible for humans.

Sambucus canadensis (elderberry) is a shrub commonly found in open habitats throughout the Southeast (Radford et al. 1968:996) which produces edible berries (Peterson 1977:18.172). One whole seed and four fragments were found in Feature 29.

The single *Viola* sp. (violet or pansy) specimen was found in Feature 61. Over 25 species of *Viola* are listed as occurring in Tennessee, growing in a variety of habitats ranging from meadows and alluvial woods to waste places (Radford et al. 1968:723-733).

Vitis spp. (grape) remains were found in three features. Seven species of wild grapes are found in the Southeast and usually occur in low woods or along stream banks (Radford et al. 1968:695-697).

"Type I" seeds were recovered from two features; 107 whole specimens were found in Feature 63. The seeds have been previously described by Crites (1987a:10, 20) for the Hayes site (40ML139), a mid-Holocene shell midden site in the Middle Duck River Valley of the Nashville Basin.

Asteraceae seedhead fragments. Flower disc fragments from the family Asteraceae were found in seven features. Members of this large family, which includes sunflowers, fleabane, etc., are usually erect herbs which grow in a variety of habitats, including wooded areas and disturbed habitats.

Cucurbita rind. A total of 11 fragments of *Cucurbita* sp. (squash) rind was found in Features 5 and 7, Ledbetter phase (Late Archaic) and Neel phase (early Middle Woodland) features. All the recovered specimens were quite small, amounting to a total of 0.03 g of material.

Wood Charcoal

At least 12 genera of trees are represented in the samples from the Aenon Creek site (Table 14). Due to the extremely fragmentary nature of the material, 23.2% of the material (by count) could be categorized only by pore arrangement, i.e., ring porous vs. diffuse porous.

The genera identified were common in the Nashville Basin at the time of first White contact (Killebrew and Safford 1874) and are also common at present in the Basin. Most of the same taxa have been identified from other archaeological contexts in the Nashville Basin (e.g., Crites 1987a).

Carya spp. (hickories) and *Quercus* spp. (oaks) were the genera most often represented at the Aenon Creek site. The three categories of oak combined represent 20% of all the wood charcoal recovered. Hickory accounts for 26% of the wood charcoal. The oaks and hickories combined totaled 46% of the wood charcoal recovered.

Taxa most indicative of the xeric conditions of the Inner Basin include *Juniperus virginiana* (eastern red cedar) (2.9%), *Cercis canadensis* (eastern redbud) (4.5%), and the *Quercus rubra* group (red and black oaks) (12.8%) (Crites 1987a:11). *Salix nigra* (black willow) (2.2%) was the only floodplain species identified. The remaining eight genera, which make up 47% of the sample, are not as specific to habitat but may be found in a variety of local habitats ranging from the deeper soils surrounding the edges of cedar glades to the wooded uplands of the Inner Basin and to the slopes of the Outer Basin where deeper soils are found.

Table 14. Wood Charcoal

Feature Number	Total Pieces of Wood Charcoal	*Acer* spp.	*Carya* spp.	*Cercis canadensis*	*Fraxinus* spp.	*Gleditsia triancanthos*	*Juglans* spp.	*Juniperus virginiana*	*Liriodendron tulipifera*	*Ostrya virginiana*	*Quercus* (Red group)	*Quercus* (White group)	*Quercus* spp.	*Salix nigra*	*Ulmus* spp.	Ulmaceae	Ring Porous	Diffuse Porous
									Medium (Class 2) Pits									
11	19				4 (21.1)			3 (15.8)	2 (10.5)	2 (10.5)				3 (15.8)			3 (15.8)	2 (10.5)
14	6				2 (33.3)						1 (16.7)						3 (50.0)	
17	8		2 (25.0)													2 (25.0)	3 (37.5)	1 (12.5)
20	3																3 (100.0)	
24	5												2 (40.0)				3 (60.0)	
29	30	7 (23.3)	6 (20.0)		2 (6.7)			2 (6.7)	2 (6.7)		2 (6.7)	1 (3.3)			2 (6.7)		6 (20.0)	
33	0																	
42	11	1 (9.1)	3 (27.3)								1 (9.1)						6 (54.5)	
45	3				1 (33.3)												2 (66.7)	
47	3		2 (66.7)														1 (33.3)	
58	0																	
63	9						5 (55.5)							3 (33.3)			1 (11.2)	
65	0																	
72	4		1 (25.0)														3 (75.0)	
Subtotal	101	8 (7.9)	14 (13.9)		9 (8.9)		5 (5.0)	5 (5.0)	4 (4.0)	2 (2.0)	4 (4.0)	1 (1.0)	2 (2.0)	6 (5.9)	2 (2.0)	2 (2.0)	34 (33.7)	3 (3.0)
									Shallow (Class 3) Pits									
1	3											1 (33.3)					2 (66.7)	
2	0																	
3	0																	
4	3										3 (100.0)							
5	0				2 (6.7)			1 (3.3)			10 (33.3)	8 (26.7)	8 (26.7)				1 (3.3)	
6	4										2 (50.0)					1 (25.0)		1 (25.0)
7	30	2 (6.7)	2 (6.7)	5 (16.6)	9 (30.0)		2 (6.7)				2 (6.7)		8 (20.0)				2 (6.7)	
10	14		3 (21.5)			1 (7.1)					7 (50.0)	1 (7.1)			1 (7.1)		1 (7.1)	
12	6				2 (33.3)						4 (66.7)							
16	10									5 (50.0)							5 (50.0)	
18	0																	
19	0																	
22	19		5 (26.3)	2 (10.5)							10 (52.6)						2 (10.5)	
23	9		5 (55.6)								2 (22.2)						2 (22.2)	
25	1																1 (100.0)	
27	0																	
30	21			13 (61.8)	1 (4.8)			1 (4.8)									6 (28.6)	
32	12		8 (66.7)		2 (16.7)								1 (8.3)				1 (8.3)	
34	0																	
35	1		1 (100.0)															
36	1																1 (100.0)	
38	2												1 (50.0)				1 (50.0)	
40	30		17 (56.7)		7 (23.3)						3 (10.0)						3 (10.0)	

Table 14. (continued).

Feature Number	Total Pieces of Wood Charcoal	*Acer* spp.	*Carya* spp.	*Cercis canadensis*	*Fraxinus* spp.	*Gleditsia triancanthos*	*Juglans* spp.	*Juniperus virginiana*	*Liriodendron tulipifera*	*Ostrya virginiana*	*Quercus* (Red group)	*Quercus* (White group)	*Quercus* spp.	*Salix nigra*	*Ulmus* spp.	Ulmaceae	Ring Porous	Diffuse Porous
Shallow (Class 3) Pits (continued)																		
43	10		4 (40.0)		2 (20.0)		1 (10.0)							1 (10.0)			2 (20.0)	
44	20		8 (40.0)									1 (5.0)					11 (55.0)	
48	0																	
52	3		2 (66.7)														1 (33.3)	
53	0																	
54	12		2 (16.7)		2 (16.7)		2 (16.7)	2 (16.7)					2 (16.7)				2 (16.7)	
55	12		10 (83.4)		1 (8.3)			1 (8.3)										
56	0																	
57	2																2 (100.0)	
59	0																	
60	0																	
61	19		3 (15.8)				1 (5.3)		4 (21.1)		8 (42.0)						3 (15.8)	
62	0																	
66	4		3 (75.0)														1 (25.0)	
68	1																1 (100.0)	
69	18	6 (33.3)	8 (44.5)											1 (5.5)	3 (16.7)			
70	6		1 (16.7)											1 (16.7)			2 (33.3)	2 (33.3)
71	2		2 (100.0)															
Subtotal	305	8 (2.6)	84 (27.5)	20 (6.6)	28 (9.2)	1 (0.3)	6 (2.0)	5 (1.6)	4 (1.3)	5 (1.6)	51 (16.7)	11 (3.6)	18 (5.9)	3 (1.0)	4 (1.3)	1 (0.3)	53 (17.4)	3 (1.0)
Large Shallow (Class 4) Pit																		
28	3		2 (66.7)														1 (33.3)	
Large (Class 5) Pit																		
15	30		15 (50.0)		1 (3.3)			3 (10.0)			2 (6.7)				2 (6.7)		5 (16.6)	2 (6.7)
Tree Disturbance																		
67	8	3 (37.5)	1 (12.5)											1 (12.5)			1 (12.5)	2 (25.0)
Site Total	447	19 (4.3)	116 (26.0)	20 (4.5)	38 (8.5)	1 (0.2)	11 (2.5)	13 (2.9)	8 (1.7)	7 (1.6)	57 (12.8)	12 (2.7)	20 (4.5)	10 (2.2)	8 (1.7)	3 (0.7)	94 (21.0)	10 (2.2)

[a]Number of pieces (percentage representation).

INTERPRETATION OF PLANT REMAINS

The carbonized plant remains from the Aenon Creek site represent a diverse array of taxa from several time periods. When features are analyzed according to cultural affiliation, some patterning occurs. By weight, potential plant foods represent approximately 51% of total charred plant remains in the Late Archaic features (F 5 and 40), 12% of total plant remains in Middle Woodland features, and 50% of total remains in features of Indeterminate cultural affiliation. The relatively low percentage of plant food remains in the Woodland features is attributable to the skewing effect of a medium (Class 2) pit (F 29) and a large (Class 5) pit (F 15) which contained large amounts of wood charcoal. When Features 15 and 29 are removed from consideration, the percentage of potential plant foods increases to approximately 45%.

When potential plant foods are compared for the Late Archaic, Middle Woodland, and Indeterminate period features, hickory nutshell accounts for 97%, 85%, and 96% respectively, of potential plant food remains. The 85% figure for dated Woodland features reflects the contribution of seeds to the potential plant food figures, concomitant to a change from a hunting and gathering economy to one relying (in part) on plant cultivation (Yarnell 1988; Yarnell and Black 1985). The 96% figure for hickory in undated features can be attributed to the mixing of features of different time periods. Eight features (F 3, 10, 12, 14, 23, 55, 69, and 72) that lacked Middle Woodland artifacts contained common Middle Woodland period botanical components such as maygrass and goosefoot and are described as Indeterminate Middle Woodland features.

Although an important resource, hickory nut, as represented by nutshell remains, is predominant in samples calculated by weight primarily because of its density (durability) and its use as a fuel. These factors insure the overrepresentation of hickory nutshell remains in most archaeological contexts (Crites 1987b; Hally 1981). Because acorn and hazelnut shell (moreso acorn) are much more fragile than hickory, the recorded weights may not accurately reflect the importance of this food resource. When the weight of acorn shell at the Aenon Creek site is increased by a factor of 200, as Lopinot (1982) suggests, the resulting figure of 15.8 g is still much less than the 382.97 g of hickory nutshell.

At the Middle to Late Archaic Hayes site (40ML139), Crites (1987a) also found that even with adjusted weights, acorn remains formed a small percentage of nutshell relative to hickory. The underrepresentation of acorn shell in Inner Basin sites may reflect the abundance of red and black oaks on the landscape. These varieties, unlike many white oaks, produce bitter acorns which require thorough processing to remove the bitter tannic acid. In contrast, hickories with sweet-tasting nuts (e.g., *Carya ovata*, shagbark hickory and *C. tomentosa*, mockernut hickory) are abundant in the Inner Basin.

The low incidence of butternut and black walnut is congruent with the actual distribution of the species in the site area. Butternut is not a common Inner Basin tree, generally preferring moist well-drained loams, although it does well on rocky soils, especially those of limestone origin (Halls 1977:49). Its presence may indicate utilization of Outer Basin resources, as deeper soils are more common in the Outer Basin (Edwards et al. 1974). Hazelnut (*Corylus* spp.), a small shrub which commonly occurs in thickets, is also fairly uncommon in the Nashville Basin.

