5-1-1997

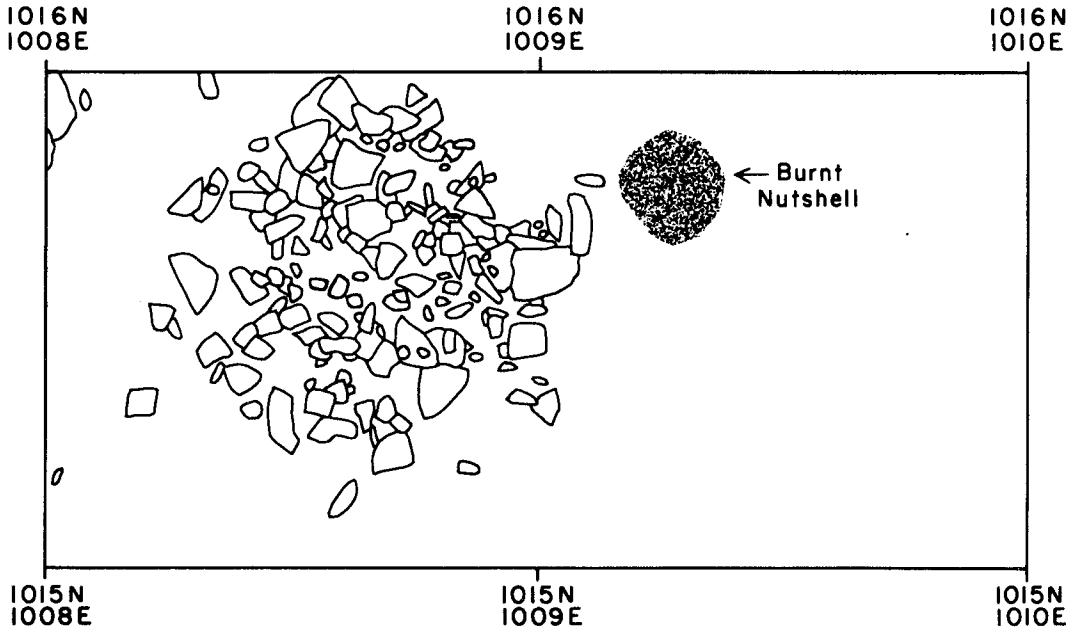
No. 5, Archaeological Investigations at the Forbus Site (40FN122), An Unplowed Multicomponent Site in the Eastern Highland Rim of Tennessee

Charles Bentz Jr.

Tennessee. Department of Environment & Conservation.

ARCHAEOLOGICAL INVESTIGATIONS AT THE FORBUS SITE (40FN122):

AN UNPLOWED MULTICOMPONENT SITE IN THE EASTERN HIGHLAND RIM OF TENNESSEE



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TENNESSEE DEPARTMENT OF ENVIRONMENT AND CONSERVATION
DIVISION OF ARCHAEOLOGY
MISCELLANEOUS PUBLICATION NO. 5

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

TENNESSEE DEPARTMENT OF TRANSPORTATION
ENVIRONMENTAL PLANNING OFFICE
PUBLICATIONS IN ARCHAEOLOGY NO. 3

1997

ARCHAEOLOGICAL INVESTIGATIONS AT THE FORBUS SITE (40FN122): AN UNPLOWED MULTICOMPONENT SITE IN THE EASTERN HIGHLAND RIM OF TENNESSEE

PREPARED FOR

The Tennessee Department of Transportation
J.K. Polk Building, Suite 900
Nashville, TN 37219 615/741-5257

IN COORDINATION WITH

The U.S. Department of Transportation
Federal Highway Administration

UNDER

TDOT Project Number 25001-1255-94
Tennessee State Archaeological Permit Number 000056

BY

Transportation Center
The University of Tennessee
Knoxville, TN 37996-0700 615/974-2771

SUBMITTED AUGUST 1990

PUBLISHED MAY 1997

Edited by:

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Tennessee Department of Transportation
Environmental Planning Office
Publications in Archaeology No. 3

Tennessee Department of Environment and Conservation
Division of Archaeology
Miscellaneous Publication No. 5

Funding for this project and the publication of this report was provided by the U.S. Department of Transportation, Federal Highway Administration. The TDOT administered the project contracts.

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ACKNOWLEDGEMENTS

Funding for the Forbus site (40FN122) investigations was provided by the Federal Highway Administration and the Tennessee Department of Transportation (TDOT Project Number 25001-1255-94). Charles Bentz, Jr. served as the Principal Investigator. Gerald Kline, staff archaeologist with the Tennessee Department of Transportation, acted as liaison and his help with this project is appreciated. Katherine Sanford, of the Tennessee Department of Environment and Conservation, Division of Archaeology under contract with the Tennessee Department of Transportation, completed the final editing of the report in its preparation for publication. Danielle Meyers assisted in the final editing of the report.

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INTRODUCTION

Andrew P. Bradbury

The Forbus site (40FN122) is located within the Forbus Historic District approximately 0.5 km south of Forbus, Tennessee. It is situated on an alluvial terrace of Caney Creek. The creek flows into the Wolf River approximately 2.2 km south of 40FN122 (Figures 1-3). The site is bounded on the northeast by State Route 28 and on the southeast by Caney Creek. A small tributary creek defines the northwest edge of the site. The tributary empties into Caney Creek at the southwest terminus of the site. The site is located in the Highland Rim section of the Interior Low Plateau Physiographic Province. Outliers of the Cumberland Plateau section of the Appalachian Plateaus Physiographic Province are located within 2.0 km of the site.

The Forbus site was first identified in June, 1989, by Tennessee Department of Transportation archaeologists who were conducting an archaeological survey of land to be impacted by a proposed bridge replacement and road relocation project over Caney Creek on State Route 28. A site area measuring 75 m (N-S) by 36 m (E-W) was delimited from lithic artifacts observed on the surface. An area of the site measuring 31 m (N-S) by 36 m (E-W) would be adversely affected by construction activities (Figure 4).

The University of Tennessee-Knoxville was contracted by the Tennessee Department of Transportation to undertake a program of Phase II archaeological testing at the Forbus site. Test excavations were conducted from October 5-16, 1989. A total of 312 work hours was expended at the site to determine its potential archaeological significance. This phase of the investigations consisted of soil probing and the hand excavation of test units. Soil cores were taken with a tube-sample probe at 2 m intervals across the site to determine soil stratigraphy and locate subsurface cultural features and deposits. One area of ashy soil associated with the historic component was located. Sixteen 1 m x 1 m test units were excavated across the site area, concentrating on a slight ridge along the eastern portion of the site and on a small knoll at the north end of the site. Evidence of modern agricultural activities on the site was lacking and the majority of the cultural remains were contained in undisturbed alluvial deposits beneath the humus. No pit features were encountered during excavation; however, two large rock concentrations and several smaller rock clusters were observed and excavated. Further archaeological investigations were recommended at this time.

A Phase III data recovery program was subsequently undertaken by University of Tennessee archaeologists from December 10-17, 1989. A total of 211 work hours was expended at 40FN122 during this period. Nine 1 m x 1 m units were excavated to further extend the two trenches excavated in the course of the Phase II testing. In addition, one 1 m x 1 m unit excavated during the Phase II investigations was dug into deeper strata. Several more small rock clusters were observed and excavated as part of the data recovery.

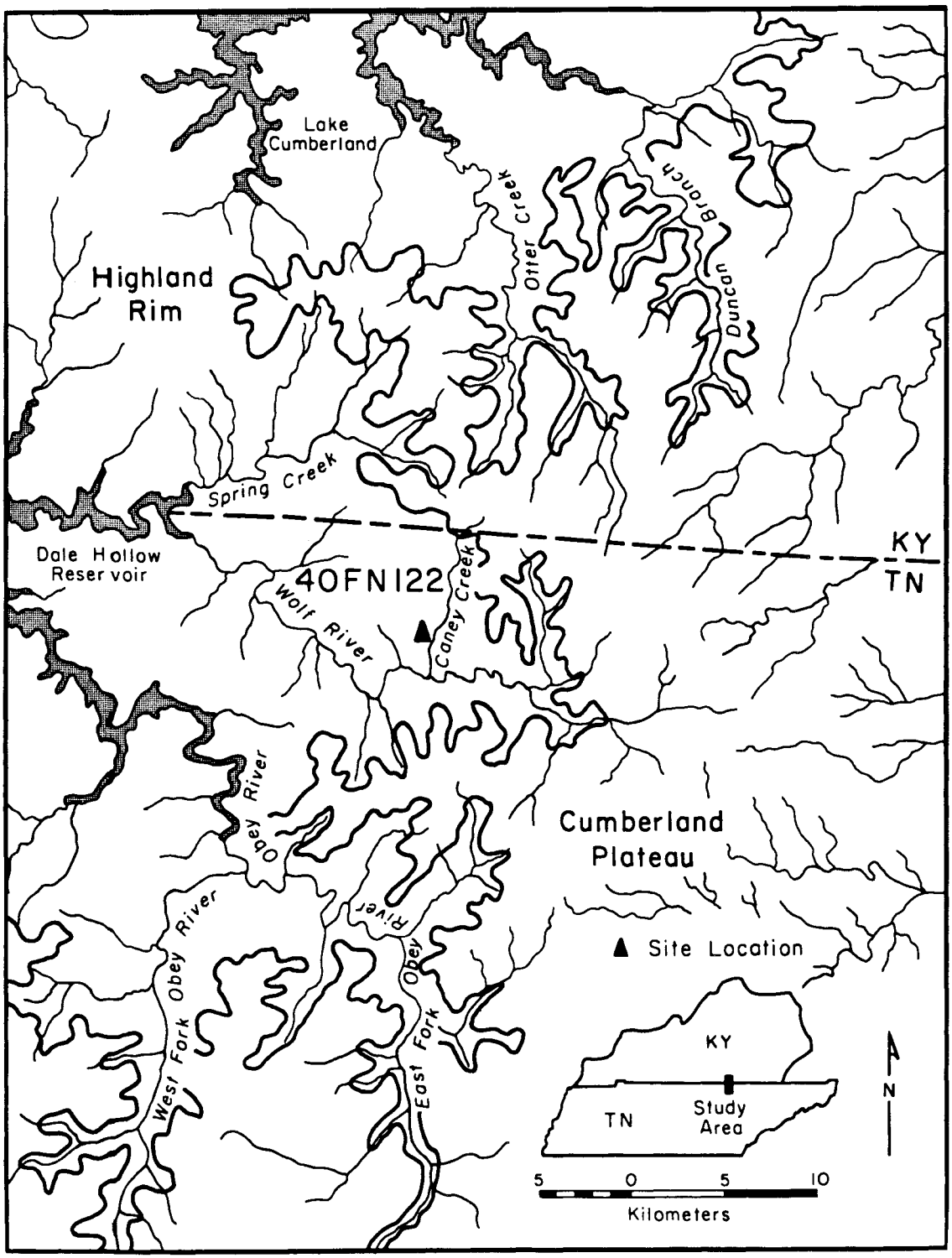


Figure 1. Site Location.

Figure 2. Caney Creek. View From Southern Tip of Site Looking North.

Figure 3. Site Area. View From Hill Above Site Looking East Across the Site.

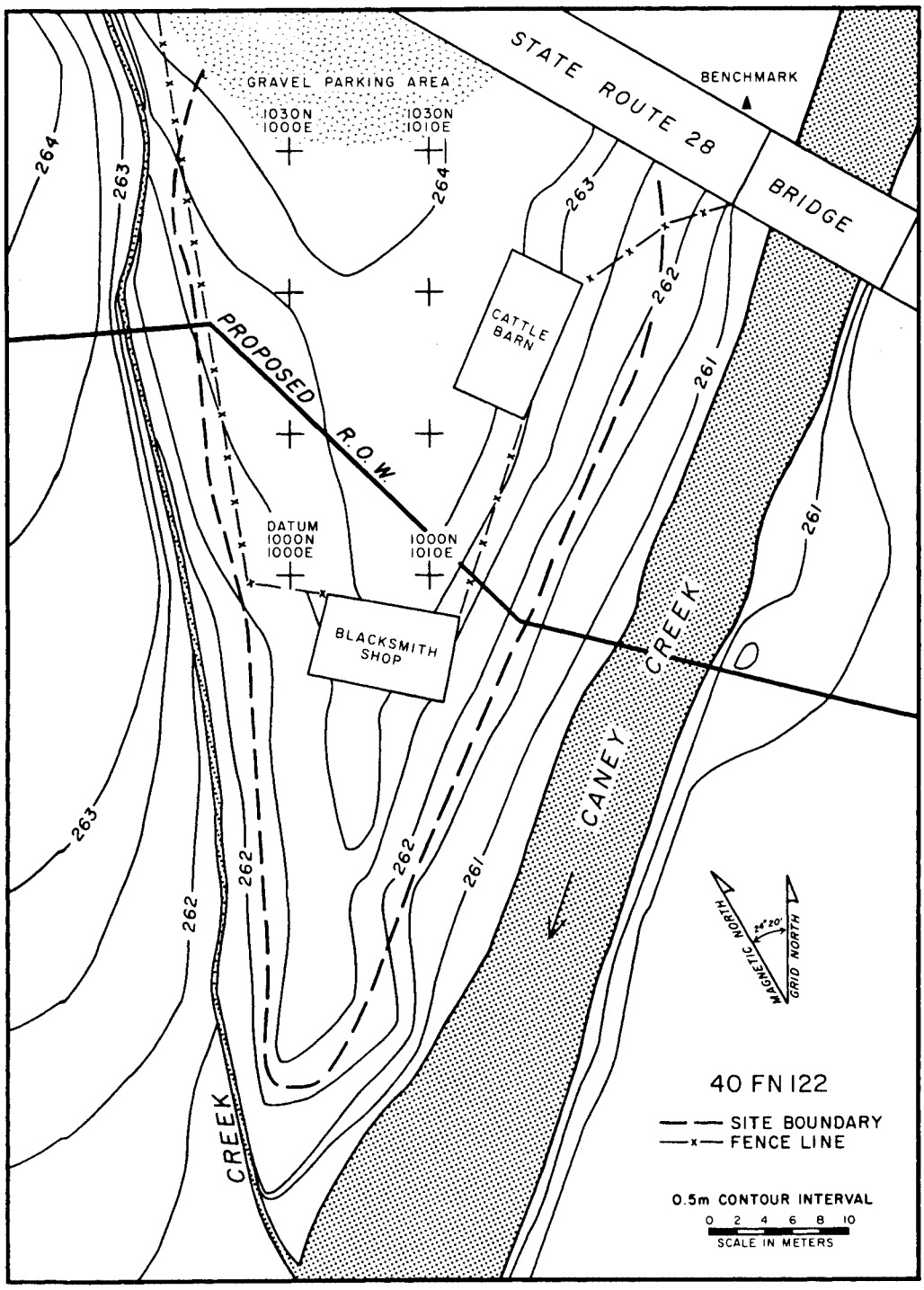


Figure 4. Site Boundary and Proposed State Route 28 Right-of-way.

The majority of the cultural material was found in undisturbed alluvial deposits. Early Archaic Kirk cluster projectile points/knives (PPKs) were recovered from the lowest deposits. In the stratum above the Kirk horizon, diagnostic artifacts from Late Archaic and Middle Woodland occupations were recovered. The paucity of Late Archaic and Middle Woodland artifacts indicates less intensive utilization of the site during these time periods. Shell tempered ceramics and Small Triangular cluster arrow points, representing a Mississippian occupation of the site, were recovered from the upper strata. The greater density of Mississippian diagnostics may indicate a greater utilization of the site at this time in comparison to the earlier Late Archaic and Middle Woodland components. The upper levels of the deposits, including the humus, exhibited some mixing with the historic occupation of the site.

CHAPTER I

ENVIRONMENTAL SETTING

Andrew P. Bradbury, Harley Lanham,
and Michael W. Morris

PHYSIOGRAPHY

Five major physiographic provinces occur in the state of Tennessee (Figure 5). 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 comprised of the Nashville Basin and the surrounding area of relatively greater relief known as the Highland Rim. The Appalachian Plateaus, which extends from the St. Lawrence River to the Gulf Coastal Plain, is divided into many sections. In Tennessee the Appalachian Plateaus is represented by the Cumberland Plateau section.