The patterning of seed taxa at the Aenon Creek site is largely attributable to human activities, direct and indirect. Some seeds are from plants that are clearly food resources: *Chenopodium*, *Phalaris*, and possibly *Gleditsia triacanthos*, *Rubus* spp., *Vitis* spp., and *Sambucus canadensis*. Others, as discussed above, are plants that thrive in areas disturbed by human activity (e.g., *Ampelopsis* spp., *Galium aparine*, *Desmodium* spp., *Portulaca oleracea* , and *Phytolacca americana*).

Smith (1985) re-evaluated a sample of specimens of *Chenopodium bushianum* from Tennessee and concluded that thin-testa members of this species should be classified as *C. berlandieri*, a domesticated variety. Since such a determination of testa thickness is impossible without the use of a scanning electron microscope, a conservative identification of the *Chenopodium* remains, i.e., that they represent the cultivated (non-domesticated) variety *C. bushianum*, will be taken. *C. bushianum* is a common component of early Middle Woodland plant assemblages elsewhere in Middle Tennessee (e.g., Crites 1978). Although goosefoot and maygrass are found consistently, albeit in small amounts, throughout the Aenon Creek site, the overall small sample size precludes all but the most generalized comments. *Cucurbita* rind fragments are also represented in minute quantities from both Late Archaic and early Middle Woodland features. The fragments are fairly thin and may represent the wild species, *C. texana*, rather than domesticated *C. pepo* (Crites 1987a; Kirkpatrick et al. 1985; Yarnell 1988).

An overall view of the potential plant food remains and other seeds from the Aenon Creek site supports the view of changes over time in the subsistence economy of human groups living in the Nashville Basin. The shift from hunting and gathering towards increasing management of the landscape is illustrated by the changes in the nature of the plant remains from features of different time periods at the Aenon Creek site.

Late Archaic period plant remains, from only two features, consist primarily of nutshell and wood charcoal while the Middle Woodland period features not only contain nutshell and wood charcoal but also cultivated plants such as maygrass and goosefoot in addition to the "weeds" that accompany disturbance of the landscape by human activity (Crites 1987b). The plant assemblages at the Aenon Creek site are consistent with those of other Middle Woodland sites in Middle Tennessee (e.g., Crites 1978).

The wood charcoal distribution from the Aenon Creek site is consistent with the current distribution of arboreal taxa in the Nashville Basin. This distribution supports the contention that the environment of this area has remained relatively stable for the past 4,000 years or so following the drier Mid-Holocene Interval (Delcourt and Delcourt 1981).

CHAPTER IX

FAUNAL REMAINS

Constance R. O'Hare

A total of 1,592 (99.75 g) fragments of unmodified bone and 2 (1.60 g) shell fragments was recovered during the Aenon Creek site investigations. Nearly all (89.7%) of the bone by weight and the shell fragments occurred in 10 medium (Class 2) pits. Approximately two-thirds (64.7%) of the bone was contained in an early Middle Woodland Neel phase medium (Class 2) pit (F 29). The remaining bone (10.3%) was recovered from 14 shallow (Class 3) pits and 1 large (Class 5) pit.

LABORATORY PROCEDURES

Bone fragments recovered from 25 pit features were analyzed and identified using The University of Tennessee, Zooarchaeological Comparative Collection. Bones were examined for cultural modification (burning and butchering cuts) and non-cultural modification (rodent gnawing). However, since about 95% of the bone fragments were smaller than 6.4 mm (1/4 inch) in diameter, any evidence of modification besides burning was impossible to determine. All bone fragments from each feature were separated into burnt and unburnt fragments and counted and weighed in grams.

GENERAL SAMPLE CHARACTERISTICS

Of the 1,592 pieces of unmodified bone recovered, 1,526 fragments were not identifiable to any taxon. The fragments were separated into 1,423 (63.15 g) burnt bones and 103 (15.95 g) unburnt bones. The number of pieces and weight of unidentifiable bone fragments for each feature is given in Table 15. A total of 66 bone fragments were identifiable to some taxonomic level. Of these, 10 (2.40 g) were burnt and 56 (18.25 g) were unburnt. The list of identifiable bone fragments by feature is given in Table 16. The number of total bones by pit class and cultural affiliation is given in Table 17.

UNIDENTIFIABLE BONE

Hofman (1984c:149) has pointed out that "poor bone preservation, due largely to acidic soils and extreme variations in soil moisture content and shrink-well actions, is typical of the open terrace sites along the Central Duck River." This doubtless contributed greatly to the small bone sample from the Aenon Creek site in the Duck River Drainage. Over 90% of the sample consists of burnt and calcined bone fragments smaller than 6.4 mm in diameter. Knight (1983) has suggested that the

Table 15. Unidentifiable Bone.

Feature Number	Burnt Bone		Total Bone	
		Medium (Class 2) Pits		
11	16	(1.40)[a]	16	(1.40)
17	378	(6.90)	384	(7.15)
20	4	(0.30)	4	(0.30)
24	36	(3.50)	37	(3.70)
29	504	(38.75)	570	(50.30)
42	332	(6.00)	356	(9.50)
45	6	(0.30)	7	(0.50)
47	6	(0.20)	6	(0.20)
58	11	(0.50)	11	(0.50)
72	1	(0.10)	1	(0.10)
Subtotal	1,294	(57.95)	1,392	(73.65)
		Shallow (Class 3) Pits		
3	1	(0.20)	1	(0.20)
4	42	(0.85)	42	(0.85)
5	4	(0.40)	4	(0.40)
12	15	(0.55)	15	(0.55)
16	2	(0.25)	2	(0.25)
35	5	(0.05)	5	(0.05)
40	1	(0.10)	1	(0.10)
43	3	(0.65)	8	(0.90)
44	10	(0.60)	10	(0.60)
52	12	(0.50)	12	(0.50)
55	7	(0.35)	7	(0.35)
56	20	(0.45)	20	(0.45)
61	3	(0.10)	3	(0.10)
70	2	(0.10)	2	(0.10)
Subtotal	127	(5.15)	132	(5.40)

Table 15. (continued).

Feature Number	Burnt Bone		Total Bone	
		Large (Class 5) Pit		
15	2	(0.05)	2	(0.05)
Site Total	1,423	(63.15)	1,526	(79.10)

[a] Number of pieces (weight in grams).

Table 16. Identifiable Bone.

Feature Number	Burnt Bone n	Burnt Bone g	Total Bone n	Total Bone g	Element	Side	Portion	Scientific Name
					Medium Class 2 Pits			
20	3	(0.70)	3	(0.70)	Carapace/plastron		Fragments	Testudines
29			10	(0.85)	Ribs		Whole	Osteichthyes
			1	(0.15)	Vertebra		Fragment	Osteichthyes
			1	(0.25)	Operculum	Right	Proximal fragment	*Hypentelium nigricans*
	1	(0.20)	5	(0.60)	Carapace/plastron		Fragments	Testudines
	1	(0.50)	2	(0.80)	Pleurals		Medial fragments	Testudines
	1	(0.45)	1	(0.45)	Plastron		Medial fragment	Testudines
			1	(1.95)	Epiplastron	Right	Whole	*Terrapene carolina*
	1	(0.20)	1	(0.20)	Vertebra		Fragments	Serpentes
			3	(0.30)	Ribs		Proximal fragments	Serpentes
			5	(1.45)	Long bone		Fragments	Aves
			1	(0.15)	Tarsometatarsus	Right	Proximal fragment	Aves
			1	(0.30)	Tarsometatarsus		Medial fragment	Aves
			1	(0.10)	Incisor		Medial fragment	Rodentia
			1	(0.10)	Lower Incisor	Right	Proximal fragment	Rodentia
			1	(1.50)	Mandible	Left	Whole	*Sylvilagus floridanus*
			6	(0.25)	I_L, P_4, M_1, M_2, M_3	Left	Whole	*Sylvilagus floridanus*
			1	(0.05)	Metacarpal		Fragment	*Sylvilagus floridanus*
			1	(0.15)	Distal phalange		Whole	*Sylvilagus floridanus*
			1	(1.95)	Mandible	Left	Medial fragment	*Didelphis virginianus*
			1	(0.15)	Tooth		Fragment	*Odocoileus virginianus*
			1	(2.50)	Metacarpus/tarsus		Distal epiphysis	*Odocoileus virginianus*
42	2	(0.30)	4	(0.40)	Carapace/plastron		Fragments	Testudines
			3	(0.50)	Teeth		Fragments	*Odocoileus virginianus*
Subtotal	9	(2.35)	56	(15.80)				

Table 16. (continued)

Feature Number	Burnt Bone n	Burnt Bone g	Total Bone n	Total Bone g	Element	Side	Portion	Scientific Name
					Shallow (Class 3) Pits			
4	1	(0.05)	1	(0.05)	Tibia	Right	Distal half	*Sciurus* sp.
43			8	(0.20)	Scales		Fragments	Osteichthyes
			1	(4.60)	M_2	Right	Whole	*Sus scrofa*
Subtotal	1	(0.05)	10	(4.85)				
Site Total	10	(2.40)	66	(20.65)				

Table 17. Bone by Pit Class and Cultural Affiliation.

Pit Class	Number of Features	Burnt Bone	Total Bone
2	10	1,303 (60.30)[a]	1,448 (89.45)
3	14	128 (5.20)	142 (10.25)
5	1	2 (0.05)	2 (0.05)
Site Total	25	1,433 (65.55)	1,592 (99.75)

Cultural Affiliation	Number of Features	Burnt Bone	Total Bone
Ledbetter Phase	2	5 (0.50)	5 (0.50)
Neel Phase	4	902 (47.90)	1,017 (72.75)
Neel Phase/McFarland Phase	1	2 (0.05)	2 (0.05)
Indeterminate Middle Woodland	8	81 (5.50)	82 (5.70)
Historic	1	3 (0.65)	17 (5.70)
Indeterminate	9	440 (10.95)	469 (15.05)
Site Total	25	1,433 (65.55)	1,592 (99.75)

[a] Number of pieces (weight in grams).

intense heat needed to calcine bone may cause over three-fourths (81.8%) of the chemical reactions which serve to preserve calcined bone. Thus the high percentage of burnt and calcined bone at the Aenon Creek site may be an indication that many unburnt bone fragments deposited into the features have been destroyed by the moist acidic soils of Middle Tennessee. Nearly two-thirds (61.4%) of the unidentifiable burnt bone by weight and nearly two-thirds (63.6%) of all the unidentifiable bone by weight was recovered from Feature 29. Nearly one-fourth (20.4%) of the unidentifiable burned bone and nearly one-fourth (21.1%) of all the unidentifiable bone was recovered from Feature 17. Features 17 and 29 are early Middle Woodland Neel phase medium (Class 2) pits.

IDENTIFIABLE BONE

Only 5 features contained identifiable bone and 25 of the 66 identifiable elements came from an early Middle Woodland Neel phase medium (Class 2) storage pit (F 29). Nine elements (eight fish scales and one domestic pig molar) came from a historic shallow (Class 3) pit (F 43). Each fragment was identified, as far as possible, to element, side, portion, and taxon. The NISP (Number of Identifiable Specimens), MNI (Minimum Number of Individuals), and bone weights (g) of the identifiable bone fragments are given in Table 18.