The Nashville 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 Basin has been divided into inner and outer portions based on physiographic, geologic, floristic, and historic variability. 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 erosional elements of Devonian Age Shale exposed at the lowest elevations. This is the largest feature of the Interior Low Plateau Physiographic Province and covers some 24,087 km^2 of Alabama, Tennessee, and Kentucky. The eastern portion of the Highland Rim lies between the Nashville Basin and the Cumberland Plateau.

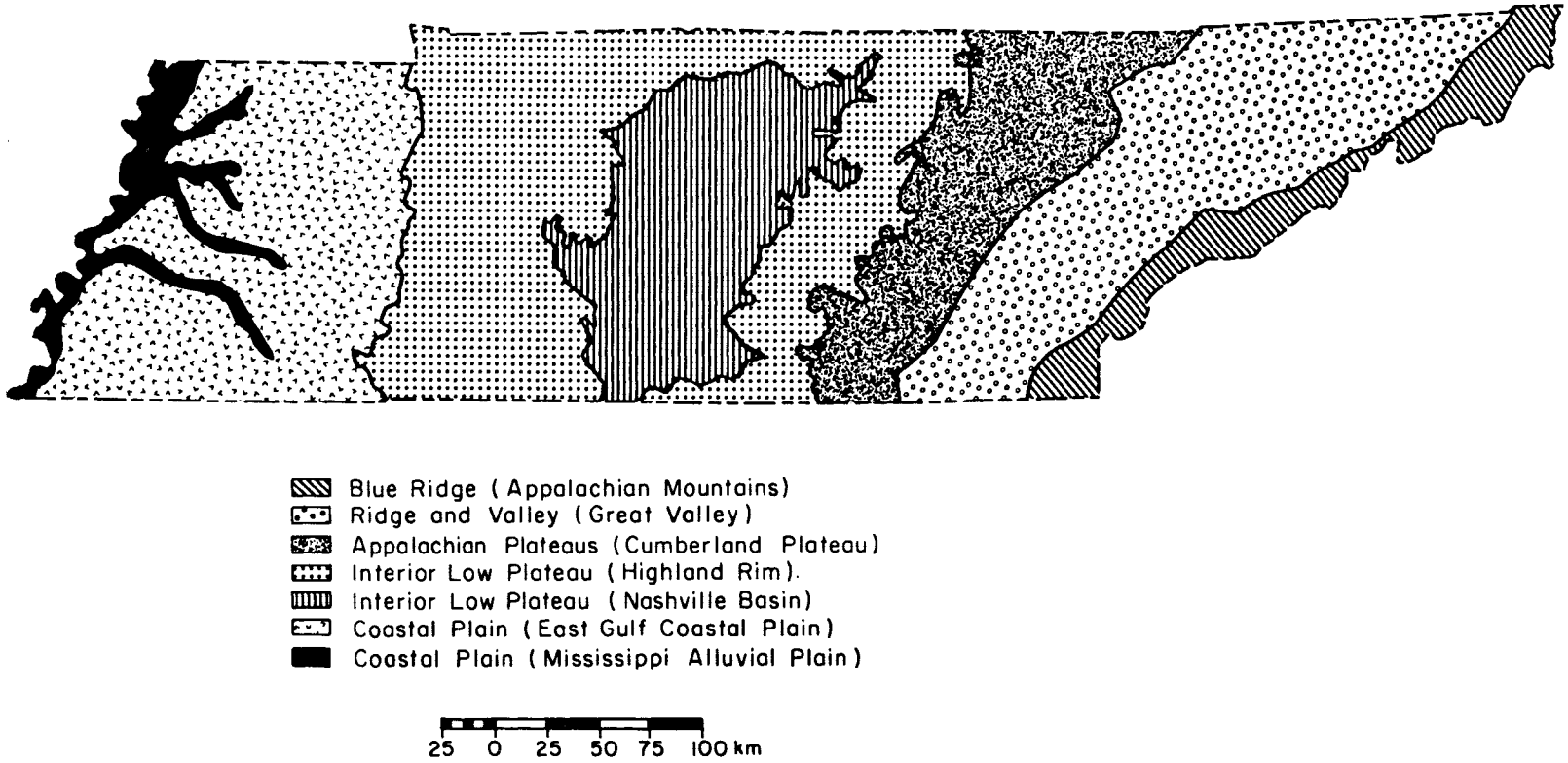


Figure 5. Physiographic Provinces of Tennessee.

Elevations range between 289-335 m AMSL with an average of 305 m AMSL (Fenneman 1938; Luther 1977).

The Cumberland Plateau section of the Appalachian Plateaus Physiographic Province is a folded Paleozoic Formation capped by a very durable Pennsylvanian age sandstone. The Cumberland Plateau extends from Kentucky through Tennessee and into Alabama covering some 38,144 km^2 and rising 304 m above the Highland Rim (Fenneman 1938).

The Forbus site and much of the Wolf River drainage, including most of Caney Creek, are in the Eastern Highland Rim while the headwaters of both Caney Creek and the Wolf River are in the Cumberland Plateau (Figure 6). The Forbus site occupies a Pleistocene age terrace capped by Holocene sediments. It is situated on the right bank of Caney Creek 2.2 km north of the confluence of Caney Creek and the Wolf River. The valley formation of Caney Creek is V-shaped and the valley floor is narrow. Steep slopes of resistant Mississippian geologic age formations of the Highland Rim comprise most of the valley. Outliers of the Cumberland Plateau occur within 2.0 km of the site.

GEOLOGIC HISTORY

The Cumberland Plateau section of the Appalachian Plateaus Physiographic Province 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 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 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).

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 Physiographic Province.

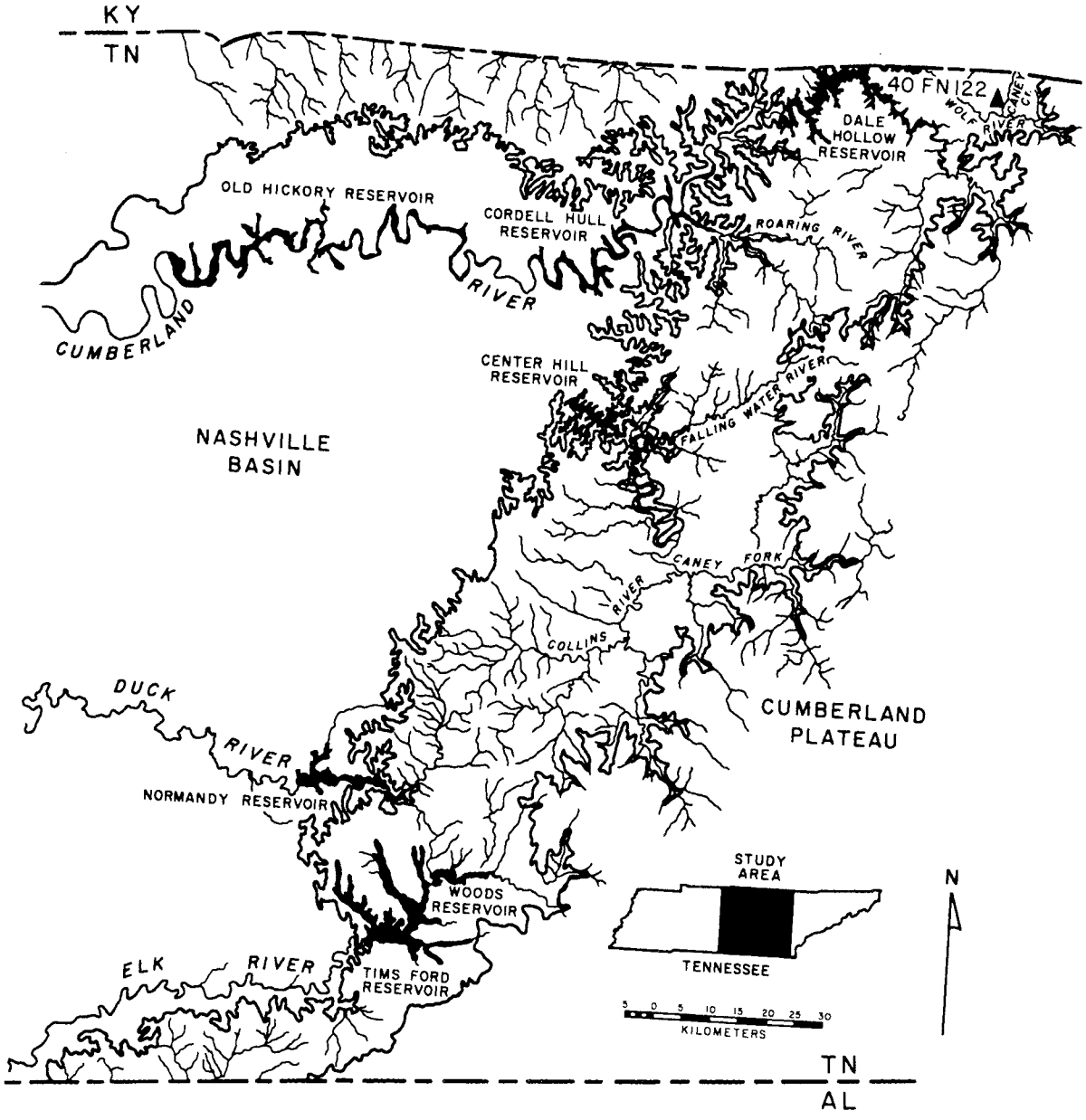


Figure 6. Eastern Highland Rim.

It has been suggested that forces forming the Nashville Basin and Highland Rim 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 and flowing toward the Tennessee River Valley. 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 down-cutting of these drainages. During Late Pleistocene times the rivers ceased down-cutting and the river valleys began to fill with alluvial sedimentation from the meandering rivers. This process has left distinct alluvial terraces and floodplains along the valley floors.

The down-cutting of rivers across the Highland Rim and western escarpment of the Cumberland Plateau has exposed several geologic formations, some of distinct economic importance to prehistoric and historic people of the area. The Fort Payne Formation is the lowest formation exposed in close proximity to the Forbus site. Bassler (1982:155) 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 Mississippian age formation contains beds and nodules of dense cryptocrystalline chert. This chert was of great economic importance to the prehistoric people of the Highland Rim (Amick 1984; Ensor 1981; Faulkner and McCollough 1973; Futato 1983). The Fort Payne chert could have been procured from outcrops or in river gravels. This formation also contains quartz geodes (Marcher 1962; Theis 1936). The Fort Payne Formation is exposed at the confluence of Caney Creek and the Wolf River 2.2 km south of the site.

Overlying the Fort Payne Formation is the St. Louis/Warsaw Formation. This Mississippian age formation generally consists of a fine-grained to compact gray limestone containing nodules of blue to bluish-gray chert (Lusk 1935; Theis 1936). These chert nodules are somewhat smaller in size in comparison to the Fort Payne chert, however, its very dense and fine-grained characteristics make it an optimal raw material for lithic tools. Quartz geodes are also present in the Warsaw Formation. The St. Louis/Warsaw Formation occurs frequently in all directions from the site. St. Louis chert is also found in the gravels of Caney Creek adjacent to or downstream from the site.

Overlying the St. Louis/Warsaw Formation is the Monteagle Limestone also of Mississippian age. This formation generally consists of medium-grained to very fine-grained limestone in medium to thick beds, with some thin-bedded zones of shale partings. The upper portions of the Monteagle formation contain beds of dolomitic and stylolitic limestone and lenses of rounded concretions of dense chert. The basal part of the formation contains zones of blocky chert. The Monteagle Formation occurs within 0.5 km of the site (Barnes 1968).

Overlying the Monteagle Formation is the Bangor-Hartselle Formation of Mississippian age. This formation generally consists of coarse to fine-grained limestone with shale partings in the upper levels. The basal portion is a fine-grained to very fine-grained sandstone. The Bangor-Hartselle Formation occurs within 1.6 km of

the site (Barnes 1968).

Overlying the Bangor-Hartselle Formation is the Pennington Formation, which is of Mississippian age. This formation consists of fine-grained to very fine-grained sandstone over shale deposits and fine-grained to very fine-grained dolomitic limestone. Within the limestone deposits are geodes lined with calcite crystals. The Pennington Formation occurs within 2 km of the site (Barnes 1968).

Overlying the Pennington Formation is the Fentress Formation of Pennsylvanian age. This formation consists of siltstone, shale, sandstone, and coal. Of importance to historic settlers in the area are the coal deposits found in the Fentress Formation. The most productive deposit is the Wilder seam situated 21 to 43 m below the top of the formation. The Fentress Formation occurs within 2.4 km of the site (Barnes 1968; Milhous et al. 1968).

Overlying the Fentress Formation is the Rockcastle Sandstone of Pennsylvanian age. This formation consists of coarse to medium-grained, medium to thick bedded sandstone which forms the cap of the Cumberland Plateau. The Rockcastle Formation occurs within 2.4 km of the site (Barnes 1968).

SOILS

Soil descriptions were made from samples collected in stratigraphic sections at 40FN122. The site is situated on a terrace of Caney Creek about 2.5 m above the present stream level. The parent material of this site consists of alluvium from this particular stream and the texture of the sediment suggests a composition of reworked loess originating from the uplands of the Cumberland Plateau. The relief of the site is nearly level, however, the surrounding landscape is rolling to steep. This is due to the number of outliers of the remnant Cumberland Plateau. The soils of the site are very well drained and permeability is deemed to be moderately rapid. There is little evidence of erosion in the site area.

Descriptions were made of the following stratigraphic sections. The first stratum was a dark mixed mineral and organic horizon deemed by the excavators as the Humus layer. The second stratum, Subsoil A-1 was an alluvial formation containing artifacts representing the Late Archaic to Mississippian. The third stratigraphic unit was deemed Subsoil A-2 and contained an Early Archaic (Kirk) assemblage. Observations in the field suggest that a faint and indistinct buried soil was present on the surface of this formation. The fourth formation was given the designation Subsoil B and, with the exception of a Kirk cluster PPK found on its surface, had no archaeological assemblages represented.

Soil descriptions were made for samples taken from columns at 1021 N, 1004 E; 1016 N, 1008 E; and 1005 N, 1009 E. The descriptions are as follows:

1021 N, 1004 E

Humus Moist color 10YR3/2 (very dark grayish-brown), weak medium subangular blocky structure, very friable nonsticky consistence, common roots, no noticeable coarse fragments, silt loam texture.

A-1 Moist color 10YR5/6 (yellowish-brown), weak medium subangular blocky structure, friable nonsticky consistence, common fine roots, a few organic gleys which are faint and comprise less than 20 percent of the matrix, silt loam texture.

A-2 Moist color 7.5YR5/6 (strong brown), moderate medium subangular blocky texture, friable slightly sticky consistence, no noticeable coarse fragments, roots, mottles or inclusions, silt loam texture.

1016 N, 1008 E

Humus Moist color 10YR3/2 (very dark grayish-brown), weak medium subangular blocky structure, very friable nonsticky consistence, common fine roots, a few pieces of charcoal noted, loam texture.

A-1 Moist color 10YR5/6 (yellowish-brown), weak medium subangular blocky structure, friable nonsticky consistence, some faint mottles 10YR4/3 (brown) comprising about 30 percent of the matrix, mottles are probably organic gleys from the humus layer above, common fine roots, very fine sandy loam texture.

A-2 Moist color 7.5YR5/6 (strong brown), moderate medium subangular blocky structure, friable slightly sticky consistence, few fine roots, no noticeable mottles, inclusions, or coarse fragments, silt loam texture.

B Dry color 7.5YR6/8 (reddish-yellow), moderate medium subangular blocky structure, very firm and brittle, slightly sticky consistence, no noticeable coarse fragments, inclusions, or mottles, no roots, fine sandy loam consistence.

1005 N, 1009 E

Humus Moist color 10YR3/3 (dark brown), weak medium subangular blocky structure, very friable nonsticky consistence, common fine roots, a few charcoal fragments noted comprising less than five percentof the matrix, loam texture.

A-1 Moist color 10YR6/6 (brownish-yellow), faint organic gleys 10YR5/4 (yellowish-brown) comprising about 30 percent of the matrix, weak medium subangular blocky structure, friable nonsticky consistence, common fine roots, no noticeable coarse fragments, silt loam texture.

A-2 Moist color 7.5YR5/6 (strong brown), moderate medium subangular blocky structure, friable slightly sticky consistence, few fine roots, no noticeable coarse fragments or inclusions, silt loam texture.

B Moist color 7.5YR5/8 (strong brown), moderate medium subangular blocky structure, friable slightly sticky consistence, few fine roots, no noticeable coarse fragments or inclusions, very fine sandy loam texture.

These soil descriptions indicate that the sediments of the site have been deposited by the stream and a continuous profile has developed. The Subsoil B stratum likely represents a Pleistocene age formation and may have a paleosol developed that was later truncated. The Subsoil A-2 formation represents an Early Holocene alluvial formation that also may have had a soil developed on its surface during a Middle Holocene stabilization episode. This buried surface was noted in the field but has not been confirmed from the descriptions except that the Subsoil A-1 and the Subsoil A-2 strata are relatively distinct. The Subsoil A-1 stratum represents a Late Holocene alluvial formation that is likely continuing to aggrade to the present. The Humus layer is a mixed organic/mineral A horizon which is developing on the Subsoil A-1 surface. There is little evidence of disturbance in these strata and the archaeological assemblages can be viewed as reliable.

FLORA AND FAUNA

Cumberland Plateau

The Cumberland Plateau provides a suitable environment for a variety of terrestrial and avian animals. Aquatic animals are also abundant in the rivers and streams.

Terrestrial and avian animals in the Plateau area include white-tailed deer (*Odocoileus virginianus*), opossum (*Didelphis marsupialis*), raccoon (*Procyon lotor*), eastern gray squirrel (*Sciurus carolinensis*), woodchuck (*Marmota monax*), eastern cottontail (*Sylvilagus floridanus*), black bear (*Ursus americanus*), wild turkey (*Meleagris gallopavo*), and ruffed grouse (*Bonasa umbellus*). Several other species that are no longer present would have inhabited this area in prehistoric times. These include elk (*Cervus canadensis*), buffalo (*Bison bison*), wolf (*Canis lupus*), and panther (*Felis concolor*) (Pace et al. 1986; Schultz et al. 1954; USCOE 1976).

Rivers and streams on the Cumberland Plateau contain many species of fish, aquatic turtle, and molluscs. Fish species native to the Plateau include channel catfish (*Ictalurus punctatus*), walleye (*Stizostedion vitreum*), muskellunge (*Esox masquinongy*), white bass (*Morone chrysops*), smallmouth and rock bass (*Ambloplites rupestris*), and longear sunfish (*Lepomis megalotis*). Gastropods and mussels occur in the Plateau, however, mussels are less abundant than in other areas of Tennessee (Pace et al. 1986; Kuhne 1939; USCOE 1976).

The Cumberland Plateau falls within the Mixed Mesophytic Forest region (Braun 1950). Dominant trees of the arboreal layer are beech (*Fagus grandifolia*), tuliptree (*Liriodendron tulipifera*), basswood *(Tilia heterophylla*), sugar maple (*Acer saccharum*), chestnut (*Castanea dentata*), sweet buckeye (*Aesculus octandra*), red oak (*Quercus borealis*), white oak (*Quercus alba*), and hemlock (*Tsuga canadensis*). Other less abundant species include birch (*Betula lutea*), black cherry (*Prunus serotina*), cucumber tree (*Magnolia acuminata*), white ash (*Fraxinus americana*), red maple (*Acer rubrum*), sour gum (*Nyssa sylvatica*), black walnut (*Juglans nigra*), and species of hickory (*Carya orata* and *Carya cordiformis*) (Braun 1950).

Eastern Highland Rim

Many species of animals that inhabit the Cumberland Plateau are also found in the Highland Rim. Small game populations are large, however, only scattered individuals of deer and turkey occur in the Highland Rim (Schultz et al. 1954). Waterfowl such as mallard (*Anas platyrhynchos*) and wood duck (*Aix sponsa*) are also present along with eight species of turtle (Earth Systems 1979).

The Eastern Highland Rim is located within the Western Mesophytic Forest region (Braun 1950). The Forbus site, however, lies in a transitional zone between the Mixed Mesophytic and Western Mesophytic Forest regions. This area contains most of the same species as the adjacent Cumberland Plateau (Braun 1950).

Other plant resources such as herbaceous species were also available in both the Cumberland Plateau and Highland Rim areas. These plants include maygrass (*Phalaris caroliniana*), goosefoot (*Chenopodium* sp.), wild rice (*Zizania aquatica*), sunflower (*Helianthus annuus*), marsh elder (*Iva funtescens*), sumpweed (*Ivan annua v. macrocopa*), and ragweed (*Ambrosia trificla*). Fruits such as blackberry (*Rubus* sp.) and grape *(Vitis* sp.) would also have been available.

Paleoenvironment

The previous environmental descriptions are adapted from present day conditions. Much of this information is applicable to the prehistoric environment in the area, however, some differences that could have affected early prehistoric adaptations will be discussed briefly.

Antevs (1955) has broken down climatic change in North America into three periods: Anathermal (10150-7000 B.P.), Altithermal (7000-4500 B.P.), and Medithermal (4500 B.P.-present). The Anathermal period was characterized by cooler than present day temperatures. During the Altithermal period the temperatures were warmer than the present. Finally, temperatures returned to the present conditions during the Medithermal period.

Paleoethnobotanical analysis from two sites in the Eastern Highland Rim have indicated vegetation changes during the past 25,000 years (Delcourt 1979). The boreal

taxa of jack pine, spruce, and deciduous trees that were dominant during the Late Wisconsin glacial were beginning to be replaced by the deciduous forest about 16300 B.P. By the early Holocene (12500-8000 B.P.) Mixed Mesophytic Forest taxa became abundant. Present conditions existed by the mid-Holocene (8000-5000 B.P.) (Delcourt 1979).

The faunal assemblage found in this area during the late Pleistocene is unknown at the present time. Inferences can be made from surrounding areas. Funkhouser (1925) reports evidence of late Pleistocene horse, ground sloth, elk, moose, caribou, musk ox, bison, mastodon, mammoth, and bear from Big Bone Lick, Kentucky. At Cheek Bend Cave in the Nashville Basin, an assemblage of small animals from the late Pleistocene has been reported (Klippel and Parmalee 1982). The species represented at Cheek Bend Cave confirm the environmental changes that took place during the Pleistocene-Holocene transition and the resulting extinction of the Pleistocene megafauna and establishment of modern fauna in this area (Pace et al. 1986).

Environmental conditions in early prehistoric times were quite different than the present. During the Paleo-Indian stage (12000-9500 B.P.), a cool-temperate Mixed Mesophytic Forest prevailed and the faunal assemblage included species of megafauna. By the beginning of the Early Archaic period (ca. 9500 B.P.) the megafauna were extinct, floral communities were becoming more like the present, and temperatures were warming. Another fluctuation in environmental conditions occurred during the Middle Archaic period (8000-5000 B.P.). Conditions at this time were warmer and drier than the present. An Oak-Hickory forest predominated during this period. By around 5000 B.P. environmental conditions became comparable to the present (Delcourt 1979).

SUMMARY

The Forbus site is situated in close proximity to abundant lithic, faunal, and floral resources. Lithic resources were more plentiful in the Highland Rim while game animals such as deer and turkey were more abundant on the Cumberland Plateau. The location of the Forbus site would allow aboriginal groups to maximize the exploitation of resources from both the Highland Rim and Cumberland Plateau.

CHAPTER II

PREHISTORIC BACKGROUND

Andrew P. Bradbury and Harley Lanham

Archaeological investigations in the Cumberland Plateau and Eastern Highland Rim have established a prehistoric chronology dating back 12,000 years. This chronology can be divided into four cultural stages: 1) Paleo-Indian (10000-8000 B.C.), 2) Archaic (8000-1000 B.C.), 3) Woodland (1000 B.C.-A.D. 1000), and 4) Mississippian (A.D. 1000-1700).

PALEO-INDIAN STAGE

The first humans to utilize the Cumberland Plateau and Eastern Highland Rim can best be described as small, highly mobile bands of "big game hunters". While there may have been an emphasis on the hunting of large mammals, plant foods and small game animals were also utilized (Chapman 1975; Jolley 1979; McNutt et al. 1975).

Evidence for Paleo-Indian occupation is generally limited to surface finds. This may be due to sampling bias in locating these sites (Pace et al. 1986). The Highland Rim of Tennessee has long been recognized as an area often utilized by Paleo-Indian groups (Lewis ed. 1954; Williams and Stoltman 1965). Faulkner and McCollough (1974) reported at least five sites with Paleo-Indian and eighteen sites with transitional Paleo-Early Archaic components from the Normandy Reservoir in the Highland Rim and Nashville Basin.

Diagnostic artifacts from this period include lanceolate fluted projectile points/knives (PPKs) such as the Clovis and Cumberland types. Sites of this period are small and contain few artifacts. It is probable that these sites functioned as hunting camps (Faulkner and McCollough 1974; Gatus 1983; Pace et al. 1986).

ARCHAIC STAGE

The glacial retreat and subsequent climatic changes that occurred around 8000 B.C. brought about many changes in the environment. These environmental changes caused a shift in the lifestyle of the peoples of this area. This shift is referred to as the Archaic stage. As an adaptation to the changing environment, more diversified subsistence strategies were adopted. The utilization of small game, aquatic resources, and the harvesting of wild plant foods were combined with the hunting and gathering economy of the Paleo-Indian stage. The Archaic stage can be subdivided into three periods: Early Archaic (8000-6000 B.C.), Middle Archaic (6000-2500 B.C.), and Late Archaic (2500-1000 B.C.).

During the Early Archaic, hunting remained the dominant means of subsistence, however, plant foods and small game were increasingly utilized. The change in subsistence is reflected in the tool assemblage from Early Archaic sites. Chipped stone artifacts become more diverse in form and variety.

Deeply stratified sites on alluvial terraces in the Southeast have revealed much about the Early Archaic period (Broyles 1966; Chapman 1973, 1975, 1977; Coe 1964). A series of projectile point/knife forms is recognized as diagnostic of this stage. These include Kirk cluster corner-notched points (Kirk, Palmer, and Decatur) and Bifurcated Base cluster points (St. Albans, Le Croy, and Kanawha). Many other tool forms such as knives, drills, scrapers, perforators, gravers, and a variety of flake tools were introduced (Chapman 1985; Faulkner and McCollough 1974; Gatus 1983; Pace et al. 1986).

Sites with Early Archaic components have been investigated in both the Eastern Highland Rim and Cumberland Plateau. Surveys in the Big South Fork, Normandy Reservoir, headwaters of the Caney Fork River, and Cookeville-Algood area have reported many Early Archaic sites (Faulkner and McCollough 1974; Ferguson et al. 1986; Jolley 1979; Kleinhans 1976; Wilson and Finch 1980). Sites were located in all physiographic zones but more intensive habitations occurred in the uplands and coves (Jolley 1979; Wilson and Finch 1980).

In general, Early Archaic sites are larger and occupied longer in comparison to the earlier Paleo-Indian sites. Many different types of sites have been identified. This lead Chapman (1975) to propose a settlement model consisting of a main residential base camp in the alluvial bottoms with several smaller specialized camps located in the adjoining uplands. This settlement model applies to the Little Tennessee Valley in the Ridge and Valley Province of East Tennessee but may also be relevant to the Cumberland Plateau/Highland Rim area.

During the Middle Archaic, hunting and gathering remained the dominant means of subsistence, however, plant harvesting and the exploitation of aquatic resources increased. Ground stone tools are common on Middle Archaic sites and atlatl weights, netsinkers, fishhooks, and bone implements appeared. Stemmed projectile points/knives (Eva-Morrow Mountain cluster, White Spring-Sykes cluster, Benton cluster, and Stanly type) are diagnostic artifacts on Middle Archaic sites. A greater reliance on aquatic resources and plant foods is evident by the increased numbers of plant processing implements and the presence of large sites in major river drainages. Middle Archaic shell middens have been excavated at the Eva site (Lewis and Lewis 1961) and at several sites in the Nashville Basin (Hofman 1984; Klippel and Morey 1986); however, large shell middens are not present in the Eastern Highland Rim and Cumberland Plateau (Faulkner and McCollough 1974). Plant foods such as arboreal seed crops are still important and there is evidence for the introduction of squash during this time (Dowd 1988).

Some areas seem to have been sparsely occupied during the Middle Archaic (Gatus 1983; Jolley 1979; Pace et al. 1986). Faulkner and McCollough (1974), however, report evidence of intensive utilization of the Upper Duck River Valley during

the Middle Archaic. This may be due to an increased reliance on riverine resources and the location of sites in optimal areas for exploiting these resources.

The Late Archaic is basically a continuation of the Middle Archaic pattern, although some changes in the material culture are evident. Diagnostic artifacts of this period include straight stemmed projectile points/knives (Ledbetter and Wade clusters), large bifacial tools, ground stone tools (pitted manos and bannerstones), and steatite vessels. An increase in population and a more sedentary lifeway in a riverine environment occurs. In addition to riverine resources there was an increased utilization of plant foods (Chapman and Shea 1981; Pace et al. 1986). A few Late Archaic shell middens are found in the study area, however, these sites are common in other areas of the Midsouth (Faulkner and McCollough 1974; Gatus 1983; Jolley 1979).

Surveys in the uplands have revealed settlement patterns similar to the rest of the Southeast. There is an increase in the number and size of Late Archaic sites and some evidence of a more sedentary lifeway. In the river valleys there appears to be a more intensive utilization of riverine locations (Autrey and Jolley 1980; Ball 1978; Faulkner and McCollough 1974; Gatus 1983; Pace et al. 1986).

WOODLAND STAGE

The Woodland Stage can best be described as a period of development in which populations are increasing and technological advances are taking place. People become more sedentary, agriculture becomes important, pottery is introduced, and a ceremonial mortuary pattern begins. The Woodland Stage can be divided into three periods: a) Early Woodland (1000-500 B.C.), b) Middle Woodland (500 B.C.-A.D. 500), and c) Late Woodland (A.D. 500-1000).

The Early Woodland subsistence pattern was similar to the Late Archaic. Hunting and the utilization of wild plants and some domesticated plants remained the norm. The major change from the Late Archaic to Early Woodland occurred in the material culture. This includes the introduction of pottery. Vessels appear highly fired and tempered with crushed quartz or limestone. Cord marking and fabric impression are the common types of surface treatment and vessel form is predominately conical. Other diagnostics of the Early Woodland include stemless medium-sized triangular projectile points/knives and straight to contracting stemmed points (McFarland and Rounded-base clusters). It is also during this time that a ceremonial mortuary pattern, in the form of earthworks and burial mounds, appears.

Sites dating to this period are well represented in both the Highland Rim and Cumberland Plateau. The settlement pattern seems to remain the same as during the Late Archaic. A more sedentary lifeway is evidenced by an increase in horticulture and the construction of semi-permanent houses on some sites. At least four plant species appear to have been domesticated by this time. These are sunflower (*Helianthus annuus*), marsh elder (*Iva funtescens*), sumpweed (*Iva annua v. macrocopa*), and

and goosefoot (*Chenopodian* sp.) (Bentz ed. 1986; Faulkner and McCollough 1974; Gatus 1983; Pace et al. 1986).

During the Middle Woodland period, corn is added to the diet of the inhabitants of the Southeast (Chapman and Shea 1981). A change in ceramics is noted for this period. There are a variety of vessel forms, limestone becomes the dominant tempering agent, and stamped surface treatments appear. Projectile points/knives of this period are medium triangular (McFarland cluster) or stemmed (Lanceolate Expanded Stem and Lanceolate Spike clusters). Other artifacts of this period include greenstone implements, prismatic blade work, and a variety of exotic materials. The Middle Woodland period in the study area is divided into early (McFarland) and late (Owl Hollow) phases (Faulkner ed. 1968; Faulkner 1978; Gatus 1983).