Of the 66 bones, 47 were identifiable only to class or order. Nineteen rib, vertebra, and scale fragments were determined to be from bony fishes (Osteichthyes), 15 plastron and carapace fragments were determined to be from hard-shell turtles (Testudines), three ribs and one vertebra belonged to snakes (Serpentes), seven long bone fragments were bird (Aves) bone fragments, and two incisor fragments were rodent (Rodentia) incisors.

Nineteen bone fragments were identifiable to genus or species. One right operculum was identified as from a Northern Hogsucker (*Hypentelium nigricans*), a common fish in small streams throughout Middle Tennessee (Boschung 1980). One right epiplastron was identified as belonging to an Eastern Box Turtle (*Terrapene carolina*). Dye (1977:74) stated that "although turtles were probably not an important item found in the prehistoric diet, they are a common element in archaeological sites." Other researchers have stressed the fact that box turtles are easy to find and capture (Adler 1968:153). The Eastern Box Turtle is found throughout the Southeast in moist forested areas (Behler and King 1979:468).

One right tibia was identified as either an Eastern Gray Squirrel (*Sciurus carolinensis*) or an Eastern Fox Squirrel (*Sciurus niger*). Both species occur throughout Middle Tennessee but the Eastern Gray Squirrel prefers hardwood forests or river bottoms while the Eastern Fox Squirrel prefers to live in more open areas (Burt and Grossenheider 1976:118-119). Seven cranial elements were identified as belonging to one Eastern Cottontail (*Sylvilagus floridanus*) individual. One metacarpal and one

Table 18. Identifiable Bone by Minimum Number of Individuals (MNI) and Number of Identifiable Specimens (NISP).

Feature Number	MNI[a]	NISP[b]	Weight (g)	Common Name	Scientific Name
				Medium (Class 2) Pits	
20		3	(0.70)	Turtle	Testudines
29		11	(1.00)	Fish	Osteichthyes
	1	1	(0.25)	Northern Hogsucker	*Hypentelium nigricans*
		8	(1.85)	Turtle	Testudines
	1	1	(1.95)	Eastern Box Turtle	*Terrapene carolina*
	1	4	(0.50)	Snake	Serpentes
	1	7	(1.90)	Bird	Aves
	1	2	(0.20)	Rodent	Rodentia
	1	9	(1.95)	Eastern Cottontail	*Sylvilagus floridanus*
	1	1	(1.95)	Opossum	*Didelphis virginianus*
	1	2	(2.65)	White-tailed Deer	*Odocoileus virginianus*
42		4	(0.40)	Turtle	Testudines
	1	3	(0.50)	White-tailed Deer	*Odocoileus virginianus*
Subtotal	9	56	(15.80)		
				Shallow (Class 3) Pits	
4	1	1	(0.05)	Gray/Fox Squirrel	*Sciurus* sp.
43		8	(0.20)	Fish	Osteichthyes
	1	1	(4.60)	Domestic Pig	*Sus scrofa*
Subtotal	2	10	(4.85)		
Site Total	11	66	(20.65)		

[a]MNI-Minimum number of individuals.

[b]NISP-Number of identifiable specimens.

distal phalange were also identified as Eastern Cottontail. The Eastern Cottontail is also common throughout Middle Tennessee but prefers to live in heavy brush with open areas nearby (Burt and Grossenheider 1976:209). One left mandible fragment was identified as an Opossum (*Didelphis virginianus*). The Opossum is an abundant resident of the Tennessee Valley and their bones appear frequently in archaeological sites (Barkalow 1972:21).

Jochim (1976:40) has stressed that small game animals, although considered as secondary food items to larger game, were important because they were a reliable year-round source of food. Hofman (1984c:162) has suggested that "box turtles and aquatic turtles would have been exploited when encountered. Rabbits, ground hogs, opossums, and raccoons could have been snared and trapped as embedded aspects of general hunting and gathering activities." However, the animal that was most important to the Southeastern Indians was the White-tailed Deer (*Odocoileus virginianus*). Only five elements were identified as deer from the Aenon Creek site but the meat that one deer represents is greater than the meat of all the other animals combined (White 1953). Hudson (1976:774-775) stated that the deer in the historic period was "by far the most important game animal in the Southeast, providing from 50-90 percent of the animal protein eaten." The availability of deer year-round also contributed to its importance to the Indians (Jenkins 1974:191). A molar was identified as belonging to a domestic pig (*Sus scrofa*). Since all the identified animals from the Aenon Creek site were available and utilized year-round, the season or seasons of occupation at the site cannot be determined.

MOLLUSCA

Two shell fragments were recovered from the Aenon Creek site (1.50 g). One (1.40 g) bivalve fragment was recovered from Feature 29 and 1 (0.10 g) aquatic gastropod (*Elimia laqueata*) was recovered from Feature 58.

INTERPRETATION OF FAUNAL REMAINS

Although the small bone sample size does limit the number of conclusions that one can reach about animal utilization at this site, some suggestions can be made. The fact that the majority of bones are small calcined fragments may indicate that poor preservation factors may have destroyed the majority of bone deposited in the features. The small species list is directly related to the small sample size. Many researchers, including Casteel (1970s), have written to show the direct mathematical relationship between NISP and MNI. The smaller the species list, the more likely that only the most common animals will be represented. In a survey of all sites with faunal material from the Tennessee Valley of Alabama, Barkalow (1972:19) found that White-tailed Deer remains were found in 92.2% of all sites, opossum in 60.0%, box turtles in 41.1%, squirrels in 24.5% and cottontails in 11.1% of all sites. Therefore, if the sample analyzed from the Aenon Creek site represents only a very small amount of the bone that was once deposited there, the bones of these species probably survived because they were so common and abundant.

CHAPTER X

HISTORIC COMPONENT

Charles H. Faulkner

A historic component on the Aenon Creek site was revealed when 65 nineteenth and twentieth century artifacts were found in the controlled surface collection. Test Unit 2 also produced a single historic sherd. An additional 44 historic artifacts were recovered in the back dirt piles from the plowzone removal. A single historic feature (F 43) was exposed after the plowzone was removed. This pit produced eight historic artifacts. The artifacts recovered on the surface were clustered around Feature 43, especially on the slope on the west side of Power Unit 10. The presence of Feature 43 and the nature and distribution of the surface artifacts suggest the location of a dwelling occupied in the early nineteenth century.

FEATURE 43

Feature 43 was actually two shallow pits, the maximum length being 214 cm (N/S) and maximum width 91 cm (E/W) (Figures 40 and 41). The maximum depth of this feature, from the base of the plowzone, was 13 cm. The feature fill consisted of three soil zones. Zone A was a light olive brown to yellowish-brown nitre-like silt loam at the top of the north pit. Except for a block of galena and a small iron fragment, this stratum contained all of the historic artifacts recovered in this feature. Zone B1, a medium brown silt loam mixed with a yellowish-brown silt loam, constituted most of the fill of the south pit. Zone B2 was beneath Zone A in the north pit and on the west side of the south pit. This zone was a dark brown silt loam.

The southern pit in this feature appears to be intrusive into the northern pit. This feature may have started as a small square pit measuring about 85 cm x 85 cm that was later expanded with an overlapping 140 cm x 90 cm rectangular pit to the south.

The rectangular shape of this feature and the nitre-like soil in the fill suggests that this was a shallow pit beneath a structure. The feature is not deep enough to be designated a pit cellar although it may have functioned as a shallow storage facility. Another possibility is that this was merely a scooped-out area largely created by animals such as dogs which often lived under buildings raised on piers.

One puzzling aspect of this feature is the infrequency of artifacts in the fill. Features beneath houses usually contain a substantial number of discarded domestic materials. Since virtually all of the historic artifacts were found in the top zone, it appears that very little cultural material accumulated in the pit(s) while the structure was standing. The artifacts that did accumulate are small, typical of material that would

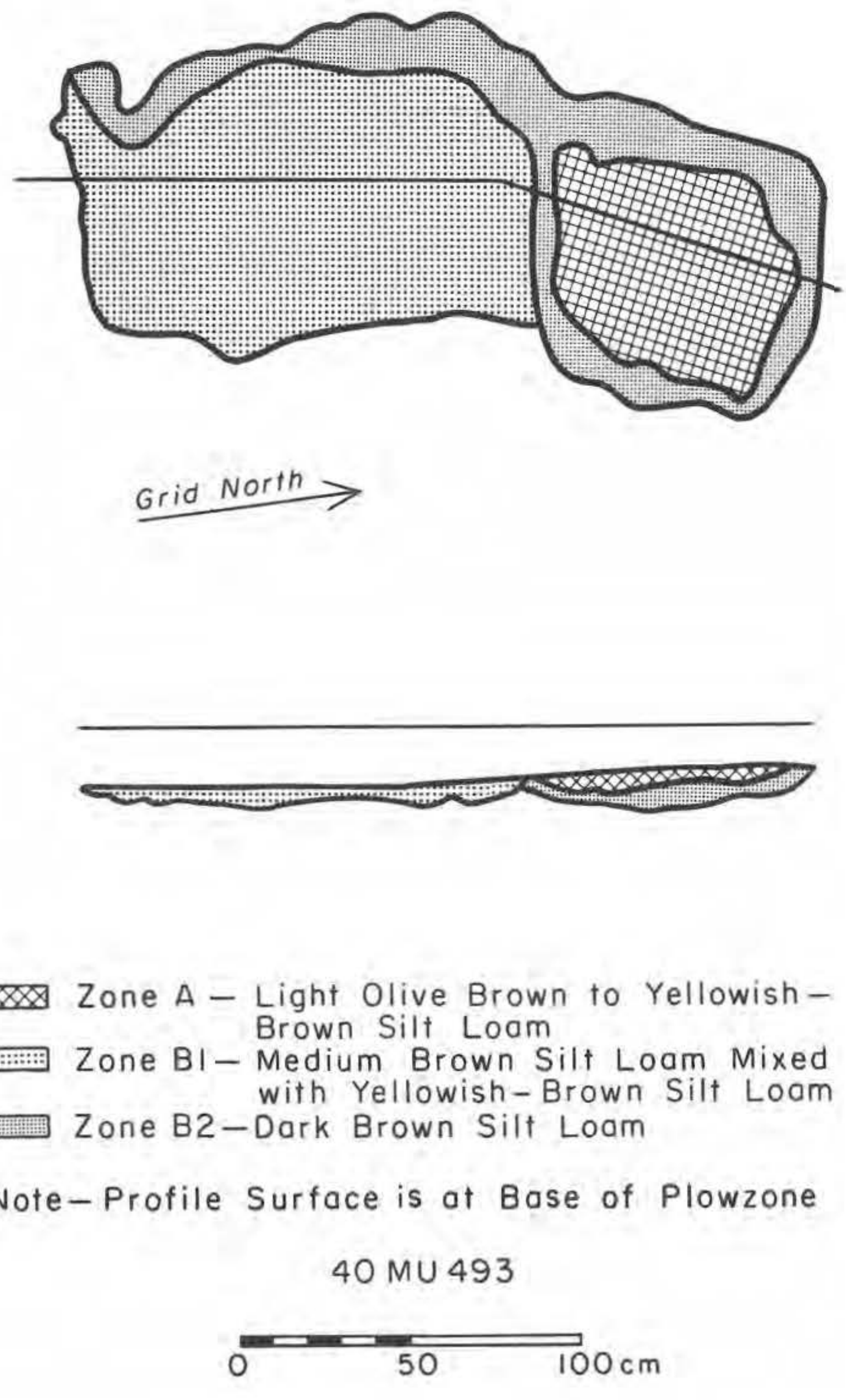

Figure 40. Feature 43 Plan and Profile.