The McFarland phase is "characterized by a settlement pattern which consists of small encampments which exhibit only a few structures" (Gatus 1983: 47). Diagnostic artifacts of this phase are stemless triangular points (McFarland cluster) and Lanceolate Expanded Stem cluster (Bakers Creek and Swan Lake types) points, greenstone celts, gorgets and pipes manufactured from exotic materials, and ceramics of the Longbranch Fabric Marked, Candy Creek Cord Marked, Wright Check Stamped, and Mulberry Creek Plain types. McFarland groups utilized some cultivated plants along with wild plant and animal foods (Bentz ed. 1986; Faulkner 1968 ed.; Faulkner and McCollough 1974; Gatus 1983).

The Owl Hollow phase is "characterized by large permanent villages with deep, rich middens that sometimes occur in a circular pattern around a debris-free area that may have functioned as a plaza" (Faulkner 1978: 187). Diagnostic artifacts of this phase are Lanceolate Spike cluster projectile points/knives, limestone tempered plain, simple stamped, and cord marked ceramics. Greenstone celts and prismatic blade work are also common on Owl Hollow sites. There is also evidence for the use of maize on some sites (Crites 1978; Gatus 1983).

Two settlement patterns have been proposed for the Middle Woodland period in the Upper Elk and Duck River valleys (Faulkner and McCollough 1973). Large sites would be used as permanent settlements or villages from which smaller groups would leave to exploit other resources. In the second pattern, large sites would be occupied by the group on a seasonal basis. For the rest of the year the group would break up into small bands to utilize other biogeographic areas. On the Cumberland Plateau, Ferguson and Pace (1981) found an intensive utilization of the Big South Fork area during the Middle Woodland. Upland areas and rockshelters were more intensively used and there is evidence for a sedentary lifeway during the Middle Woodland (Wilson and Finch 1980).

The Late Woodland period is often viewed as being less culturally complex than the previous Middle Woodland period. A decline in the number of sites and the intensity of occupation suggests a less intensive utilization of this area during the Late Woodland. The bow and arrow gained widespread acceptance during the Late Woodland.

Diagnostic artifacts of the Late Woodland period include Small Triangular cluster points (Hamilton type) and Jack's Reef Corner-Notched and Pentagonal points. In the Elk River Valley, ceramics are chert tempered plain, cord marked, and knot roughened/net impressed. In other areas limestone tempered plain ceramics are found.

Sites are small and few in number in the Eastern Highland Rim and Cumberland Plateau (Faulkner and McCollough 1974; Gatus 1983; Jolley 1979; Pace et al. 1986). The low number of recorded sites may be due to a change in the settlement system (Faulkner and McCollough 1974) or to problems in isolating Late Woodland components from earlier Middle Woodland and later Mississippian components on multicomponent sites (Gatus 1983; Jolley 1979).

In the Eastern Highland Rim the Late Woodland period is represented by the Mason culture. Hunting and gathering was the main source of subsistence. Arboreal seeds were collected and to a lesser extent squash, gourd, and sunflower were grown. Mason base camps are usually located along major streams as are smaller collecting stations. Rockshelters were also utilized in some areas (Faulkner and McCollough 1974; Jolley 1979).

In the Ridge and Valley Province the Late Woodland period is represented by the Hamilton culture. Hamilton sites are also found on the eastern edge of the Cumberland Plateau. Hunting and gathering was the main source of subsistence. Shellfish were an important seasonal addition to the diet. Dome or conical-shaped mounds were used for burial of the dead. Small sites are found scattered along major streams and rockshelters were intensively utilized (Pace et al. 1986).

MISSISSIPPIAN STAGE

In many areas of the Southeast the Mississippian stage is seen as a complex society in which agriculture provided the majority of the subsistence base. Mississippian lifeways developed from Woodland lifeways, however, there were many changes. A chiefdom level of sociopolitical organization was adopted. Villages became fortified and occupied year round. Maize (*Zea mays*), beans (*Phaseolus vulgaris*), and squash (*Cucurbits* sp.) were intensively utilized.

The settlement system during the Mississippian stage is geared towards a sedentary lifeway and intensive agriculture. A hierarchy of sites is seen in each region. Large villages were located in bottomlands and on alluvial terraces. Smaller hamlets and farmsteads were located in outlying areas. Large villages were often fortified and contained platform mounds (Gatus 1983; Pace et al. 1986).

A wide variety of shapes and forms of shell tempered ceramic vessels are characteristic of Mississippian pottery. Much of the ceramic assemblage is decorated with symbolic motifs and effigy vessels are also found. These artifacts are more highly represented on ceremonial sites. In other areas, such as the study area, the ceramics

are usually utilitarian and undecorated. Projectile points are usually Small Triangular cluster types.

Small Mississippian sites have been reported in the study area. The lack of a major river drainage in this area explains the absence of large villages. Sites have been found in the Upper Elk River Valley (Faulkner and McCollough 1973, 1974), in uplands and cove areas in the Caney Fork Drainage (Jolley 1979), and in upland areas and rockshelters in the Big South Fork area (Ferguson et al. 1986; Wilson and Finch 1980). Sites in these areas may represent small hamlets or specialized hunting and gathering camps (Faulkner and McCollough 1974; Pace et al. 1986).

CHAPTER III

FIELD AND LABORATORY METHODS

Andrew P. Bradbury

Field procedures at 40FN122 were initiated by establishing a mapping grid and constructing a contour map of the site area. A tube-sampler probe was utilized to determine soil stratigraphy and locate subsurface cultural features and deposits. Sixteen 1 m x 1 m units were excavated during the Phase II testing and nine additional 1 m x 1 m units were excavated as part of the Phase III data recovery. No subsurface pit features were encountered at the site; however, several rock clusters and concentrations were observed in alluvial deposits containing prehistoric cultural material. All of the soil from the 1 m x 1 m units was dry screened or collected for flotation. Laboratory procedures included the processing of flotation samples and separation of all cultural material into several categories for analysis.

FIELD METHODS

An arbitrary grid system for mapping was established first. A datum point (1000 N, 1000 E) was placed at the southwest corner of a fenced enclosure. A grid north-south baseline was oriented 24°20' east of magnetic north. The grid was expanded from the baseline, and seven hubs were set in and around the proposed right-of-way. A contour map of the site was then constructed. Absolute elevations for the site were obtained by shooting to a USGS benchmark located on the existing bridge over Caney Creek.

At several locations around the site, cultural material was observed eroding out of the edge of the terrace slope. Seven of these areas were designated, mapped, and subsequently collected. After a heavy rain, an additional collection of these areas was made.

A soil probe was utilized to establish a general soil stratigraphy across the site and locate cultural features and deposits below the humus. Probe loci were marked with pin flags set in rows running north-south across the site at 2 m intervals (Figure 7). Rows were alternated between even and odd coordinates, forming a staggered series of probe loci, to increase the probability of locating possible features (Krakker et al. 1983). At each probe locus the depth of humus was recorded along with other soil types encountered. Three natural strata were distinguished (Humus, Subsoil A, and Subsoil B). Subsoil A and Subsoil B are alluvial deposits that have built up over time. Prehistoric and historic cultural material was observed in the Humus and Subsoil A. Subsoil B appeared to be a sterile soil stratum. An ashy soil layer was encountered at the northeast end of the site. This ashy soil was associated with the

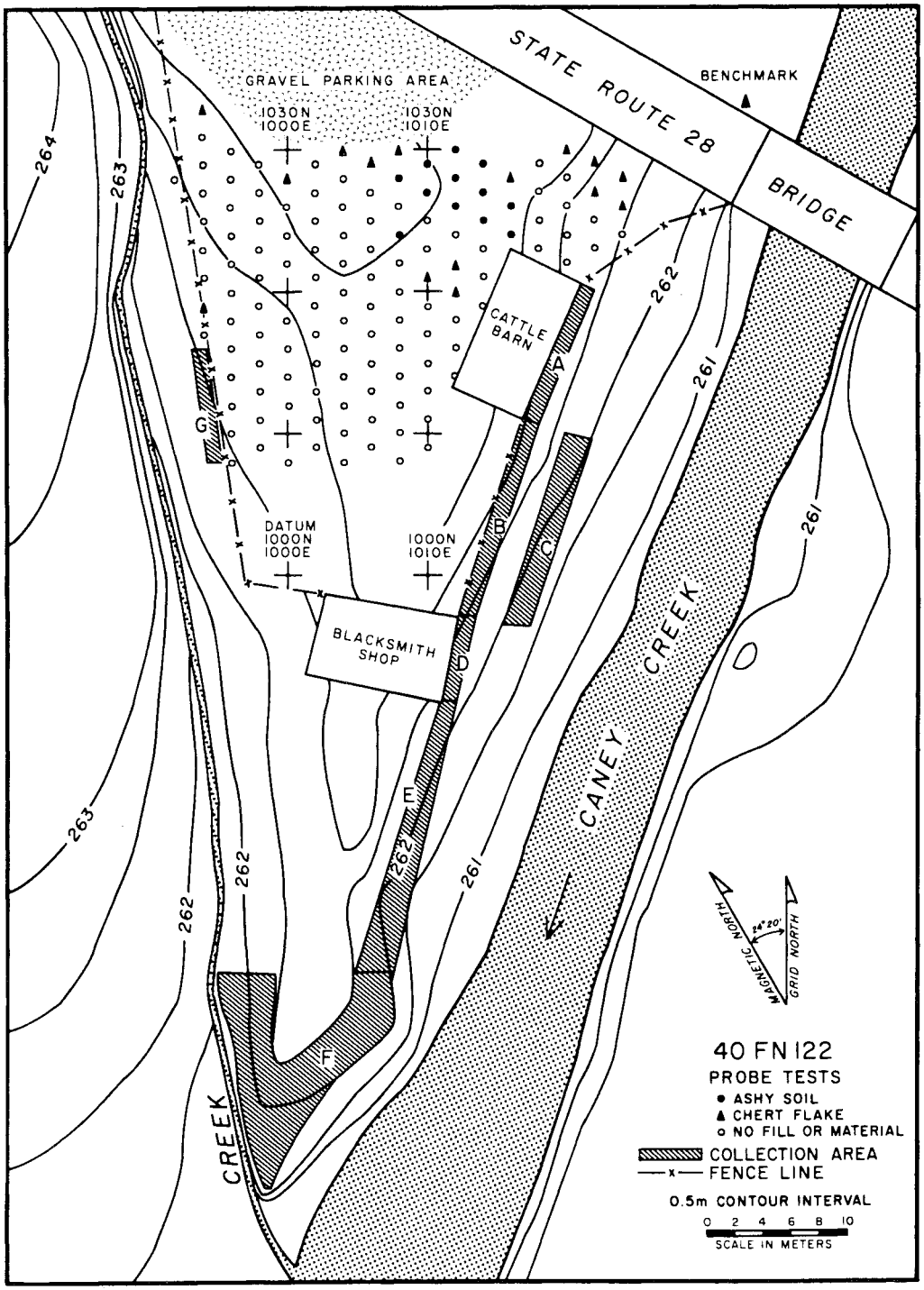


Figure 7. Probe Loci and Collection Areas.

historic component at the site. No other soils that resembled feature fill were encountered. Subsoil A was found to be deeper along the crest of a slight rise in the southeast area of the right-of-way. This alluvial deposit was not present in the west portion of the site. Soils in this area consisted of a humus overlying sterile subsoil (Subsoil B).

Hand excavated 1 m x 1 m units were set up with the southwest corner as datum. The units were excavated by the natural strata distinguished with the soil probe. Arbitrary levels were excavated within these natural strata. During the Phase II testing, 10 cm arbitary levels were excavated. During the Phase III data recovery, 5 cm arbitrary levels were excavated. Subsoil A was divided into two strata (Subsoil A-1 and Subsoil A-2). The Humus and the upper portion of Subsoil A-1 contained a mixture of historic and prehistoric material. The lower portion of Subsoil A-1 and Subsoil A-2 contained prehistoric material only. No material was recovered from Subsoil B. During the Phase III investigations, 10 liter soil samples were removed from the southwest corner of each level and saved for flotation. All remaining fills were dry screened through 6.4 mm (1/4 inch) mesh hardware cloth and all cultural material was collected. At the base of excavations, a profile map was drawn of one wall from each unit. Soil descriptions and Munsell colors were recorded for each stratum in profile.

Eighteen 1 m x 1 m units were concentrated along the rise between the 263.5 m and 264.0 m contour intervals at the southeast area of the right-of-way where the deposits were deepest (Figure 8). A series of six contiguous units were oriented north-south forming a trench along the crest of the rise. Two additional units were excavated on the east edge of this trench. Five contiguous units form an east-west trench across the middle of the rise. Two other units extend north-south from the five units excavated forming a T-shaped trench. Three additional units were excavated on the rise to the south of the trenches. The small knoll at the north end of the site was investigated by orienting two units north-south on the slope and three adjoining units on the top of the knoll. Two other units were excavated; one in the area of the ashy soil layer and one in the shallow soils on the west portion of the site.

No pit features were encountered during excavation; however, several rock clusters and concentrations were observed. All rocks in these clusters and concentrations were piece plotted, mapped, and collected. Two small concentrations of burnt nutshell were also encountered. Soil from the area of each concentration was collected as a flotation sample.

LABORATORY METHODS

The samples of fill collected for flotation 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

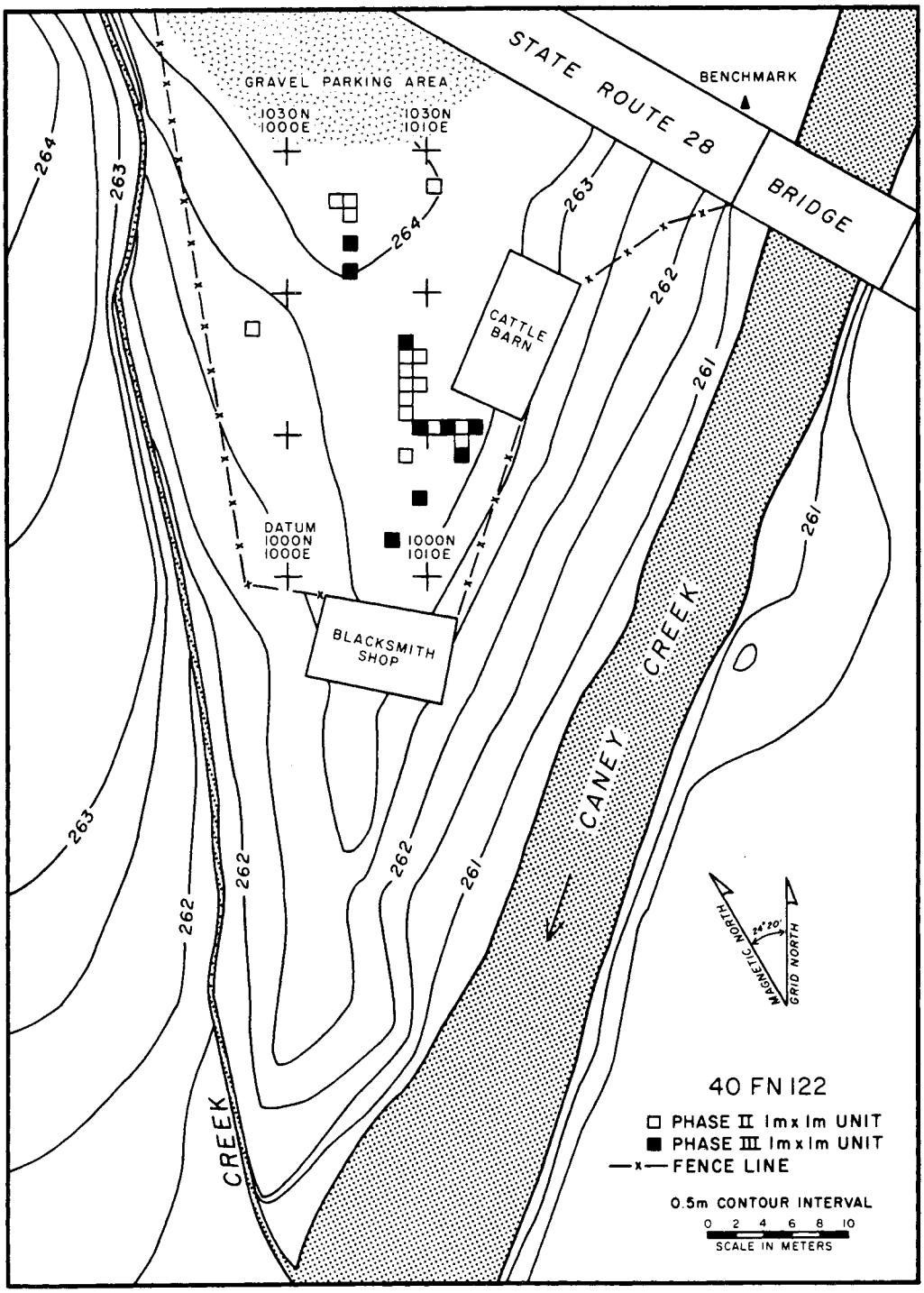


Figure 8. 1 m x 1 m Units.