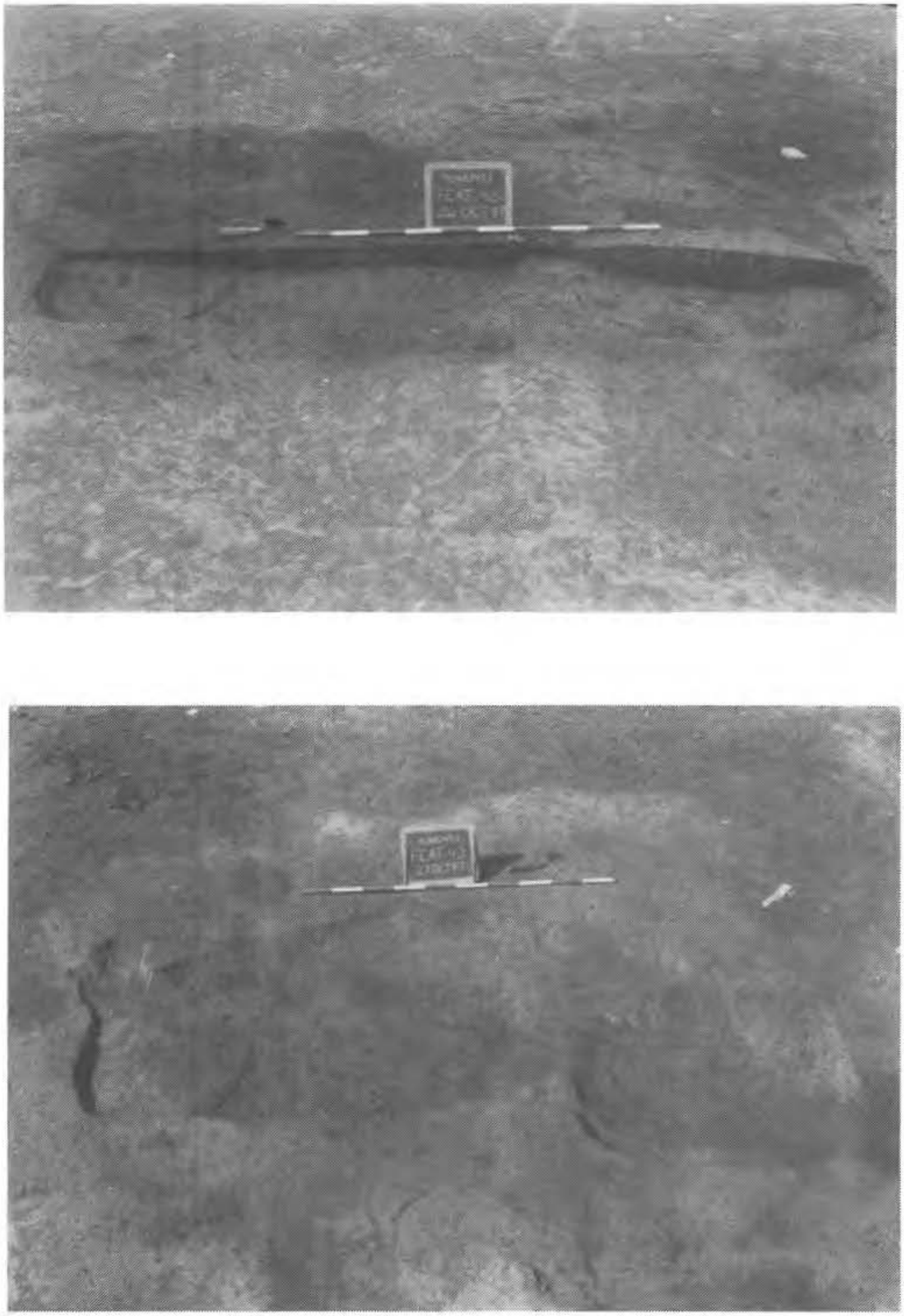

Figure 41. Feature 43 Profile and After Excavation.
Looking West.

have fallen through cracks in the floor. When the house was abandoned or torn down, more material probably accumulated in the very top of the feature but this was truncated and scattered by over a hundred years of cultivation.

ARTIFACTS

The 118 historic artifacts were classified according to the group, class, and type scheme of South (1977). This would allow the interpretation of specific activities by the historic residents of this site and provides the means to compare the assemblage here to other domestic historic sites in Tennessee.

Kitchen Group

A total of 111 artifacts was placed in this group. Virtually all of the historic artifacts are in this group (94.1%), supporting the strong association of the historic component with domestic activities. Artifact classes present in this group include ceramics, container glass, glassware, and kitchenware.

Ceramics. The ceramic sherds are classified according to ware, surface treatment, and form/function. Four wares are present in the ceramic assemblage: porcelain (n=5, 5.0%); stoneware (n=27, 26.7%); pearlware (n=28, 27.7%); and whiteware (n=35, 34.7%). An additional six sherds (5.9%) are unidentified as to ware (Table 19).

The stoneware sherds have three different surface treatments. The most common surface treatment is salt-glazing. Eighteen sherds are from salt-glazed vessels, one being decorated with an incised line. Salt-glazed pottery was widely manufactured in the Middle Tennessee region in the nineteenth century, there being several potteries reported in nearby Davidson County (Smith and Rogers 1979:63-69). No potteries have been reported in Maury County but the Coble pottery operated until the last quarter of the nineteenth century in adjacent Hickman County (Smith and Rogers 1979:73). However, the Cobles appear to have made lead-glazed redware which was not found at Aenon Creek.

The other stoneware sherds found on this site are eight alkaline-glazed and one slip-glazed. Alkaline glazing is not a common surface finish in Tennessee, being more common in Georgia and North Carolina (Smith and Rogers 1979). The slip-glazed sherd is a handle fragment.

Three porcelain types are in the assemblage. Three sherds are undecorated soft paste. Two sherds are decorated soft paste; one is overglaze enameled and the other is sprig decorated. All of these porcelain sherds date from the first half of the nineteenth century.

Table 19. Distribution of Historic Ceramics.

Provenience	PZ[a]	TU 2	F 43	880 N 930 E[b]	890 N 930 E	900 N 920 E	900 N 930 E	900 N 940 E	900 N 950 E	900 N 960 E	900 N 970 E	910 N 910 E	910 N 920 E	910 N 930 E	910 N 940 E	910 N 950 E	910 N 960 E	920 N 910 E	920 N 920 E	920 N 930 E	920 N 960 E	930 N 900 E	930 N 910 E	930 N 920 E	930 N 930 E	930 N 950 E	940 N 910 E	940 N 920 E	940 N 950 E	940 N 970 E	950 N 910 E	950 N 920 E	950 N 930 E	960 N 910 E	Site Total
Stoneware, Salt-glazed	3					1							1		1	1		1			1		2		2	1				1		1		2	18
Stoneware, Alkaline-glazed									1									1	1	1		1		2	1										8
Stoneware, Slip-glazed	1																																		1
Porcelain Undecorated	2				1																														3
Porcelain, Underglazed Enamelled	1																																		1
Porcelain, Sprig-decorated	1																																		1
Pearlware, Plain	4																1													1			1		7
Pearlware, Blue Shell-edge	1																																		1
Pearlware, Embossed	1																																		1
Pearlware, Underglaze Polychrome	2			1																															3
Pearlware, Blue Transfer-printed	4		1			1	1			1			1																1			1			11
Pearlware, Underglaze Blue Hand-painted																									1										1
Pearlware, Annular Ware	2													1											1										4
Whiteware, Plain	7							1		1	1	1		2	1			1														1			16
Whiteware, Blue Shell-edge	1																																		1
Whiteware, Blue Edge-decorated	4							2																1			1		1						9
Whiteware, Red Transfer-printed	2	1					1																												4
Whiteware, Underglaze Blue Hand-painted	3													1										1											5
Unidentified Ware	1		3																								2								6
Total	40	1	4	1	1	2	2	3	1	2	1	1	2	4	2	1	1	3	1	1	1	1	2	4	5	1	2	1	1	3	1	2	1	2	101

[a] PZ-plowzone, TU-test unit, F-feature.

[b] Coordinates of southwest corner of 10 m x 10 m controlled surface collection unit.

Five pearlware types were found on the site. The most frequently occurring type is blue transfer-printed (n=11). Seven plain or undecorated pearlware sherds were also recovered. These were probably from the undecorated portions of shell-edge or annular ware vessels. Annular ware is represented by four sherds. Three sherds are fine-line underglaze polychrome. The colors on these sherds suggest a pre-1820 date for this vessel (Noel-Hume 1970:179). Two sherds are blue shell-edge, one a rim and the other a marley sherd with an embossed decoration. One sherd is underglaze blue hand-painted.

Whiteware is also represented by five types. Almost half of these sherds are plain or undecorated (n=16). These sherds are undoubtedly from the shell-edge and edge-decorated plates described below. Nine sherds are edge-decorated, embossed with the "rope and feathers" motif. A related edge-decorated type is shell-edge, here represented by a single sherd. Underglaze blue hand-painted is represented by five sherds and red transfer-printed by four sherds. The latter vessels were probably manufactured after 1828 (Majewski and O'Brien 1987:142).

Unidentified ware, either pearlware or whiteware, could be identified as the following types: blue edge-decorated (n=2), blue transfer-printed (n=3), and plain (n=1).

Sixty-three of these sherds were used to determine the mean ceramic date for the historic occupation at Aenon Creek site. Table 20 is derived from South's (1977) dating formula, which gave a mean ceramic date of 1833.6 for the historic occupation at this site.

A minimum of 26 vessels is represented by the 101 sherds found at the Aenon Creek site. Seventeen of these vessels were refined earthenware (pearlware and whiteware), three were porcelain, and six were stoneware (salt-glazed, alkaline-glazed, and slip-glazed).

The stoneware vessels include four salt-glazed jars, all with a gray or tan/gray stoneware clay paste (Figure 42A). Two different size jars are represented, one decorated with an incised line. At least two jugs are present; one represented by seven sherds that have a reddish-colored paste and a gray/brown alkaline glaze (Figure 42B) and the other jug identified by a slip-glazed handle (Figure 42C).

The three porcelain vessels are all English soft-paste "china." One is an undecorated bowl that shows a considerable amount of use since it is extensively scratched on the exterior surface (Figure 42D). A minimum of two saucers is evident; one is overglaze enameled (Figure 42E) and the other is sprig decorated (Figure 42F).

Pearlware vessels (n=9) include only one plate, a blue shell-edge vessel. Two annular ware bowls are identifiable, with a plain basal sherd from one of these vessels exhibiting extensive interior use scratches (Figure 42G). At least two cup and saucer sets are represented by a cup and saucer each; one an underglaze polychrome (Figure 42H) and the other blue transfer-printed (Figure 42I). A sherd from a blue transfer-printed bowl is also present (Figure 42J), as is a sherd from an underglaze blue hand-painted cup.

Table 20. Ceramic Dates from the Aenon Creek Site.

Type Used	Date Range	Median Date	Source
Pearlware			
Undecorated	1780-1830[a]	1805	(South 1972)
Edge-decorated	1780-1830	1805	(South 1972)
Underglaze, Polychrome (Fine Line)	1795-1815	1805	(South 1972)
Transfer-printed	1795-1840	1818	(South 1972)
Annular ware	1790-1820	1805	(South 1972)
Underglaze Blue Hand-painted	1780-1820	1800	(South 1972)
Whiteware			
Undecorated	1820-1900+	1860	(South 1972)
Edge-decorated	1830-1860+	1845	(Smith 1983)
Transfer-printed	1830-1860+	1845	(Smith 1983)
Underglaze Blue Hand-painted	1830-1860+	1845	(Smith 1983)

[a] Date ranges are approximate.