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 (Bentz ed. 1986).

The 6.4 mm dry screened residues were completely sorted. The cultural material was divided into several categories (i.e. lithic tools, chert debitage, sandstone, ceramics, botanical, and a number of historic material categories). Sandstone was separated into burnt and non-burnt categories, counted, and weighed. Chert debitage was passed through a series of nested screens to size grade the material. The screens range in size from 3.1 mm (1/8 inch), 6.4 mm (1/4 inch), 12.7 mm (1/2 inch), 25.4 mm (1 inch), 50.8 mm (2 inches), to 76.2 mm (3 inches). Heavy fraction residues from flotation samples were separated into larger than 3.1 mm and less than 3.1 mm sizes. For material smaller than 3.1 mm, 5-10 minutes was spent removing obvious material categories. Material larger than 3.1 mm was separated into the same categories as the dry screen material. Unmodified gravel was weighed and discarded.

DISCUSSION

The field and laboratory methods employed in the archaeological investigation of the Forbus site were an effective means for maximizing the recovery of information. Heavy machinery was not utilized because the soil deposits on the site were undisturbed. The hand excavation of 1 m x 1 m units in arbitrary levels within natural strata maximized the recovery of cultural material in context. The use of flotation enabled the recovery of a sample of material that was small enough to pass through dry screens.

CHAPTER IV

SURFACE COLLECTION AREAS

Andrew P. Bradbury

Cultural material was observed eroding out of exposed subsoil at several locations around the site. Seven of these areas were mapped and all material was collected (Figure 7). After a heavy rain, an additional collection of each area was made. A total of 163 pieces (304.7 g) of lithic debris and 1 (6.2 g) tool was recovered.

AREA A

An area measuring 10.5 m x 1.5 m, located behind the cattle weighing station, was designated as Area A. Material was observed eroding out at the drip line of the building and from the edge of the terrace. A total of 100 pieces (139.8 g) of lithic debris was recovered from this surface locus.

AREA B

An area measuring 14.5 m x 1.5 m, situated between the cattle weighing station and blacksmith shop along the edge of the terrace, was designated as Area B. Material was observed eroding out of the crest and upper slope of the terrace. Twenty-three pieces (54.5 g) of lithic debris were recovered from this surface locus.

AREA C

An area measuring 14 m x 2 m, located between the cattle weighing station and blacksmith shop at the base of the terrace (262.0 m contour line), was designated as Area C. Material was observed eroding out of the terrace. Five pieces (22.8 g) of lithic debris were recovered from this surface locus.

AREA D

An area measuring 6.0 m x 1.5 m, located behind the blacksmith shop, was designated as Area D. Material was observed eroding out at the drip line of the building and from the edge of the terrace. Five pieces (15.6 g) of lithic debris were recovered from this surface locus.

AREA E

An area measuring 20 m x 2 m, situated between the blacksmith shop and the southern tip of the terrace, was designated as Area E. Material was observed eroding out of the edge of the terrace. Seven pieces (49.8 g) of lithic debris were recovered from this surface locus.

AREA F

A semi-circular area measuring 16.5 m x 7.5 m, found at the southern tip of the terrace, was designated as Area F. Material was observed eroding out of the terrace slope. Twenty pieces (11.6 g) of lithic debris and one PPK (Archaic indeterminate) were recovered from this surface locus.

AREA G

An area measuring 8 m x 1 m, along the fence line on the western edge of the site, was designated as Area G. Vegetation was lacking in this area and material was observed on the surface. Three pieces (10.6 g) of lithic debris were recovered from this surface locus.

DISCUSSION

The surface collection and recovery of material from these seven areas helped to delineate the site boundaries. The site extends outside of the right-of-way to the southern end of the terrace. Construction activities at the site will destroy the northern half of the site leaving the southern half intact. Investigations at the site concentrated in the north half of the site in the impact area.

CHAPTER V

EXCAVATION UNITS

Andrew P. Bradbury

Twenty-five 1 m x 1 m hand units were excavated as part of the Phase II testing and Phase III data recovery at 40FN122 (Figure 8). All units were excavated using the southwest corner as datum. The units were excavated by natural strata and arbitrary levels. During the Phase II testing, 10 cm arbitrary levels were excavated within the natural strata. This was changed to 5 cm arbitrary levels for the Phase III data recovery to provide more vertical control. Some units that were excavated in 10 cm levels during the Phase II testing were completed in 5 cm levels during the Phase III excavations. Four natural soil strata (Humus, Subsoil A-1, Subsoil A-2, and Subsoil B) were encountered during excavation. In several units a distinction between Subsoil A-1 and Subsoil A-2 could not be made and these strata were excavated as Subsoil A. Subsoil B was a sterile soil zone at the base of the excavation. Fill Area 1, found beneath the Humus stratum in Unit 1027 N, 1010 E, may be the result of historic dumping.

The excavation units were concentrated on a ridge and knoll in the right-of-way. A north-south row of units was excavated along the crest of a slight ridge in the southeast quadrant of the impact area (Figure 9). An east-west row of units was excavated across the crest of the ridge forming an L-shaped trench with the north-south units (Figure 10). A small knoll located at the north end of the site was also investigated.

Soil stratigraphy was essentially the same in the excavated area with the deposits on the ridge being slightly deeper. The Humus was 3-9 cm thick, Subsoil A-1 was 10-23 cm thick, and Subsoil A-2 was 17.5-30 cm thick (Figure 11). No evidence for agricultural activities on the site was observed. Some mixing of historic and prehistoric cultural material occurred in the Humus and upper portion of the Subsoil A-1. This was probably the result of activities relating to the weighing station and other post-depositional processes. The lower portion of Subsoil A-1 and Subsoil A-2 did not contain historic material.

The excavation units are described below and the prehistoric materials contained in each are listed. The historic component and associated cultural material are described in a following chapter (q.v. Historic Occupation of the Forbus Site).

Unit 1002 N, 1007 E was excavated in ten levels to a maximum depth of 52 cm below ground surface. Sterile subsoil (Subsoil B) was encountered at the base of the excavation. The Humus was a very dark grayish-brown (10YR3/2) silt loam about 5.5 cm thick. Subsoil A-1 was a brown (7.5YR5/4) silt loam about 16.5 cm thick. Subsoil A-2 was a strong brown (7.5YR5/6) silt loam about 30 cm thick. A rock cluster (Feature 6) was excavated in Subsoil A-1. The unit and feature contained:

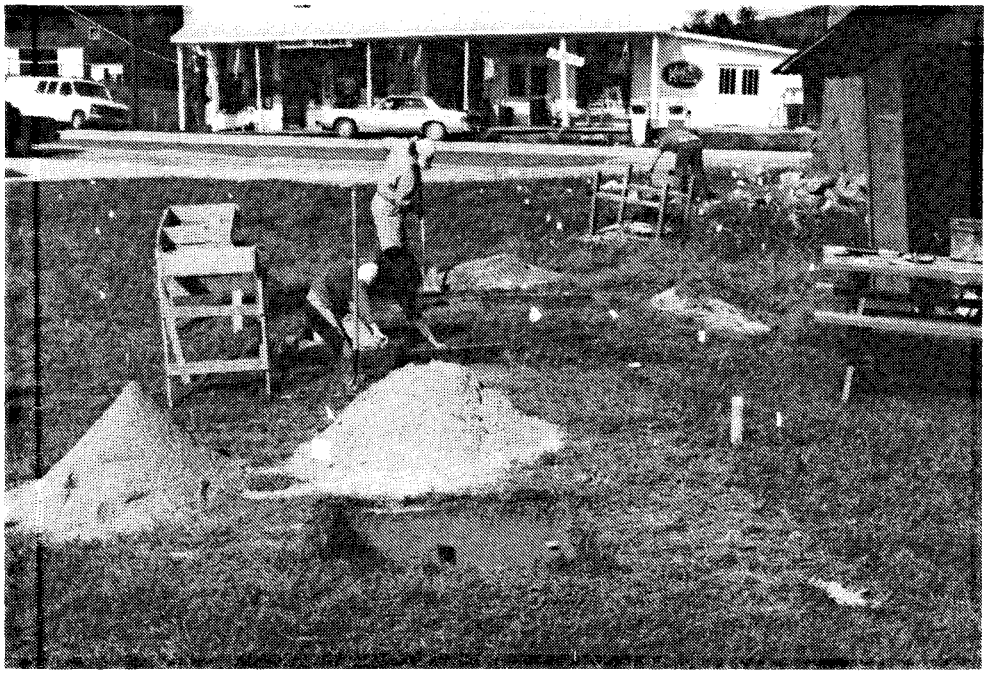


Figure 9. Excavating North-South Row of 1 m x 1 m Units on Crest of Slight Ridge. Phase II Excavations

Figure 10. North Profile of East-West of 1 m x 1 m Units Excavated Across Ridge. 1011N, 1009-1015E. Phase III Excavations.

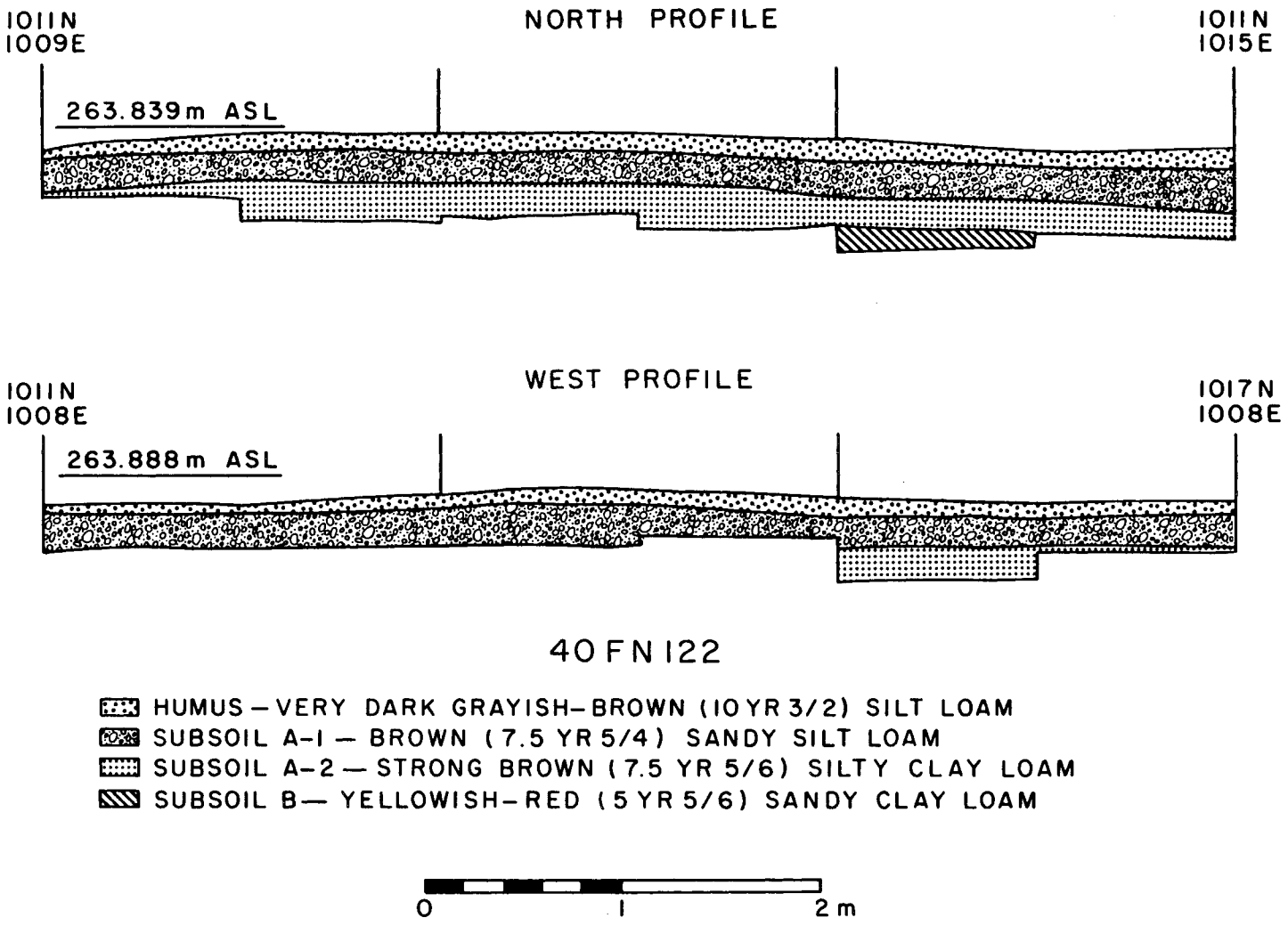


Figure 11. North Profile of Soil Strata. 1011 N, 1009–1015 E.

282	chert debris	365.5 g
1	PPK	5.6 g
2	PPK fragments	5.8 g
1	biface fragment	0.3 g
1	spokeshave	2.0 g
55	burnt sandstone	9,811.6 g
1	limestone	27.0 g
1	hematite	50.5 g

Unit 1005 N, 1009 E was excavated in nine levels to a maximum depth of 45.5 cm below ground surface. Sterile subsoil (Subsoil B) was encountered at the base of the excavation. The Humus was a very dark grayish-brown (10YR3/2) loam about 4 cm thick. Subsoil A-1 was a brownish-yellow (10YR6/6) silt loam about 21 cm thick. Subsoil A-2 was a strong brown (7.5YR5/6) silt loam about 20 cm thick. A rock cluster (Feature 7) was excavated in Subsoil A-1. The unit and feature contained:

69	chert debris	219.2 g
1	PPK fragment	0.1 g
1	hammerstone	229.7 g
41	burnt sandstone	5,626.1 g

Unit 1008 N, 1008 E was excavated in five levels to a maximum depth of 42 cm below ground surface. Sterile subsoil (Subsoil B) was encountered at the base of the excavation. The Humus was a dark brown (7.5YR3/2) silt loam about 3 cm thick. Subsoil A-1 was a brown (7.5YR5/4) silt loam about 18 cm thick. Subsoil A-2 was a strong brown (7.5YR5/6) silt loam about 21 cm thick. The unit contained:

74	chert debris	139.0 g
2	PPKs	8.2 g
2	biface fragments	11.3 g
2	burnt sandstone	306.3 g

Unit 1008 N, 1012 E was excavated in ten levels to a maximum depth of 54.5 cm below ground surface. Sterile subsoil (Subsoil B) was encountered at the base of the excavation. The Humus was a dark brown (7.5YR3/2) silt loam about 9 cm thick. Subsoil A-1 was a brown (7.5YR5/4) silt loam about 23 cm thick. Subsoil A-2 was a strong brown (7.5YR5/6) silt loam about 22.5 cm thick. A rock cluster (Feature 8) was excavated in Subsoil A-1. The unit and feature contained:

805	chert debris	830.3 g
1	PPK	5.5 g
1	biface fragment	1.5 g
2	retouched flakes	1.3 g
1	utilized flake	6.5 g
1	graver	0.1 g
1	sandstone	22.5 g
21	burnt sandstone	7,819.9 g
2	limestone	4.2 g

Unit 1009 N, 1012 E was excavated in five levels to a maximum depth of 47.5 cm below ground surface. Sterile subsoil (Subsoil B) was encountered at the base of the excavation. The Humus was a dark brown (7.5YR3/2) silt loam about 4 cm thick. Subsoil A-1 was a brown (7.5YR5/4) silt loam about 20 cm thick. Subsoil A-2 was a strong brown (7.5YR5/6) silt loam about 23 cm thick. Two rock clusters (Features 9 and 10) were excavated in Subsoil A-1. The unit and features contained:

728	chert debris	1,102.3 g
3	PPKs	10.5 g
1	PPK fragment	0.4 g
4	bifaces	71.2 g
2	scrapers	22.3 g
3	retouched flakes	2.5 g
14	burnt sandstone	6,136.0 g

Unit 1010 N, 1009 E was excavated in nine levels to a maximum depth of 44 cm below ground surface. Sterile subsoil (Subsoil B) was encountered at the base of the excavation. The Humus was a very dark grayish-brown (10YR3/2) silt loam about 5 cm thick. Subsoil A-1 was a brown (7.5YR5/4) silt loam about 19 cm thick. Subsoil A-2 was a strong brown (7.5YR5/6) silt loam about 20 cm thick. The unit contained:

160	chert debris	709.5 g
8	sandstone	8.9 g
86	burnt sandstone	3,060.9 g

Unit 1010 N, 1010 E was excavated in nine levels to a maximum depth of 43 cm below ground surface. Sterile subsoil (Subsoil B) was encountered at the base of the excavation. The Humus was a very dark grayish-brown (10YR3/2) silt loam about 3 cm thick. Subsoil A-1 was a brown (7.5YR5/4) silt loam about 15 cm thick. Subsoil A-2 was a strong brown (7.5YR5/6) silt loam about 25 cm thick. The unit contained:

47	chert debris	37.0 g
1	PPK fragment	0.4 g
1	retouched flake	0.8 g
1	graver	1.0 g
1	burnt sandstone	117.9 g

Unit 1010 N, 1011 E was excavated in nine levels to a maximum depth of 41.5 cm below ground surface. Sterile subsoil (Subsoil B) was encountered at the base of the excavation. The Humus was a very dark grayish-brown (10YR3/2) silt loam about 3.5 cm thick. Subsoil A-1 was a brown (7.5YR5/4) silt loam about 19.5 cm thick. Subsoil A-2 was a strong brown (7.5YR5/6) silt loam about 18.5 cm thick. A rock cluster (Feature 11) was excavated in Subsoil A-2. The unit and feature contained:

187	chert debris	160.8 g
2	PPKs	3.1 g
1	PPK fragment	2.2 g
1	biface fragment	4.3 g

1	retouched flake	0.3 g
1	drill	5.7 g
2	sandstone	290.1 g
52	burnt sandstone	3,207.7 g
1	limestone	5.1 g

Unit 1010 N, 1012 E was excavated in six levels to a maximum depth of 55 cm below ground surface. Sterile subsoil (Subsoil B) was encountered at the base of the excavation. The Humus was a dark brown (7.5YR3/2) silt loam about 5 cm thick. Subsoil A-1 was a brown (7.5YR5/4) silt loam about 20.5 cm thick. Subsoil A-2 was a strong brown (7.5YR5/6) silt loam about 19.5 cm thick. A 10 cm arbitrary level was excavated into Subsoil B. The unit contained:

626	chert debris	667.2 g
1	PPK	12.0 g
1	PPK fragment	0.3 g
7	bifaces	117.1 g
1	biface fragment	13.1 g
2	retouched flakes	1.1 g
1	graver	2.1 g
1	burnt sandstone	32.0 g

Unit 1010 N, 1013 E was excavated in eight levels to a maximum depth of 45 cm below ground surface. Sterile subsoil (Subsoil B) was encountered at the base of the excavation. The Humus was a dark brown (7.5YR3/2) silt loam about 7 cm thick. Subsoil A-1 was a brown (7.5YR5/4) silt loam about 20.5 cm thick. Subsoil A-2 was a strong brown (7.5YR5/6) silt loam about 17.5 cm thick. The unit contained:

620	chert debris	498.1 g
1	biface fragment	0.3 g
3	retouched flakes	3.6 g
24	burnt sandstone	6,989.9 g

Unit 1011 N, 1008 E was excavated in three levels to a maximum depth of 25 cm below ground surface. The base of the excavation was the top of Subsoil A-2. The Humus was a very dark grayish-brown (10YR3/2) silt loam about 5 cm thick. Subsoil A-1 was a brown (7.5YR5/4) silt loam about 20 cm thick. A rock cluster (Feature 4) was excavated at the top of Subsoil A-1. The unit and feature contained:

76	chert debris	344.8 g
3	burnt sandstone	7,024.9 g
1	hematite	35.9 g

Unit 1012 N, 1008 E was excavated in three levels to a maximum depth of 19 cm below ground surface. The base of the excavation was the top of Subsoil A-2. The Humus was a very dark grayish-brown (10YR3/2) silt loam about 4 cm thick. Subsoil A-1 was a brown (7.5YR5/4) silt loam about 15 cm thick. The unit contained:

53	chert debris	143.0 g

Unit 1013 N, 1008 E was excavated in three levels to a maximum depth of 24 cm below ground surface. The base of the excavation was the top of Subsoil A-2. The Humus was a very dark grayish-brown (10YR3/2) silt loam about 3 cm thick. Subsoil A-1 was a brown (7.5YR5/4) sandy loam about 21 cm thick. A rock cluster (Feature 1) was excavated in Subsoil A-1. The unit and feature contained:

40	chert debris	740.8 g
1	hematite	4.6 g
16	burnt sandstone	3,338.3 g

Unit 1013 N, 1009 E was excavated in three levels to a maximum depth of 21 cm below ground surface. The base of the excavation was the top of Subsoil A-2. The Humus was a very dark grayish-brown (10YR3/2) silt loam about 4 cm thick. Subsoil A-1 was a brown (7.5YR5/4) sandy loam about 17 cm thick. The unit contained:

28	chert debris	28.0 g
1	retouched flake	6.6 g
3	burnt sandstone	338.9 g

Unit 1014 N, 1008 E was excavated in three levels to a maximum depth of 23 cm below ground surface. The base of the excavation was the top of Subsoil A-2. The Humus was a very dark grayish-brown (10YR3/2) silt loam about 3 cm thick. Subsoil A-1 was a brown (7.5YR5/4) sandy loam about 20 cm thick. A rock cluster (Feature 5) was excavated in Subsoil A-1. The unit and feature contained:

135	chert debris	1,314.4 g
1	PPK	2.1 g
1	PPK fragment	0.7 g
10	shell tempered ceramic sherds	19.1 g
15	burnt sandstone	252.2 g
1	indeterminate lithic	471.1 g

Unit 1015 N, 1008 E was excavated in eight levels to a maximum depth of 46 cm below ground surface. Sterile subsoil (Subsoil B) was encountered at the base of the excavation. Four Humus strata were distinguished during excavation. Humus A was a very dark grayish-brown (10YR3/2) silt loam mixed with coal cinders. Humus A was about 3 cm thick. Humus B was a dark brown (7.5YR3/2) silt loam containing coal cinders and nails. Humus B was about 3 cm thick. Humus C was an ashy deposit in the southeast corner of the unit. Humus C was about 3 cm thick. Humus D was a dark brown (7.5YR3/2) silt loam about 5 cm thick. Subsoil A-1 was a yellowish-brown (10YR5/6) sandy loam about 16 cm thick. Subsoil A-2 was a strong brown (7.5YR5/6) silt loam about 25 cm thick. A rock concentration (Feature 3) was excavated in Subsoil A-1. This rock concentration also continued into the adjacent unit (1015 N, 1009 E). The unit and feature contained:

418	chert debris	984.4 g

1	retouched flake	0.4 g
161	burnt sandstone	15,595.9 g
3	quartzite	48.4 g
1	limestone	0.2 g

Unit 1015 N, 1009 E was excavated in five levels to a maximum depth of 36 cm below ground surface. The base of the excavation was an arbitrary level in Subsoil A-2. Two Humus strata were distinguished during excavation. Humus A was a very dark grayish-brown (10YR3/2) silt loam mixed with coal cinders. Humus A was about 4 cm thick. Humus D was a dark brown (7.5YR3/2) silt loam about 5 cm thick. Subsoil A-1 was a yellowish-brown (10YR5/6) sandy loam about 11 cm thick. Subsoil A-2 was a strong brown (7.5YR5/6) sandy loam about 20 cm thick. The rock concentration (Feature 3) excavated in 1015 N, 1008 E extended into this unit. A concentration of burnt nutshell (q.v. Plant Remains) was also excavated in Subsoil A-1. The unit and feature contained:

225	chert debris	306.5 g
2	PPKs	4.0 g
1	biface	3.8 g
1	utilized flake	4.9 g
11	burnt sandstone	1,077.1 g
4	limestone	0.7 g

Unit 1016 N, 1008 E was excavated in five levels to a maximum depth of 23 cm below ground surface. The base of the excavation was the top of Subsoil A-2. The Humus was a very dark grayish-brown (10YR3/2) loam about 3 cm thick. Subsoil A-1 was a yellowish-brown (10YR5/6) sandy loam about 20 cm thick. A concentration of burnt nutshell was observed in Level 3 and Level 4 of Subsoil A-1 (q.v. Plant Remains). The unit contained:

155	chert debris	600.5 g
3	sandstone	53.8 g
35	burnt sandstone	1,386.7 g

Unit 1017 N, 997 E was excavated in two levels to a maximum depth of 8.5 cm below ground surface. Sterile subsoil (Subsoil B) was encountered at the base of the excavation. Two Humus strata were distinguished during excavation. Humus D was a dark brown (10YR3/3) sandy silt loam about 3 cm thick. Humus E was a medium brown (10YR4/3) sandy silt loam mixed with gravel and about 5.5 cm thick. The unit contained:

48	chert debris	157.3 g
1	scraper	8.3 g
1	sandstone	8.0 g

Unit 1021 N, 1004 E was excavated in four levels to a maximum depth of 20 cm below ground surface. The base of the excavation was the top of Subsoil A-2. The Humus was a very dark grayish-brown (10YR3/2) silt loam about 5.5 cm thick.

Subsoil A-1 was a yellowish-brown (10YR5/6) silt loam about 13 cm thick. The unit contained:

274	chert debris	291.7 g
2	bifaces	13.5 g
1	scraper	5.4 g
1	retouched flake	1.0 g
1	graver	1.5 g
16	burnt sandstone	684.4 g
1	limestone	0.1 g

Unit 1023 N, 1004 E was excavated in eight levels to a maximum depth of 34 cm below ground surface. Sterile subsoil (Subsoil B) was encountered at the base of the excavation. The Humus was a very dark grayish-brown (10YR3/2) silt loam about 5 cm thick. Subsoil A-1 was a yellowish-brown (10YR5/6) silt loam about 10 cm thick. Subsoil A-2 was a strong brown (7.5YR5/6) silt loam about 19 cm thick. The unit contained:

386	chert debris	129.1 g
1	PPK	5.7 g
3	burnt sandstone	21.3 g
22	limestone	4.7 g

Unit 1025 N, 1004 E was excavated in three levels to a maximum depth of 30 cm below ground surface. The base of the excavation was an arbitrary level in Subsoil A. The Humus, about 7 cm thick, was a dark brown (7.5YR3/2) silt loam mixed with gravel. Subsoil A was a brownish-yellow (10YR6/6) silt loam about 23 cm thick. A rock concentration (Feature 2) extended from Unit 1026 N, 1004 E into Subsoil A of this unit. The unit and feature contained:

348	chert debris	1,179.0 g
1	biface	16.3 g
4	utilized flakes	10.6 g
1	retouched flake	1.1 g
6	burnt sandstone	1,554.5 g
3	limestone	47.6 g

Unit 1026 N, 1003 E was excavated in one level to a maximum depth of 9.5 cm below surface. The base of the excavation was an arbitrary level in Subsoil A. The Humus was a dark brown (7.5YR3/2) silt loam mixed with gravel and about 7 cm thick. A rock concentration (Feature 2) extended from Unit 1026 N, 1004 E into Subsoil A of this unit. The unit and feature contained:

147	chert debris	506.2 g
1	biface	13.8 g
9	burnt sandstone	5,859.2 g
1	quartzite	0.4 g

Unit 1026 N, 1004 E was excavated in four levels to a maximum depth of 40 cm below ground surface. Sterile subsoil (Subsoil B) was encountered at the base of the

excavation. The Humus was a dark brown (7.5YR3/2) silt loam mixed with gravel and about 4 cm thick. Subsoil A was a brownish-yellow (10YR6/6) silt loam about 26 cm thick. A 10 cm arbitrary level was excavated into Subsoil B. Subsoil B was a reddish-yellow (7.5YR6/8) clayey sand loam. A rock concentration (Feature 2) was excavated in Subsoil A. This concentration extended into Units 1026 N, 1003 E and 1025 N, 1004 E. The unit and feature contained:

365	chert debris	1,036.8 g
1	PPK	6.6 g
1	PPK fragment	1.0 g
2	retouched flakes	10.0 g
1	limestone	0.9 g
26	burnt sandstone	8,262.4 g
1	quartzite	25.2 g

Unit 1027 N, 1010 E was excavated in four levels to a maximum depth of 40 cm below ground surface. The base of the excavation was an arbitrary level in Subsoil A. The stratigraphy in this unit was different from the other units on the site. An ashy soil (Fill Area 1) observed during the probe testing was encountered in the unit and the lower levels (3-4) contained a mix of historic (q.v. Historic Occupation of the Forbus Site) and prehistoric materials and river gravels. Humus C was a dark yellowish-brown (10YR4/4) sandy clay loam mixed with ash about 16 cm thick. Fill Area 1 was a yellowish-brown (10YR5/4) sandy clay mixed with river gravels and ash about 15 cm thick. Subsoil A was a yellowish-brown (10YR5/6) sandy loam mixed with river gravels. The strata in this unit may be the result of historic dumping on this part of the site. The unit contained:

125	chert debris	113.7 g
2	bifaces	12.0 g
1	burnt sandstone	1.6 g
1	limestone	0.5 g

Twenty-five 1 m x 1 m units were excavated as part of Phase II and Phase III investigations. Four strata were observed throughout excavation. The Humus ranged in color from a dark brown to a very dark grayish-brown. The thickness of the Humus varied from 3-9 cm but generally was about 4-5 cm. Subsoil A-1 ranged in color from brown to brownish-yellow. The thickness of Subsoil A-1 varied from 10-23 cm. In most units it was about 20 cm thick. Subsoil A-2 was a strong brown color. The thickness of Subsoil A-2 varied from 17.5-30 cm. In most units it was about 20 cm thick.

The majority of the units along the 1008 E line were not excavated into Subsoil A-2. A few units in this area were excavated into Subsoil A-2 but the density of lithic debris was very low. Units on top of the ridge were excavated into Subsoil A-2 since the density of lithic debris was much greater in this area.

Two rock concentrations, nine rock clusters, and two burnt nutshell concentrations were observed during excavation. All of these features, except Feature 11, were situated in Subsoil A-1. Feature 11 was in Subsoil A-2. A detailed description of each feature is given in the following chapter (q.v. Features).

CHAPTER VI

FEATURES

Andrew P. Bradbury

The investigation of the Forbus site did not reveal any subsurface pit features; however, nine rock clusters, two large rock concentrations, and two burnt nutshell concentrations were excavated. All rocks that comprised a cluster or concentration were mapped and elevations of each rock were recorded. Soil from the area of each burnt nutshell concentration was taken as a flotation sample. All features were encountered during the excavation of 1 m x 1 m units.