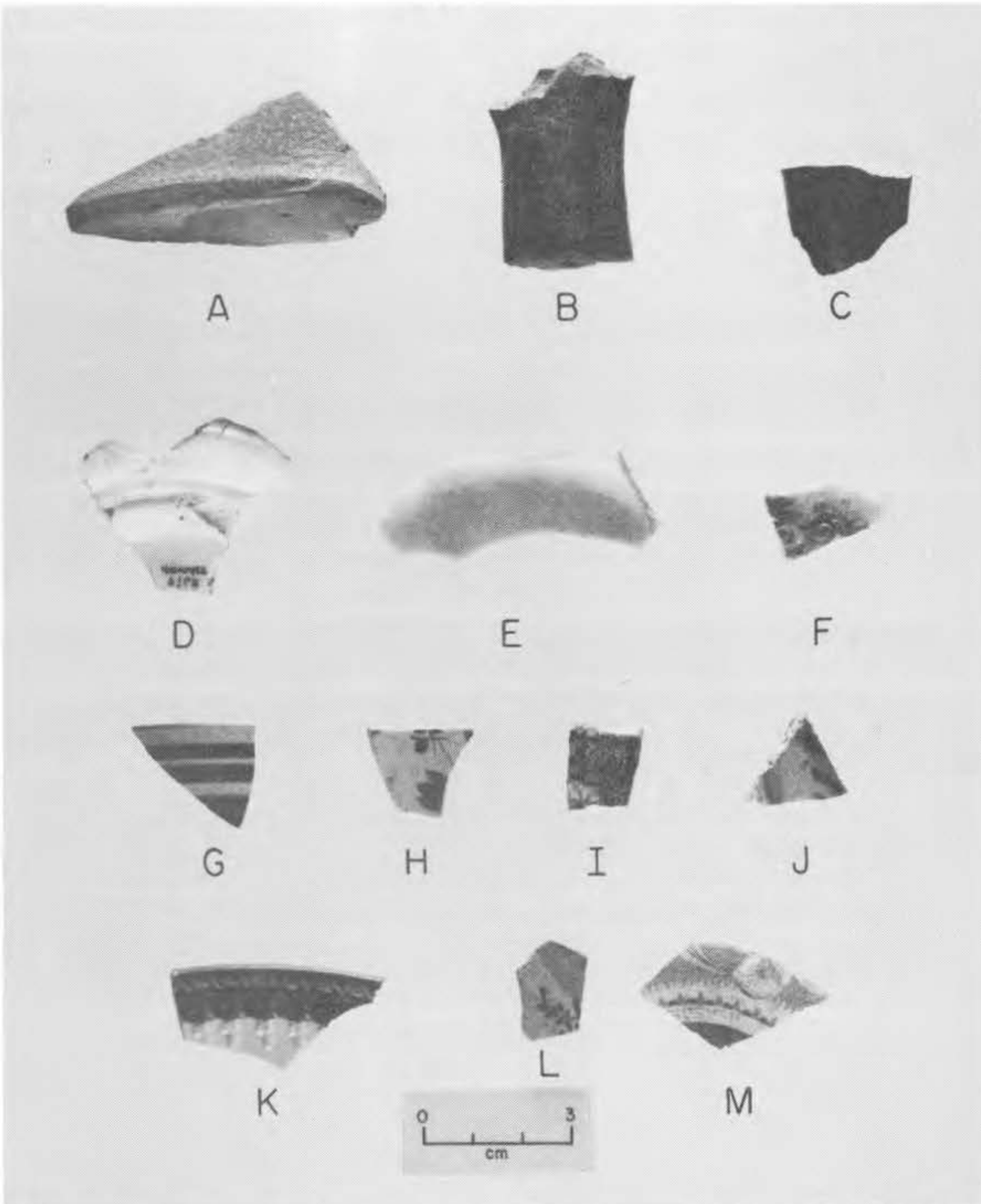

Figure 42. Kitchen Group Artifacts: Ceramics. Stoneware, A-Salt-glazed, B-Alkaline-glazed, C-Slip-glazed handle; Porcelain, D-Undecorated Bowl, E-Overglazed Enamelled Saucer, F-Sprig Decorated Saucer; Pearlware, G-Annular Ware Bowl, H-Underglaze Polychrome Saucer, I-Blue Transfer-printed Bowl, J-Blue Transfer-printed Bowl; Whiteware, K-Blue Edge-decorated Plate, L-Red Transfer-printed Cup, M-Red Transfer-printed Saucer.

While there were more whiteware sherds than pearlware sherds recovered, the former is represented by less vessels. Four plates were identified, one a blue shell-edge vessel and two from a blue edge-decorated set with the "rope and feathers" motif (Figure 42K). Another edge-decorated plate, represented by two small fragments is also possibly whiteware. A red transfer-printed tea set might be represented by a cup and saucer (Figures 42L and 42M). Another saucer was underglaze blue hand-painted. A matching cup might be represented by a plain body sherd that indicates this was a "London-shaped" vessel which dates after 1813 (Noel-Hume 1973).

Container glass. Eight sherds of container glass were found on the site. These include one modern clear glass fragment and five fragments that had been colorized a light amethyst. These latter sherds date from 1880 to 1915 (Munsey 1970:55) and like the clear sherd post-date the major historic occupation on the site represented by the ceramics. Two sherds that date from the earlier nineteenth century are a light blue-green fragment and an olive green fragment, the latter probably from a wine bottle.

Glassware. Two thick basal sherds from a clear glass tumbler were found in surface collection units 890 N, 930 E and 910 N, 930 E. These sherds could be refitted.

Kitchenware. Devices used to prepare and cook food are placed in this category. A single kitchenware artifact was found, a fragment of a cast-iron griddle. It is believed this dates from the early nineteenth century occupation of the site, not only because of its form, but also because it was found within the heaviest concentration of domestic debris around Feature 43.

Architectural Group

The distinct artifact assemblage is probably singularly noteworthy for the almost total absence of architectural artifacts in the collection. No flat or window glass was recovered and only three possible nail fragments were found in Feature 43. While over 100 years of cultivation would have undoubtedly taken its toll on iron nails, their virtual absence from the feature suggests that such fasteners were not commonly used in the construction of a building here.

Arms Group

A conical shot of the type known as a Minié ball and a lead buckshot were found on the site. The buckshot was found in Zone A of Feature 43 and probably dates from the occupation of the site. The Minié ball was found in surface collection unit 980 N, 940 E, approximately 65 meters north of Feature 43. It shows no evidence of being fired or impacted. This suggests that it was lost in activities not associated with the occupation of the site, possibly by Civil War troops passing on a road or lane that led to or past the house site along Aenon Creek. One local historian has pointed out that "Although there was never an official battle in Maury county, the heavy skirmishing, the guerrilla depredations, and the various occupations by both armies had kept the county in an almost constant state of turmoil throughout the Civil War" (Garrett and Lightfoot 1966:181).

Activities Group

One artifact was found which would fit into the Stable and Barn Class in South's classification. This is the iron portion of a singletree, probably from a plow or wagon. This was found in the 10 m x 10 m unit adjacent to where the Minié ball was recovered and might have been lost along a road or lane.

SITE INTERPRETATION: DISTRIBUTION OF ARTIFACTS

Using the pattern model approach, the percentages for the kitchen and architecture group artifacts place this assemblage squarely within Ball's (1984) open refuse pattern. According to Ball (1984:29), "The emphasis in this pattern is upon the secondary deposition of household debris." While the possibility cannot be totally dismissed that this is a peripheral secondary midden from a house site not excavated in the project, this interpretation seems to be unlikely for the following reasons. No other locus of early nineteenth century domestic occupation was found in the TDOT survey of the surrounding fields nor during the initial construction of the Saturn Parkway. Furthermore, the configuration of Feature 43 suggests a shallow pit under a dwelling. It is concluded that a house stood here in the 1830s, Feature 43 pinpointing its location. The domestic debris represented in the collection under study here is a peripheral secondary midden around the structure (Schiffer 1972).

The absence of window glass and the extreme rarity of nails suggests that this dwelling was a simple affair, possibly a single pen log cabin or "pole shack" with shuttered windows and a stick-and-clay chimney. Even if the hearth and chimney had been built of stone, all of the large fragments would have been hauled out of the field during the many years of cultivation. The "pole shack" was often the first temporary house of early settlers (Glassie 1965:43). These cabins, also called "turtle back shacks" have been described thusly:

> A turtleback shack was den-like in shape, with a low roof and low walls. Probably the logs were unhewn, the corners uneven, the floors of dirt, and the roof made of bark or clumsy shakes rather than riven shingles. Many had only small chimneys built of fieldstone up to a point, with clay-lined logs joining the flue, or perhaps of "cats," bundles of straw soaked in mud and laid like logs to form a chimney. The inside arrangement of such a simple place could hardly be called a plan. It was more a tiny bit of earth isolated from a hostile environment by four rough walls of logs (Bealer and Ellis 1979:23).

If Feature 43 is designated as the center of the dwelling, then the house lot can be divided into four quadrants for the purpose of plotting the distribution of artifacts in the adjacent secondary midden around it. The artifacts in general are concentrated to the west and south of Feature 43 or on the west and southwest slope of the terrace remnant on which the house stood.

When the distribution of the various ceramic wares and types in the controlled surface collection are plotted, four ceramic patterns are noteworthy. There appears to be a distinct difference in the distribution of refined earthenware and stoneware. The former is generally equally distributed on the east and west sides of Feature 43 but the latter shows a much heavier concentration on the west side. Likewise, refined earthenware is more heavily concentrated on the south side of Feature 43 whereas stoneware is much more numerous on the north side of the feature. These different patterns could be due to the function of these two wares; stoneware being used for utilitarian purposes and refined earthenware for table setting or it could merely be due to different transformational processes with the larger and heavier stoneware sherds being less moved by the plow.

There is also a difference in the distribution of pearlware and whiteware. Pearlware is evenly distributed to the north, south, east, and west of Feature 43. Whiteware, on the other hand, while fairly evenly distributed east and west of the proposed house center, is heavily concentrated on the south side of this point. The reason for this is unclear, although one could perhaps make a case that since pearlware is the earlier of the two refined earthenwares found on the site, it would have initially been scattered further by trampling, etc. during the occupation of the house. However, the fact that only 101 sherds representing 25 vessels were recovered here and the paucity of other domestic artifacts suggests that the occupation was of relatively short duration.

SITE INTERPRETATION: FUNCTION OF ARTIFACTS

The function of the ceramics can be used to establish the socioeconomic status of the people who lived on the Aenon Creek site in the early nineteenth century. The frequency of coarse utilitarian ware such as stoneware has been used as a yardstick for economic status, as has the occurrence of porcelain, the former being more characteristic of lower socioeconomic domestic sites and the latter being more indicative of affluence (Smith 1980). Stoneware sherds occurring at 26.7% of the total sherd count and 23.1% of the identified vessels place this site within the lower to middle ascribed social status of domestic sites in Tennessee compiled by Smith (1980:Table 1A). The percentage of porcelain at 5.0% of the total sherds and 11.5% of the vessels would appear to rank the Aenon Creek inhabitants somewhat higher but still within the range of a middle class social group (Smith 1980:Table 1A).