ROCK CLUSTERS

Nine rock clusters were examined. Rock clusters are defined as small groups of rocks (n=3-10) in close proximity to each other. Rocks were mapped, piece plotted, and collected separately from the rest of the unit material.

Feature 1 was a cluster of nine (1,675.7 g) pieces of burnt sandstone uncovered in the east central part of Unit 1013 N, 1008 E (Figure 12). The feature was situated in Subsoil A-1, 4-6 cm below ground surface. No diagnostic artifacts were found in association with Feature 1, however, shell tempered ceramics were recovered at the same level in an adjacent unit.

Feature 4 was a cluster of three (7,024.9 g) pieces of burnt sandstone uncovered along the west edge of Unit 1011 N, 1008 E (Figure 12). The rocks were at the Humus/Subsoil A-1 interface, 5 cm below ground surface. No diagnostic artifacts were found in association with Feature 4.

Feature 5 was a cluster of 10 (3,817.4 g) pieces of burnt sandstone uncovered in the north central part of Unit 1014 N, 1008 E. The feature was situated in Subsoil A-1, 18.5-22.5 cm below ground surface. No diagnostic artifacts were found in association with Feature 5. Shell tempered ceramics were recovered from the level above Feature 5 to a depth of 13 cm below ground surface and a Middle Woodland Lanceolate Expanded Stem cluster (Swan Lake type) PPK was recovered from Unit 1015 N, 1009 E at a depth of 16 cm below ground surface.

Feature 6 was a cluster of nine (5,379.4 g) pieces of burnt sandstone uncovered in the south central part of Unit 1002 N, 1007 E. The feature was situated in Subsoil A-1, 9.5-11.5 cm below ground surface. No diagnostic artifacts were found in association with Feature 6.

Feature 7 was a cluster of seven (3,999.4 g) pieces of burnt sandstone in

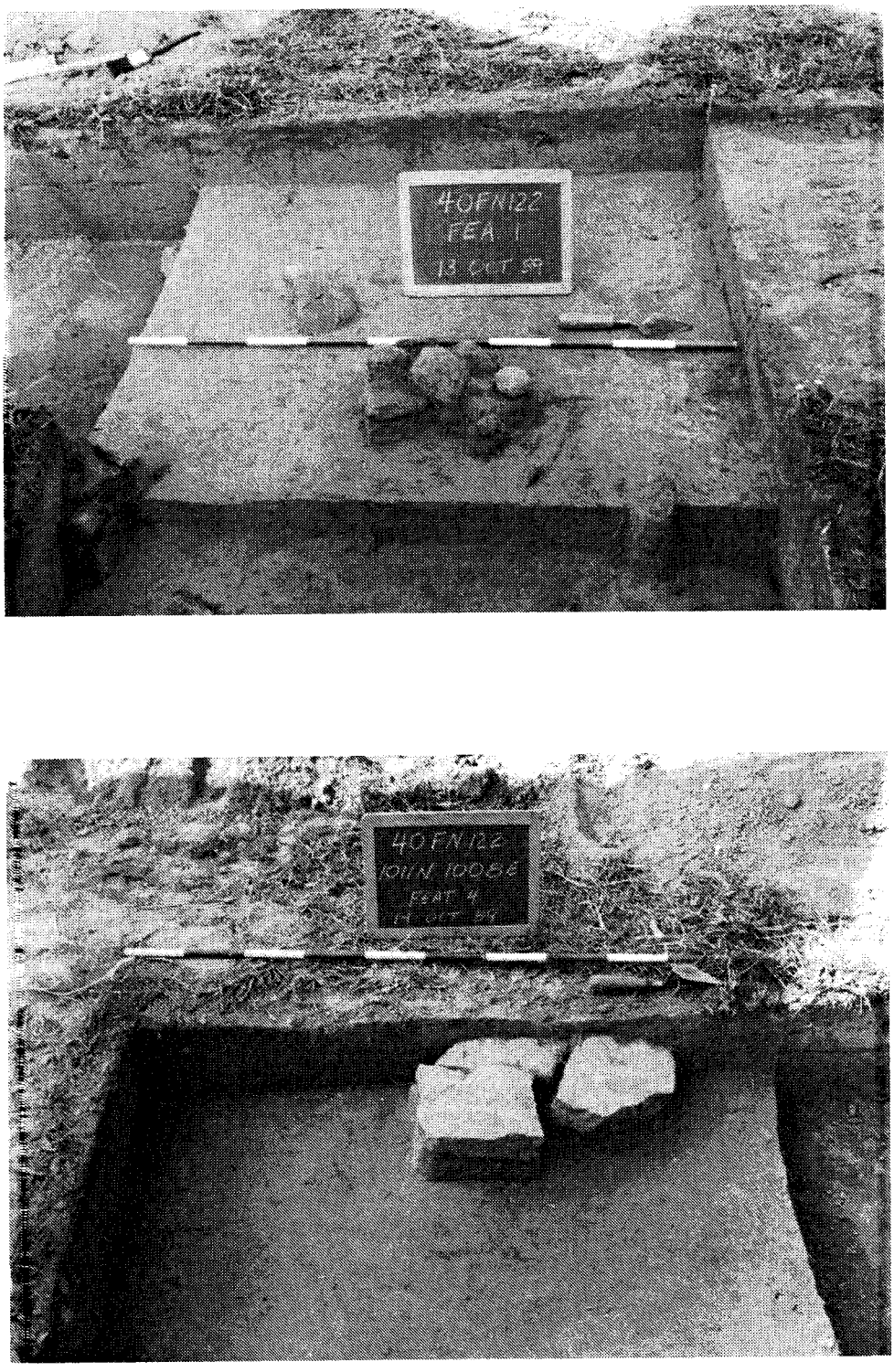


Figure 12. Rock Clusters. Feature 1 (Top) and Feature 4 (Bottom).

the southeast corner of Unit 1005 N, 1009 E. The feature was situated in Subsoil A-1, 15-20 cm below ground surface. No diagnostic artifacts were found in association with Feature 7.

Feature 8 was a cluster of five (6,956.8 g) pieces of burnt sandstone in Unit 1008 N, 1012 E. The feature was situated in Subsoil A-1, 16-23 cm below ground surface. The base of an Early Archaic Kirk cluster PPK was recovered at 17.5 cm below ground surface in this unit. A Late Archaic Ledbetter cluster (Iddins type) PPK was recovered at 23.5 cm below ground surface in an adjacent unit.

Feature 9 was a cluster of five (1,452.1 g) pieces of burnt sandstone uncovered in the southwest corner of Unit 1009 N, 1012 E. The feature was situated in Subsoil A-1, 9.5-13.5 cm below ground surface. Two Mississippian Small Triangular cluster arrow points were recovered between 4-14 cm below ground surface in this unit.

Feature 10 was a cluster of three (4,540.0 g) pieces of burnt sandstone uncovered in the southeast corner of Unit 1009 N, 1012 E. The feature was situated in Subsoil A-1, 24-24.5 cm below ground surface. A Late Archaic Ledbetter cluster (Iddins type) PPK was recovered at 23.5 cm below ground surface in this unit.

Feature 11 was a cluster of 5 (7,203.5 g) pieces of burnt sandstone uncovered in the south central part of Unit 1010 N, 1011 E. The feature was situated in Subsoil A-2, 29-30 cm below ground surface. No diagnostic artifacts were found in association with Feature 11. Two Mississippian Small Triangular cluster arrow points were recovered at 14-15 cm below ground surface in this unit.

ROCK CONCENTRATIONS

Two large rock concentrations were excavated. Rock concentrations are defined as more than 10 rocks in close proximity to each other. Rocks in the concentrations were mapped, piece plotted, and collected separately from the rest of the unit material.

Feature 2 was a large concentration of burnt sandstone uncovered in Units 1026 N, 1003 E; 1026 N, 1004 E; and 1025 N, 1004 E (Figures 13 and 14). Forty-one (15,676.1 g) pieces of burnt sandstone were recovered. The feature was situated in Subsoil A, 10-17 cm below ground surface. An indeterminate Early Archaic projectile point/knife was recovered from within the rock concentration at 10.5 cm below ground surface.

Feature 3 was a circular concentration of burnt sandstone uncovered in Units 1015 N, 1008 E and 1015 N, 1009 E (Figures 14 and 15). A total of 172 (16,673.0 g) pieces of burnt sandstone, 62 (740.6 g) pieces of chert debris, and two (47.6 g)

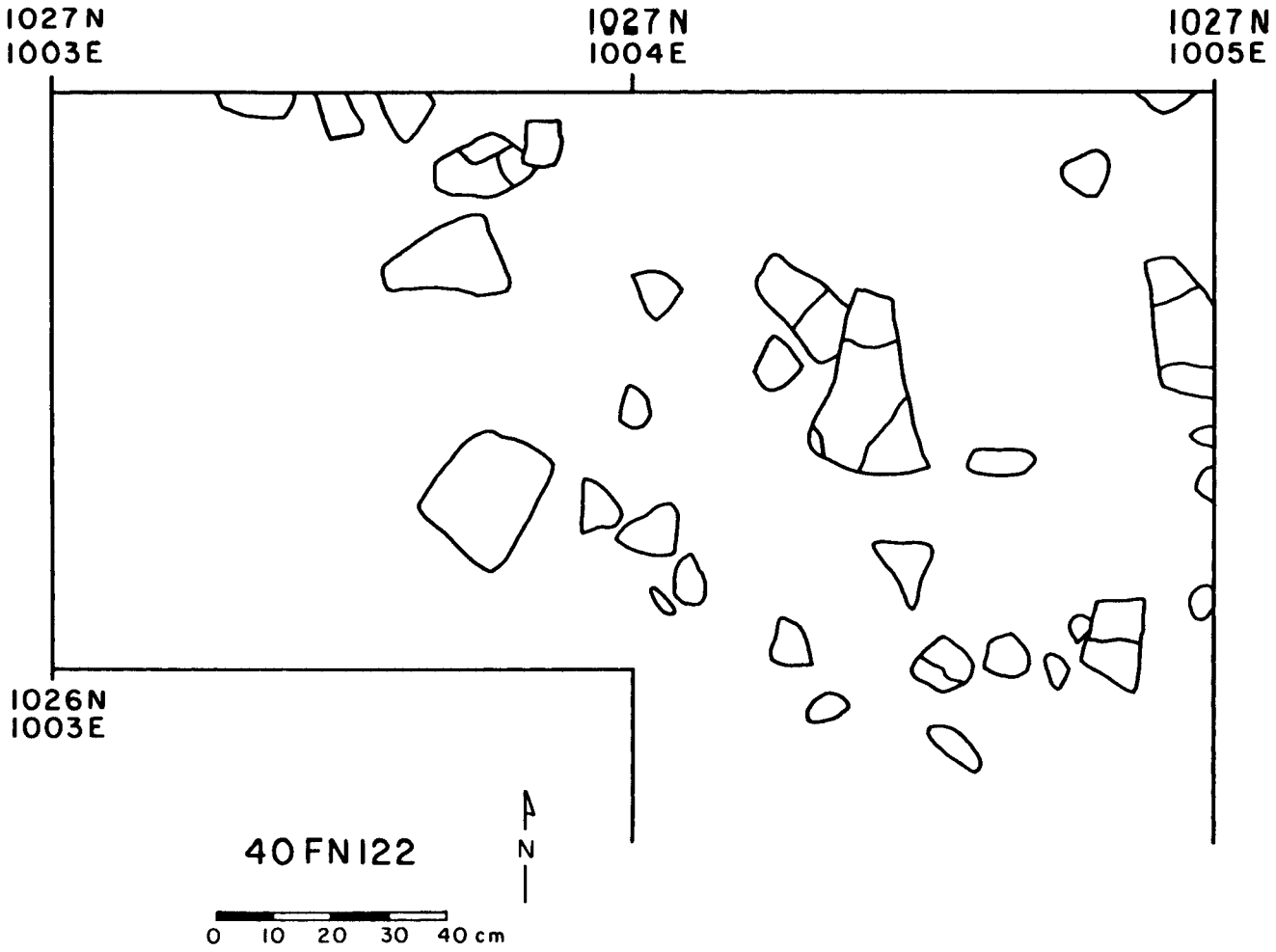


Figure 13. Feature 2, Rock Concentration.

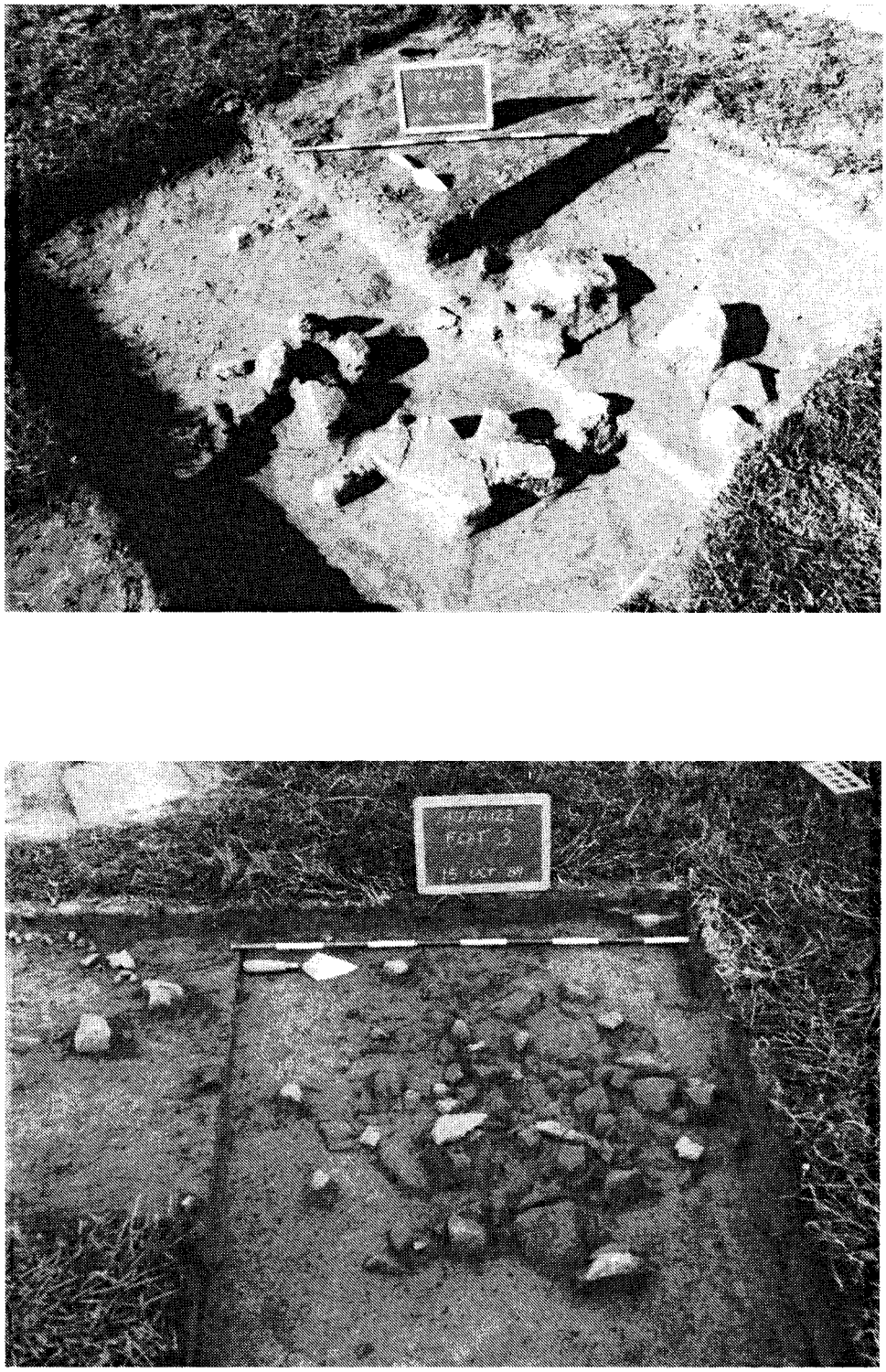


Figure 14. Rock Concentrations. Feature 2 (Top) and Feature 3 (Bottom).