In his study of ceramics from coastal plain plantations, Otto (1977) has contrasted the frequency of edge-decorated flatware and sets of transfer-printed dinnerware, the former being primarily used by slaves and overseers, the latter by the planters. Recent research by the author on nineteenth century East Tennessee domestic sites also suggests that transfer-printed vessels are probably indicative of higher socioeconomic status (Faulkner 1984). At Aenon Creek, transfer-printed ceramics constitute 17.8% of the sherd types and 23.1% of the vessels whereas edge-decorated ceramics make up 11.9% of the sherd types and 19.2% of the vessels. These percentages indicate that transfer-printed vessels were as numerous as the cheaper edge-decorated ones in the ceramic inventory here. It should be noted, however, that none of the transfer-printed vessels are plates and at least two cup and saucer sets are present. In fact, if the site was occupied for a short period of time as is suggested by the amount of debris, it would appear that the table was set by a mixed collection of edge decorated plates; transfer-printed, underglaze polychrome, underglaze blue hand-painted, and porcelain cups and saucers; and annular ware bowls. No serving pieces were found. Such a piecemeal acquisition of ceramics could be considered characteristic of lower socioeconomic families.

The percentages of vessel types represented at Aenon Creek were also compared to those at three domestic house sites of yeoman farmers excavated by the author in East Tennessee: the Walker site (40KN121), the Roddy site (40KN85), and the Gibbs site (40KN124) (Table 21). The Aenon Creek ceramic assemblage is most like the Walker and Roddy sites in occurrence of plates, like Gibbs in the occurrence of saucers, and has the largest percentage of cups and especially bowls. Unlike the Gibbs and Roddy sites, no special pieces such as platters or desserts were found at Aenon Creek.

To summarize the data on the historic component at the Aenon Creek site, the architectural remains suggest a crudely built log cabin or "pole shack" with no glass windows and few metal fasteners. The cabin was probably occupied for a relatively short period of time during the decade of ca. 1830-1840. The artifacts, especially the ceramics, indicate the residents of this cabin were in the lower socioeconomic bracket, probably poor white settlers/squatters or black slaves.

Table 21. Comparison of Vessel Types from Nineteenth Century Domestic Sites.

Gibbs Site (40KN124)	%	Roddy Site (40KN85)	%	Walker Site (40KN121)	%	Aenon Creek Site (40MU493)	%
Plate	36	Plate	23	Plate	24	Plate	26
Saucer	30	Saucer	19	Saucer	13	Saucer	31
Cup	13	Cup	13	Cup	16	Cup	21
Bowl	8	Bowl	6	Bowl	3	Bowl	21
Platter	5	Dessert	2				
Serving	2						
Unidentifiable Flatware	2	Unidentifiable Flatware	5	Unidentifiable Flatware	31		
Unidentifiable Holloware	3	Unidentifiable Holloware	31	Unidentifiable Holloware	13		

CHAPTER XI

PREHISTORIC HUMAN ADAPTATION IN SELECTED AREAS OF THE INTERIOR LOW PLATEAU PHYSIOGRAPHIC PROVINCE

Charles Bentz, Jr.

The results of archaeological investigations undertaken in the Interior Low Plateau Physiographic Province offer the opportunity to study human adaptation and cultural change during Late Archaic through Middle Woodland times. Culture is interpreted as a dynamic and adaptive system that is comprised of structurally different but articulated parts (Binford 1965:205; Struever 1971:10). The interrelationship of these parts is such that change in one aspect results in change in other aspects through time. The basic attributes of such an adaptive system are technology, subsistence economy, settlement patterns, and mortuary practices.

The major emphasis of archaeological research in recent years has been placed upon adaptation and cultural change. The objective of such research is to isolate each attribute of adaptation and "study it as a separate variable or complex of variables, with the ultimate goal being the reconstruction of the entire pattern of articulation" (Flannery 1967:119-122). The data available from excavations in the Duck and Elk River drainages in Middle Tennessee, including the Aenon Creek site, will be used to study human adaptation and cultural change through the reconstruction of the pattern of articulation between the constituent attributes of the system.

MIDDLE AND UPPER DUCK AND ELK RIVER DRAINAGES

The Duck and Elk rivers drain the southern half of the Nashville Basin and adjacent portions of the Highland Rim in the Interior Low Plateau Physiographic Province. The Elk River flows to the southwest and joins the Middle Tennessee River while the Duck River flows to the west and meets the Lower Tennessee River.

Extensive archaeological investigations conducted in the Normandy Reservoir, Columbia Reservoir, and Shelby Bend Archaeological District on the Duck River and the Tims Ford Reservoir on the Elk River along with excavations conducted on additional sites in these drainages form the basis for the cultural chronology of the region.

The Upper Duck River (Normandy Reservoir) is located in a transitional zone between the Highland Rim and Nashville Basin. The valley floor (Nashville Basin) is narrow in the upper reaches of the drainage but widens and has extensive floodplain and terrace formations downstream. The uplands (Highland Rim) in upstream portions of the Normandy Reservoir are flat barrens with prairie areas while downstream the uplands are deeply dissected with long narrow sloping ridgetops separated by narrow steep sided valleys. The Upper Duck River Drainage is also an ecotone that is formed by the overlapping of the Western Mesophytic and Mixed Mesophytic forests (Faulkner and McCollough 1973:408, 1974:1-2). The Middle Duck River (Columbia Reservoir, Shelby Bend Archaeological District, and Aenon Creek site) is located in the Nashville Basin. The Basin is separated into inner and outer sections because of differences in the physiography and flora. Much of the uplands in the Inner Basin is marked by Cedar Glades and open patches in areas with little or no soil formation while the deep soil of the Duck River Valley floor in the Outer Basin and portions of the Inner Basin uplands support a typical Western Mesophytic forest (Braun 1950:131-132). The Tims Ford Reservoir is located on the Upper Elk River approximately 30 km south of the Normandy Reservoir. As with the Normandy Reservoir, Tims Ford is situated in a Nashville Basin-Highland Rim and Western-Mixed Mesophytic Forest transitional zone. The Upper Elk River Valley floor is relatively narrow throughout the Tims Ford Reservoir and does not have extensive floodplains as in the lower portion of the Normandy Reservoir.

Ledbetter Phase (3000-1000 B.C.)

During the Late Archaic Ledbetter phase seasonal hunting and gathering encampments occupied by single family units were comprised of pit clusters. Each cluster contained storage facilities, hearths, shallow basins, and occasional burials and postholes. Larger seasonal multifamily occupations contained groups of storage pits. Intensively utilized multifamily habitations occupied during the warm and/or cold weather contained storage pits, hearths, earth ovens, midden accumulations, open shelters, enclosed structures, and a number of burials.

The Aaron Shelton site (40CF69) in the Upper Duck River Valley contained four separate family unit pit clusters. Each cluster was comprised of at least one large flat bottom storage pit along with hearths and shallow basins. The Jernigan II site (40CF37) in the Upper Duck River Valley contained a group of eight storage pits that probably served as a central location for the caching of foodstuffs by multiple families. The Bailey site (40GL26) in the Elk River Drainage contained at least two separate multifamily feature clusters. One cluster was comprised of an enclosed structure, open shelters, storage pits, hearths, earth ovens, burials, and shallow pits of indeterminate function. The second cluster consisted of open shelters, storage pits, and shallow pits of indeterminate function. The enclosed structure measured 10.5 m x 8.9 m (floor area-73.4 m^2) and contained a central cluster of pits consisting of three storage pits and a hearth. The open-sided rectangular shelters measured 4.1-7.0 m x 2.6-4.0 m with floor areas of 11.6-26.7 m^2 (mean= 5.7 m x 3.1 m, floor area-17.7 m^2). The shelters often contained storage pits, hearths, and shallow pits of indeterminate function (Bentz 1988a:46-50, 60-73; Faulkner and McCollough 1982a:169, 182, 283; Wagner 1982:418-419, 429-433, 439, 515-517).

Subsistence was based on the intensive gathering and storage of arboreal seed crops (hickory and walnut) and the exploitation of various faunal resources (fish, turtle, turkey, deer, opossum, raccoon, rabbit, and squirrel). This was possibly supplemented by simple horticulture (squash and gourd) (Crites 1988:280; Faulkner and McCollough 1982a:225, 285-286; Snyder and Dickinson 1988:248-262).

Mortuary practices included the cremation of articulated skeletons in shallow pits and primary inhumations in shallow pits and middens (Myster 1988:184; Wagner 1982:493).

The material assemblage includes Ledbetter cluster (Ledbetter, Pickwick, Mulberry Creek, and Maples) projectile points/knives, occasional Benton cluster and Little Bear Creek cluster projectile points/knives, thick bifaces, unifacial tools, bone awls and fishhooks, and modified antler and turtle shell (Entorf 1988:129-147; Faulkner and McCollough 1974:575, 1982a:286-289; Snyder and Dickinson 1988:266). Nonlocal artifacts and materials derived through interregional exchange were lacking.

Wade Phase (1200-450 B.C.)

During the terminal Late Archaic Wade phase most sites were seasonally occupied hunting and gathering encampments comprised of storage pits, limestone-filled earth ovens, and burial facilities. Clusters of deep vertical wall pits on some sites indicated that food storage was an important activity. A greater degree of sedentism occurred on the few fall/winter sites with enclosed dwellings.

An enclosed structure on the Ewell III site (40CF118) in the Upper Duck River Valley measured 4.6 m in diameter (floor area-16.6 m^2) and contained a central posthole, a hearth, and a large refuse pit. Lightly built warm weather shelters were also constructed. The Aaron Shelton site (40CF69) in the Upper Duck River Valley had a Wade component that included a storage pit and a large oval basin surrounded by a cluster of eight postholes that probably supported a shelter windbreak (Davis 1978:336-337; DuVall 1982:37-39, 61, 146; Faulkner 1977:269; Faulkner and McCollough 1974:233-234, 317-324, 1982a:290; Keel 1978:13, 112, 117-120, 130; Wagner 1982:517-518).

Subsistence was based on the gathering of arboreal seed crops and possibly herbaceous seeds and the exploitation of various faunal resources (deer, turkey, squirrel, raccoon and occasionally fish, mussel, and aquatic turtle). This was supplemented by simple horticulture (squash and gourd). Sunflower seeds were recovered from a terminal Late Archaic site in the Middle Cumberland River Drainage to the north of the Duck River (Crites 1986:99; Faulkner 1977:269; Faulkner and McCollough 1982a:290-291; Herbert 1986:161).

Burials were flexed and on the side or occasionally sitting in pits excavated for the interment of the dead. Domestic facilities were generally not reused as burial chambers. Burials were located at the margins of large occupation areas, occasional burials were found on small habitations, and at the Oldroy site (40HI131) in the Middle Duck River Valley a large cemetery area was associated with a small occupation area consisting of a few domestic facilities. Mortuary offerings recovered with individual burials varied from few, if any, artifacts to an abundance of bone tools and local and nonlocal stone artifacts (Davis 1978:336; Faulkner and McCollough 1982a:290; Herbert 1986:151, 169-171; Keel 1978:160).

The material assemblage includes Wade cluster (Wade, Motley, McIntire, and Cotaco Creek) and Little Bear Creek cluster projectile points/knives, stone digging implements, sandstone bowls, stone gorgets, turkey bone awls, and deer bone tools. Nonlocal artifacts derived through interregional exchange consist of steatite and micaceous schist bowls and occasionally late Gulf Formational Alexander series ceramics (Herbert 1986:161; Keel 1978:65, 130, 153-155).

Watts Bar and Longbranch Phases (700-200 B.C.)

Few Early Woodland sites have been investigated in the Duck and Elk River drainages. The Watts Bar and Longbranch phases are described together because little data is available for the Early Woodland period in the region. In the Upper Duck River Drainage during the Early Woodland Watts Bar and Longbranch phases occupations consisted of pit clusters or scattered pits on large multicomponent sites. The Jernigan II site (40CF37) Longbranch phase component included three clusters of 4-8 pit features. These clusters consisted mostly of basins, storage pits, earth ovens, and burials. One pit cluster may have been associated with a group of four burials (Faulkner and McCollough 1974:325, 1982a:293; Keel 1978:136).

Subsistence was virtually identical to that of the preceding terminal Late Archaic Wade phase. Herbaceous seeds may have been exploited more intensively during the Early Woodland period (Faulkner and McCollough 1982a:294-295, 300; Keel 1978:160-163).

Burials occurred singly or in small groups among clusters of domestic facilities. The burials were flexed and placed in shallow oval graves. Mortuary offerings were not found in association with the burials, which differs from the burial practices of the earlier Wade phase (Faulkner and McCollough 1982a:300).

The ceramics of the early Early Woodland Watts Bar phase are quartz tempered fabric marked (Watts Bar Fabric Marked) while the late Early Woodland Longbranch phase ceramics are limestone tempered fabric marked (Longbranch Fabric Marked). Ceramic vessels replaced stone vessels during the Early Woodland period in the Upper Duck River Drainage. The terminal Late Archaic Wade cluster projectile points/knives were replaced by Rounded-base cluster types during the Watts Bar phase (Faulkner and McCollough 1973:117; 1982a:297, 299; Keel 1978:160).

McFarland Phase (200 B.C.-A.D. 200)

During the early Middle Woodland McFarland phase short-term encampments and multiseasonal or possibly year around habitations were established on the first and second terraces of the Upper Duck River. Sites were occasionally located on the floodplain and in the uplands of the Upper Duck River and in the valley of the Upper Elk

River (Kline et al. 1982:4). Family groups moved in a restricted area around seasonal or multiseasonal base camps and villages. These groups temporarily gathered at a mortuary/habitation site or ceremonial center to engage in social activities, trade, and mortuary activities. Permanent year-round villages probably developed late in the McFarland phase and intensified during the late Middle Woodland Owl Hollow phase.

McFarland phase villages contained circular and oval enclosed structures and semicircular and semisquare open cabana-type shelters. The enclosed structures measured 6.1-9.4 m x 5.0-7.3 m (floor areas=28.6-53.9 m^2) and contained interior basins, storage pits, processing pits, and occasionally hearths. Some structures probably had pitched conical roofs while others were dome-like constructions formed by tensioning and tying saplings set in the wall postholes. The shelters measured 4.4-7.6 m x 2.7-5.0 m (floor areas=7.3-33.9 m^2) and usually lacked interior pits and postholes. These shelters were probably utilized during the warm season while the substantially constructed enclosed structures with interior pits were cold season dwellings. Domestic activity zones consisting of cooking, processing, and storage pits may have functioned as either outdoor work areas associated with structures or as separate warm weather occupations utilized by individual families (DuVall 1982:20-28, 39-79; Faulkner 1977:69-274; Faulkner and McCollough 1974:87-89, 1982b:314-445; Faulkner and McCollough, eds. 1982b:303-388; Kline et al. 1982:22-31; McCollough and DuVall 1976:116-134). Temporary base camps consisted of a single structure and associated pits. Transient camps contained 1-13 pits but lacked structures (Bacon 1982:177; Bacon and Merryman 1973:10-20; Cobb 1978:198-199; Faulkner and McCollough 1974:109-116, 125-129; Keel 1978:20, 163-168; McCollough 1978:33-51; McCollough and DuVall 1976:29-57, 81).

Subsistence was based on the gathering of arboreal seed crops (hickory, butternut, and acorn), simple horticulture (sunflower, squash, gourd, and maize), and the exploitation of deer, turkey, and small animals. Wild and cultivated plant foods may have been kept in the storage facilities within enclosed structures for winter use (Brown 1982a:528-529; Crites 1982:538-539; Faulkner 1977:156-157; Kline et al. 1982:55-64).

Mortuary practices consisted of flexed primary inhumations (early) and cremations (late). Flesh burials were placed in shallow and deep basins and pits and cremations were redeposited in small shallow basins (Brown 1982b:84-90; Wagner 1982:494).

The material assemblage includes limestone tempered plain (Mulberry Creek Plain), check stamped (Wright Check Stamped), and fabric marked (Longbranch Fabric Marked) ceramics. The lithics include medium triangular McFarland cluster (McFarland) and a few Lanceolate Expanded Stem cluster (Bakers Creek and Swan Lake) projectile points/knives, sandstone elbow pipes, gorgets, and shale digging implements. Nonlocal lithic artifacts and raw materials derived through interregional exchange consist of greenstone celts and occasional scraps of unworked mica (Faulkner 1977:157-159; Faulkner and McCollough 1974:330-331; Kline et al. 1982:4).

Neel Phase (450 B.C.-A.D. 150)

The early Middle Woodland Neel phase represents a distinct local early Middle Woodland manifestation, contemporary to much of the McFarland phase, that consisted of mortuary/habitation sites for social intensification and seasonal or multiseasonal encampments occupied by nuclear or extended families and occasionally multiple families.

Neel phase mortuary/habitation sites contained subrectangular, rectangular, and square enclosed structures. A single semicircular open cabana-type shelter was also represented. The enclosed structures measured 6.0-13.0 m x 3.1-12.0 m (floor areas=17.7-156.0 m^2) and the open shelter measured 7.7 m x 4.7 m (floor area-28.4 m^2). Cooking, heating, and storage facilities were often found within or in close proximity to the small lightly built enclosed dwellings. Larger more substantial structures may have been associated with mortuary activities on the sites. Seasonal to multiseasonal base camps contained a single structure and associated pits and transient camps were comprised of a few pits (Bacon 1982:178-179; Butler 1968:202, 1977:1-4, 7-10, 1979:151-153; Faulkner 1977:163-164).

The subsistence pattern was probably similar to that of the McFarland phase.

Mortuary practices consisted of cremation of the dead in pits located near mortuary/habitation sites. The cremated remains were redeposited in small pits clustered adjacent to structures. Occasional primary and secondary flesh inhumations, including extended burials, were interred in the burial areas along with the redeposited cremations. Exotic materials were sometimes recovered from mortuary contexts (Bacon 1982:180-182; Butler 1977:4, 1979:152).

The material assemblage includes limestone tempered plain (Mulberry Creek Plain), cordmarked (Flint River Cordmarked), check stamped (Wright Check Stamped), simple stamped (Bluff Creek Simple Stamped), and complicated stamped (Pickwick Complicated Stamped) ceramics. Nonlocal ceramics include limestone tempered red slipped over plain, red slipped over complicated stamped, and incised/punctated; sand tempered plain, incised, punctated, simple stamped, and rocker stamped over cordmarked; grog tempered oval rocker-dentate stamped and diamond and dot check stamped; and grit-grog tempered rocker stamped. The lithic assemblage includes McFarland cluster (McFarland and Copena) and Lanceolate Expanded Stem cluster (Bakers Creek and Swan Lake) projectile points/knives, rectanguloid siltstone elbow pipes, two hole shale gorgets, and a core and blade industry on local cherts. Nonlocal lithic artifacts and raw materials derived through interregional exchange consist of greenstone celts, copper earspools, mica, galena, quartz crystals, serpentine, and Flint Ridge prismatic blades (Bacon 1982:178-182; Butler 1968:163, 177, 202-204, 1977:4, 7-8, 12, 1979:153-155; Faulkner 1977:165).

Owl Hollow Phase (A.D. 200-700)

During the late Middle Woodland Owl Hollow phase permanent and semipermanent villages were established in the Upper Duck and Elk River drainages. The number of sites decreased as individual settlements became more intensively occupied by larger groups of people. Additional habitations consisting of ancillary base camps and transient camps were affiliated with the larger more permanent villages (Cobb 1978:170, 199-200, 1985:413-419; Faulkner and McCollough 1974:578).

Owl Hollow phase villages contained mostly circular and oval enclosed structures. Occasional examples of square enclosed structures and semicircular open cabana-type shelters were also represented. The enclosed structures measured 5.3-13.7 m x 4.7-11.4 m (floor areas=19.6-139.4 m^2) and the single semicircular shelter measured 5.3 m x 2.7 m (floor area-11.2 m^2). Large substantially constructed double earth oven houses were multifamily winter dwellings with spatially distinct interior activity areas. These structures seldom contained interior facilities other than centrally located paired cooking/heating pits. The smaller lightly built enclosed structures and the open cabana-type shelter were single family warm weather dwellings. These structures occasionally contained a centrally located hearth or a shallow storage or processing pit. The double earth oven houses probably had pitched conical roofs while the lightly built enclosed structures were dome-like constructions formed by tensioning and tying saplings set in the wall postholes (Cobb 1978:105-170, 199-200, 1982:159-169, 232-234, 289-300, 1985:417-419; Cobb and Faulkner 1978:3, 10-130; Faulkner and McCollough 1974:125-129, 138-139, 263-393, 547, 578).

Subsistence was based on the intensive gathering of arboreal seed crops (hickory, acorn, and chestnut) and herbaceous seeds (lambsquarter, knotweed, and maygrass), the exploitation of various faunal resources (deer, turkey, small mammals, mussels, fish, and reptiles), and an increasing amount of simple horticulture (sunflower, squash, gourd, and maize) (Cobb 1978:199-200, 1982:232-234, 1985:414-418; Cobb and Faulkner 1978:3, 128-130; Faulkner 1978:187; Faulkner et al. 1976:235-236; Faulkner and McCollough 1974:574, 578; Robison 1986:341-343; Shea 1978:617).

Mortuary practices consisted of redeposited cremations in shallow pits or basins and occasional semiflexed or flexed primary flesh inhumations placed in shallow pits or midden deposits (Brown 1982b:130-135).

The ceramics are predominantly limestone tempered plain (Mulberry Creek Plain) and simple stamped (Bluff Creek Simple Stamped). Nonlocal ceramics are represented by a limestone/grit tempered zoned rocker stamped vessel. The lithic assemblage includes Lanceolate Expanded Stem cluster (Bakers Creek and Swan Lake) and Lanceolate Spike cluster (Bradley Spike and Flint River Spike) projectile points/knives, microlith tools, stone elbow pipes, stone gorgets, and a rudimentary blade technology on local cherts (Cobb 1985:417-420; Cobb and Faulkner 1978:3, 128-130; Faulkner and McCollough 1974:334, 578-579).

The Edmondson Bridge site (40MU423), a late Middle Woodland village on a tributary of the Middle Duck River, was contemporary to the Owl Hollow phase in the

Upper Duck and Elk River drainages. The site contained a complex of at least three single post structures, a few midden areas, and numerous shallow pits. The structures were oval and subrectangular in shape and measured 8.0-14.0 m x 5.0-10.5 m (floor areas=35.7-115.4 m^2). A large oval house with six interior pits, including two earth ovens, was probably a cold season dwelling and a lightly built subrectangular structure with one interior pit was a warm weather dwelling. A small subrectangular structure to the east of the dwellings may have been used in ceremonial activities on the site (Bentz 1986a:215-223).

Subsistence was based on the gathering of arboreal seed crops and the exploitation of various terrestrial and aquatic animals (deer, mussels, and fish). This was supplemented by simple horticulture (squash and sunflower) (Bentz 1986a:227).

The ceramics from the Edmondson Bridge site are predominantly quartz tempered plain and limestone tempered plain (Mulberry Creek Plain). The lithic assemblage includes Lanceolate Expanded Stem cluster (Bakers Creek and Swan Lake) and occasional Lanceolate Spike cluster (Bradley Spike and Flint River Spike) projectile points/knives. Nonlocal lithic raw materials derived through interregional exchange consist of copper, mica, and micaceous schist (Bentz 1986a:218-220).

AENON CREEK SITE

Aenon Creek flows through the Nashville Basin section of the Interior Low Plateau Physiographic Province and joins Rutherford Creek, which flows into the Duck River approximately 32 km from the confluence of the creeks. At the site, the Aenon Creek Valley exposes Ordovician Carters and Lebanon limestones of the Inner Basin while nearby upland areas rest on Ordovician Bigby-Cannon and Hermitage limestones of the Outer Basin. This area is situated in the Western Mesophytic Forest region and the diverse flora and fauna of the Inner and Outer Basin are available at and around the site (q.v. Environmental Setting).

Ledbetter Phase (2400-2100 B.C.)

During the Late Archaic Ledbetter phase around 2250 B.C. a small temporary encampment was established on a Pleistocene terrace of Aenon Creek at the site location. The occupation area was comprised of at least two shallow (Class 3) pits spaced approximately 8 m apart along the west edge of the site. This ephemeral habitation was probably linked with larger more permanent settlements in the Duck and Elk River drainages.

Subsistence was based on the gathering of arboreal seed crops (hickory and occasionally acorn and hazelnut) and probably the exploitation of various faunal resources. This was possibly supplemented by simple horticulture (squash and gourd). The few pieces of bone recovered from the Ledbetter pit features were unidentifiable.

Evidence of Late Archaic mortuary activities was lacking at the Aenon Creek site.

The material assemblage includes Ledbetter cluster projectile points/knives and a large quantity of chert debitage. Among the 41 shallow (Class 3) pits on the site, only 4 contained more chert debris than the 2 Ledbetter pits.

The one radiocarbon age determination from the Late Archaic component of the Aenon Creek site occurs near the mean date for the Ledbetter phase (q.v. Radiocarbon Dates). Typical attributes of the Ledbetter phase, such as large deep storage pits and shelter/windbreak form structures, were absent but Ledbetter cluster projectile points/knives were recovered from surface and pit contexts. The few shallow features and lack of substantial storage facilities and structures are indicative of the ephemeral nature of the Late Archaic Ledbetter phase occupation of the site.

Neel Phase and Neel Phase/McFarland Phase (450 B.C.-A.D. 150)

During the early early Middle Woodland Neel phase and late early Middle Woodland Neel phase or possibly McFarland phase (450-270 B.C. and A.D. 70) habitations were established at the Aenon Creek site location. These settlements were comprised of a semicircular shelter, numerous pits, including storage facilities, and redeposited cremations. Domestic activity zones on the site were indicated by clusters of 2-5 medium and shallow pits.

The structure consisted of a semicircular arc of four postholes situated along the east edge of the feature distribution. The shelter lacked interior features and the open side faced northeast.

Subsistence was based on the gathering of arboreal and herbaceous seeds (hickory and occasionally black walnut, acorn, and hazelnut and goosefoot and maygrass) and the exploitation of various faunal resources (fish, turtle, bird, rabbit, opossum, and deer). This was probably supplemented by simple horticulture (squash and gourd).

Two cremations were redeposited into a shallow pit.

The ceramics are limestone tempered plain (Mulberry Creek Plain), cordmarked (Flint River Cordmarked), check stamped (Wright Check Stamped), and fabric impressed (Longbranch Fabric Marked). Nonlocal ceramics are not represented in the material assemblage. The lithic assemblage includes projectile points/knives (McFarland cluster and Lanceolate Expanded Stem cluster), unstemmed bifaces, and a large quantity of chert debris. Interregional exchange is suggested by a single piece of galena recovered from a historic feature that was excavated into a Neel phase pit.

Three radiocarbon age determinations from the early Middle Woodland Neel phase and Neel phase/McFarland phase component at the Aenon Creek site overlap the lower end of the time range for the Early Woodland Watts Bar phase and a single Early Woodland Longbranch phase date as well as most of the time ranges for the early

Middle Woodland Neel phase and McFarland phase (q.v. Radiocarbon Dates). Typical attributes of the Neel phase found at the site included limestone tempered plain, cordmarked, check stamped, and fabric impressed ceramics; McFarland cluster and Lanceolate Expanded Stem cluster projectile points/knives; and redeposited cremations. The ceramics are typical of both the late Early Woodland and early early Middle Woodland (Longbranch Fabric Marked) and late early Middle Woodland (Mulberry Creek Plain and Wright Check Stamped). The McFarland cluster projectile points/knives are also typical of the late Early Woodland and early early Middle Woodland while Lanceolate Expanded Stem cluster projectile points/knives do not appear until the late early Middle Woodland.

Other Early Archaic through Late Woodland/Mississippian occupations at the Aenon Creek site are represented by occasional material remains but lacked subsurface features.

HUMAN ADAPTATION FROM LATE ARCHAIC THROUGH MIDDLE WOODLAND TIMES

During the Late and terminal Late Archaic small temporary to large semipermanent hunting and gathering encampments were established in the forested upland areas between the major rivers of the Interior Low Plateau Province. The large habitations contained storage pits, shelters, enclosed structures, burials, and midden deposits. The smaller sites generally consisted of a few pits or pit clusters but generally lacked structures, middens, and burials. During the Early Woodland period in the Upper Duck River Drainage settlements consisted of clusters of storage, cooking, and processing pits. Early Middle Woodland semipermanent base camps and villages were established in the main river valleys and adjacent uplands. These sites were articulated with smaller transient camps. Family groups occupying the transient encampments moved in a restricted area around the base camps, large habitation sites, and mortuary/habitation sites. Multiple family groups temporarily gathered at the base camps to exploit seasonally available food resources and at the large sites to participate in social functions, trade, and mortuary activities. The pattern of articulation between base camps and transitory camps continued through the late Middle Woodland; however, the mortuary/habitation sites were absent by about A.D. 500 and replaced by intensively occupied and more permanent villages. Villages were comprised of multiple structures, numerous pits, and often substantial midden deposits. Paired warm and cold season dwellings were evident on sites in the Duck River Drainage.

Subsistence during the Late Archaic through Middle Woodland was based on the gathering of wild plant foods and the exploitation of various faunal resources. Arboreal seed crops were gathered from Late Archaic through Middle Woodland times. Herbaceous seeds were gathered in increasing quantities and varieties from the terminal Late Archaic to the late Middle Woodland. Simple horticulture (squash, gourd, and sunflower) began during the Archaic and intensified during the Middle Woodland with the appearance of maize. Deer was a major food resource from Late Archaic through Middle Woodland times. Other smaller animals that were consistently utilized included rabbit, squirrel, raccoon, opossum, turkey, turtle, and fish.

Mortuary practices during the Late Archaic through Early Woodland consisted mostly of flexed burials placed in pits excavated for the interment of the dead. Sitting burials and cremation occurred less often on Archaic sites. Burials were found singly or in small groups on habitation sites. Local and nonlocal mortuary offerings with terminal Late Archaic Wade phase burials in the Duck River Drainage consisted of projectile points/knives, bifaces, pecked and ground stone tools, stone bowls, beads, and bone tools. Grave goods were generally absent during the Late Archaic Ledbetter phase and Early Woodland Watts Bar and Longbranch phases. During the Middle Woodland period groups temporarily gathered at large mortuary/habitation sites to participate in social activities, which often included the preparation and burial of the dead. In the Duck and Elk River valleys early Middle Woodland mortuary/habitation sites were comprised of flimsy shelters, pits, and mortuary zones. The mortuary zones consisted of redeposited cremations and occasional primary inhumations, crematory pits, and structures that may have been utilized in preparation of the dead. Similar mortuary zones may have also occurred on more permanent late Middle Woodland villages in the Middle Duck River Drainage. The early Middle Woodland is distinguished, in part, by the number and variety of nonlocal ceramic and lithic items that were obtained through trade for inclusion as mortuary offerings. These grave goods include ceramics from other regions, greenstone implements, serpentine, galena, quartz crystals, Flint Ridge chert prismatic blades, mica, and copper. During late Middle Woodland times the apparent increased sedentism and intensity of site occupation was paralleled by decreasing participation in interregional exchange networks. Mortuary offerings include occasional nonlocal lithics, ceramics, and marine shell.

During the Early Woodland period through Middle Woodland period a variety of tempering agents and surface treatments were used in the manufacture of ceramic vessels. The Early Woodland pottery in the Middle and Upper Duck and Elk River drainages was tempered with quartz or limestone and fabric marked. Middle Woodland pottery was tempered with quartz or limestone in the Duck and Elk River drainages. The dominant surface treatments during the early Middle Woodland were initially cordmarked, fabric impressed, and plain. Check stamped and plain ceramics were codominant in the Duck River Valley by the end of the early Middle Woodland (A.D. 1-200). Late Middle Woodland ceramics were predominantly plain and occasionally paddle stamped. Interregional exchange during the Middle Woodland period brought a variety of nonlocal ceramic wares into all areas.

Late Archaic through Middle Woodland lithic assemblages included projectile points/knives, bifaces, flake tools, and a variety of pecked and ground stone tools. During Woodland times microlith tools and a blade industry were also included in the assemblage. Benton, Ledbetter, Little Bear Creek, Wade, and Flint Creek cluster projectile points/knives occurred during the Late Archaic and terminal Late Archaic. Pestles, mortars, hammerstones, limestone digging implements, and stone gorgets occurred in varying frequencies. Stone bowls manufactured from local and nonlocal materials occurred during terminal Late Archaic times. Early Woodland lithic assemblages in the Middle and Upper Duck and Elk River drainages contained Wade cluster and Rounded-base cluster projectile points/knives. The McFarland cluster projectile points/knives were prevalent during early Middle Woodland times. Lanceolate Expanded Stem cluster and Lanceolate Spike cluster projectile points/knives appeared during the early Middle Woodland and continued into the late Middle Woodland. Blade industries on local cherts occurred during early Middle Woodland times. Stone gorgets, microlith tools, and elbow pipes were found in the Duck River and Elk River drainages during the late Middle Woodland.

CHAPTER XII

SUMMARY

Charles Bentz, Jr.

A program of Phase II testing and Phase III data recovery was conducted at the Aenon Creek site (40MU493) by The University of Tennessee-Knoxville for the Tennessee Department of Transportation in conjunction with construction of the Saturn Parkway and an associated interchange in Maury County, Tennessee. The site is located on Aenon Creek approximately 35 km from the Duck River.

Excavations revealed early Middle Woodland Neel phase and Neel phase/McFarland phase habitations comprised of a shelter, numerous pits including storage facilities, and cremations. The site is one of three excavated nonmortuary Neel phase sites in the Interior Low Plateau and the only Neel site investigated in the Middle Duck River Drainage. This settlement represents one of the earliest Middle Woodland sites in the region (450-270 B.C.). Cultural continuity from the Early Woodland to Middle Woodland is indicated by the occurrence at the Aenon Creek site of limestone tempered fabric impressed ceramics typical of the Longbranch phase and early McFarland phase along with limestone tempered plain and paddle stamped ceramics typical of the late McFarland phase. McFarland cluster and Lanceolate Expanded Stem cluster projectile points/knives occur together on the Aenon Creek site. The McFarland cluster is typical of the Longbranch phase and McFarland phase while the Lanceolate Expanded Stem cluster does not appear until Middle Woodland times.

The site investigations also revealed an ephemeral Late Archaic Ledbetter phase occupation consisting of at least two shallow pits. This encampment was probably associated with larger more permanent habitations in the region. A historic nineteenth century habitation was represented by a rectangular pit.

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