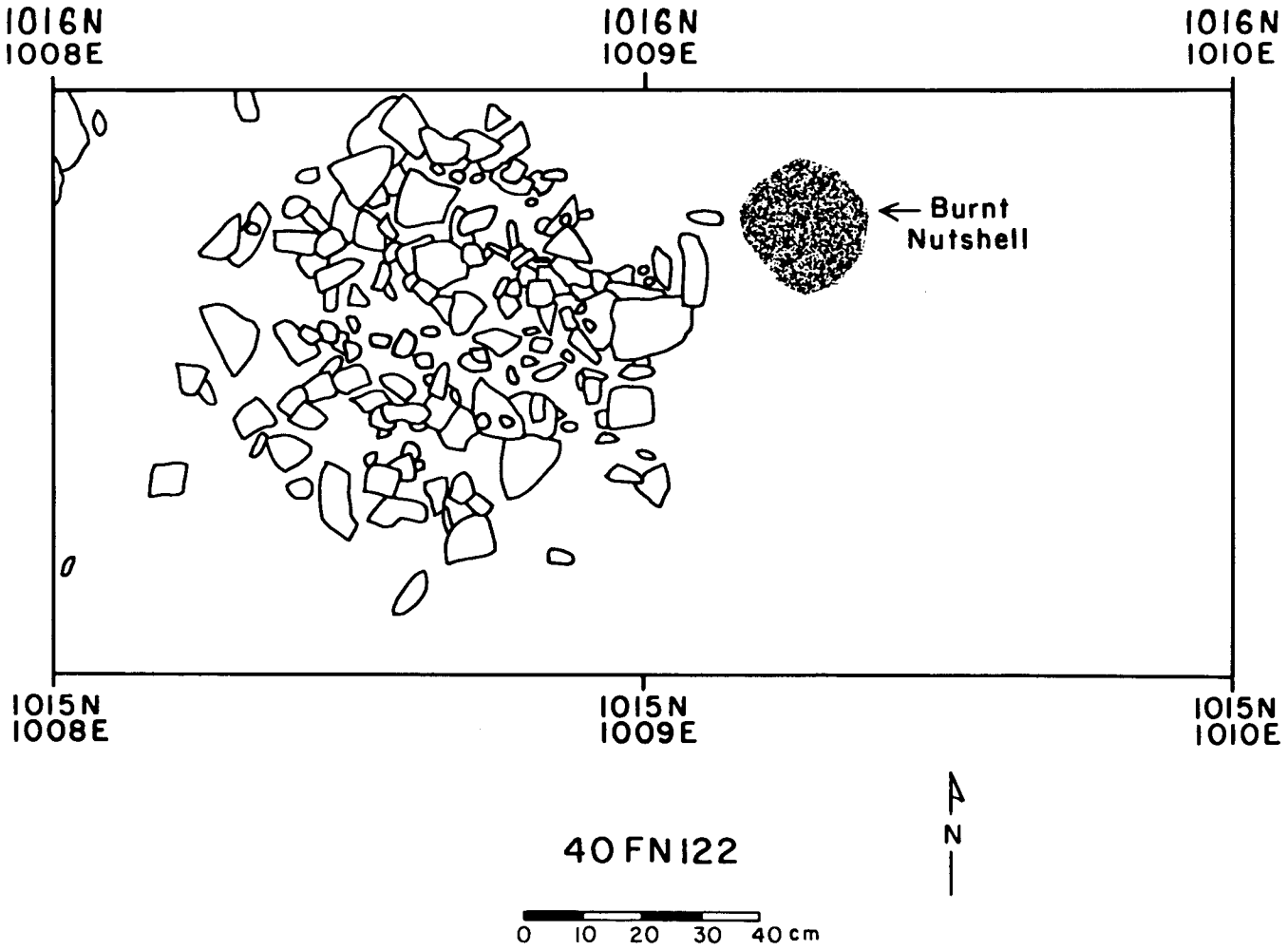


Figure 15. Feature 3, Rock Concentration.

pieces of quartzite was recovered. The rocks were situated in the lower Humus and upper Subsoil A-1, 2-11.5 cm below ground surface. No diagnostic artifacts were found in association with Feature 3, however, shell tempered ceramics were recovered from the same level in an adjacent unit. A Small Triangular cluster (Madison type) arrow point and a Lanceolate Expanded Stem cluster (Swan Lake type) PPK were recovered from Unit 1015 N, 1009 E at 6 cm and 12 cm below ground surface, respectively. A small concentration of burnt nutshell was found at the northeast edge of Feature 3.

BURNT NUTSHELL CONCENTRATIONS

Two small burnt nutshell concentrations were exposed during excavation. One was found adjacent to and in the same level as Feature 3 in Unit 1015 N, 1009 E in Subsoil A-1, 11.5 cm below ground surface (Figure 15). The other concentration was located in Unit 1016 N, 1008 E in Subsoil A-1, 8-15 cm below ground surface. The burnt nutshell fragments in both concentrations were small and scattered. All soil from the area of each concentration was taken as a flotation sample.

SUMMARY AND INTERPRETATION

Nine rock clusters, two rock concentrations, and two burnt nutshell concentrations were identified during the excavation of 1 m x 1 m units at the Forbus site. Sandstone in the rock clusters and concentrations showed evidence of burning or heating. The rock clusters and concentrations probably represent prehistoric campfire loci or secondary heat sources for cooking purposes.

All features, with the exception of Feature 11, were found in Subsoil A-1. Feature 11 was in Subsoil A-2. Rock clusters ranged in size from three rocks (Feature 4) to 10 rocks (Feature 5). The two rock concentrations were much larger with 41 and 172 rocks.

The cultural affiliations of several features can be determined from the associations of these features with diagnostic artifacts. Diagnostic artifacts were found in direct association with Feature 2. An indeterminate Early Archaic PPK, probably Kirk cluster, was recovered from within the rock concentration. Diagnostic artifacts were found within the same stratum as Features 1, 3, 5, 8, 9, and 11. Shell tempered ceramics were recovered from the same level as Features 1 and 3 but in an adjacent unit. A Small Triangular cluster (Madison type) arrow point was recovered from the same level and unit as Feature 8. Two Small Triangular cluster arrow points were recovered from the same unit and level as Feature 9. Feature 11 was found in Subsoil A-2. All diagnostics from Subsoil A-2 are Early Archaic Kirk cluster.

Based upon these diagnostic artifact associations; it has been determined that Features 2 and 11 are Early Archaic, Features 1, 3 and 9 are Mississippian, Feature 5 is from a pre-Mississippian occupation, and Feature 8 is Late Archaic. The Kirk cluster

PPK recovered in the same level with Feature 8 is assumed to be out of place. All other Kirk cluster material was recovered from Subsoil A-2.

CHAPTER VII

LITHIC RAW MATERIALS

Andrew P. Bradbury

The majority of the recovered lithic materials, by number of pieces, was chert. When possible all chert debris was classified according to the parent geological formation. Other lithic materials recovered from the site were identified to the geologic rock type. The area surrounding the site, including Caney Creek and the Wolf River, contains abundant chert resources that could have been utilized by aboriginal groups. Chert is found outcropping in the Mississippian age Fort Payne, St. Louis, and Monteagle Limestone formations. In addition to chert, chalcedony and agate were also used in small quantities for tool manufacture. Sandstone from the Cumberland Plateau was brought to the site for cooking purposes. Materials were recovered from 6.4 mm dry screen, flotation, surface collection, and soil probe contexts. A total of 5,924 (7,471.4 g) pieces of modified chert debris, 84 (683.7 g) tools, 663 (89,616.1 g) non-chert lithics, and 500 (5,134.7 g) pieces of unmodified chert debris was recovered from excavated contexts. Material from the surface collections, with the exception of one (6.2 g) PPK, was not examined as part of this analysis.

FORT PAYNE CHERT

Fort Payne chert is common throughout the Interior Low Plateau Physiographic Province and is available in close proximity to the site (Barnes 1968). This chert type occurs in various colors and has been recognized as a major raw material source utilized by prehistoric groups throughout the Southeast (Amick 1984; Ensor 1981; Faulkner and McCollough 1974; Futato 1983). It occurs as nodules in the formation and can be obtained as gravels in the Wolf River (Barnes 1968). A total of 948 (1,269.O g) pieces of debris and 24 (79.4 g) tools was identified as Fort Payne chert.

ST. LOUIS CHERT

St. Louis chert is a common chert type found in the higher elevations of the Highland Rim. This fine-grained chert has a distinct blue-green to blue-gray vitreous translucent appearance. St. Louis chert outcrops in close proximity to 40FN122 and can be found in the gravels of Caney Creek adjacent to the site. St. Louis chert occurs as cobble-sized "cannonball" concretions and also as lenses and small nodules within the St. Louis Limestone Formation (Barnes 1968). A total of 2,902 (2,485.2 g) pieces of debris and 44 (299.5 g) tools was identified as St. Louis chert.

MONTEAGLE CHERT

Monteagle chert is a dense medium-dark gray chert that can be found in the Highland Rim. This chert type occurs close to 40FN122 (Barnes 1968); however, it was not utilized to the same degree as the Fort Payne and St. Louis cherts. Monteagle chert occurs in thin beds, lenses, and nodules within the Monteagle Limestone Formation (Barnes 1968). Seventy-seven (17.9 g) pieces of debris and 3 (20.0 g) tools were identified as Monteagle chert.

INDETERMINATE CHERT

Chert that could not be definitely assigned to a type was classified as indeterminate. Four categories of indeterminate chert were recognized for the 40FN122 debris. These are Fort Payne/St. Louis indeterminate, St. Louis/Monteagle indeterminate, indeterminate (suspect local), and indeterminate (suspect non-local). The categories of Fort Payne/St. Louis indeterminate and St. Louis/Monteagle indeterminate were deemed necessary because the variability of these chert types sometimes made it difficult to determine chert type accurately, especially when dealing with the smaller size grades. A total of 2,228 (7,059.9 g) pieces of debris and eight (30.6 g) tools recovered was identified as indeterminate cherts.

CHALCEDONY

Chalcedony is a translucent to transparent milky or grayish quartz. The St. Louis and Fort Payne formations may be the local sources of chalcedony. A total of 220 (1,64-9.0 g) pieces of debris and 5 (30.7 g) tools recovered was identified as chalcedony.

AGATE

Agate is a fine-grained fibrous variety of chalcedony with color banding or irregular clouding. The source of this material is unknown, although it probably occurs in Mississippian formations of the Highland Rim (Faulkner and McCollough 1974). Small quantities of agate were recovered from 40FN122. Twenty-three (95.4 g) pieces of debris were identified as agate. No tools manufactured from agate were found.

QUARTZ

Quartz occurs locally in the form of geodes within the Fort Payne and St. Louis formations. Quartz is a dense white opaque material that was utilized for tool manufacture and as a hard hammer in percussion flaking. Quartz was utilized infrequently at 40FN122. Twenty-six (29.7 g) pieces of debris were identified as quartz. No tools were manufactured from quartz.

QUARTZITE

Quartzite is a metamorphic rock resulting from the recrystallization of quartz sandstone. It is similar to quartz but has a more grainy texture. Quartzite was used as a raw material in the manufacture of tools. Unmodified cobbles were utilized as hard hammers in percussion flaking. Five (74.0 g) pieces of debris and 1 (229.7 g) hammerstone were identified as quartzite.

SANDSTONE

Sandstone is plentiful on the Cumberland Plateau. By weight, sandstone was the most abundant lithic material utilized at 40FN122. The majority of the sandstone recovered at the site showed evidence of burning. The presence of sandstone probably can be attributed to a secondary heat source for cooking purposes. A total of 617 (88,889.0 g) pieces of sandstone was recovered. No tools were manufactured from sandstone.

LIMESTONE

Limestone occurs locally in the Fort Payne, St. Louis, Monteagle, and Bangor formations. The occurrence of limestone at the site may be as a secondary heat source for cooking or from the removal of cortex from chert. Thirty-seven (91.0 g) pieces of limestone were recovered. No tools were manufactured from limestone.

HEMATITE

Hematite is an iron-bearing rock that is black in color and very dense. Hematite was used prehistorically for tools and as a pigment source. This material could be obtained from the Cumberland Plateau. Three (91.0 g) pieces of unmodified hematite were recovered.

INDETERMINATE LITHIC

One (471.1 g) unidentified rock was recovered. This specimen appeared to be some type of fossilized coral.

SUMMARY

The Forbus site is situated at the eastern edge of the Highland Rim in close proximity to the Cumberland Plateau. Lithic resources from both areas were utilized by inhabitants of the site.

Chert resources are generally lacking on the Cumberland Plateau (Pace et al. 1986) but are abundant throughout the Highland Rim area. Chert occurs in the Mississippian age Fort Payne, St. Louis, and Monteagle Limestone formations. Chert can also be obtained from gravels in the Wolf River and Caney Creek. Chalcedony, agate, limestone, quartz, and quartzite are available in the Highland Rim. Sandstone is abundant on the Cumberland Plateau. The majority of sandstone recovered at 40FN122 was burnt and probably used as a secondary heat source for cooking.

Lithic resources exploited by the prehistoric inhabitants of the Forbus site indicate that local materials were intensively utilized. No exotic material was identified in the lithic assemblage. No pecked, ground, or abraded stone tools were recovered.

CHAPTER VIII

LITHIC ANALYSIS

Andrew P. Bradbury

Lithic debris and tools comprise the majority of the prehistoric artifacts from 40FN122 (Table 1). Cultural material was collected during the surface collection of eroded areas and the excavation of 1 m x 1 m units. A total of 5,924 (7,471.4 g) pieces of modified chert debris, 84 (683.7 g) tools, 500 (5,134.7 g) pieces of unmodified chert debris, and 663 (89,616.1 g) non-chert lithics was recovered from excavated contexts. Material from the surface collections, with the exception of one (6.2 g) PPK, was not examined as part of this analysis. The chert debris includes small quantities of chalcedony, agate, and quartz.

The analysis of lithic material can provide important information about prehistoric activities at a site. Debitage is a useful indicator of prehistoric activities because, unlike tools, it is usually deposited where it was generated. For this reason debitage is a good indicator of raw material types and reduction techniques represented in an assemblage. During the analysis stage, all material is treated as one analytical unit; i.e. Mass Analysis (Ahler 1975). This type of analysis emphasizes attributes such as raw material type, cortex, and biface thinning flake platform frequencies for each flake debris category and size grade.

The lithic material consists of a variety of cryptocrystalline quartz (i.e., chert and chalcedony) debris, small tools, bifacial tools, unmodified cherts, and non-chert artifacts and debris (e.g., sandstone). Early Archaic, Late Archaic, Middle Woodland, and Mississippian diagnostic artifacts were identified. The diagnostic PPKs are mostly in the Early Archaic Kirk cluster and the Mississippian Small Triangular cluster.

LABORATORY METHODS

Material recovered from dry screen and flotation contexts was processed in three steps prior to analysis. The first step was to sort material into several artifact categories (i.e., debitage and cores, small tools, non-diagnostic bifacial tools, and PPKs). The second step consisted of recording attributes of the material in a computer coding format. The final step was to enter all artifact codes into a computer program. Artifact codes were entered onto the computer, edited, and rechecked against the original material to check for consistency throughout the coding process. The corrected data set was then read into a SAS format and a series of programs was written to manipulate the variables.

Table 1. Debris and Tools by Unit and Stratum.

Unit and Stratum	Flake Debris	Unmodified Chert Debris	Core/Core Fragments	Bipolar Cores and Flakes	Blocky Debris	Tested Cobbles	Spalls	Tools
1002N, 1007E								
Humus	16	1			4			
Subsoil A-1	83	7			15	1	7	1
Subsoil A-2	113	26			7		2	4
Subtotal	212	34	0	0	26	1	9	5
1005N, 1009E								
Humus	2	1			2			1
Subsoil A-1	27	16		1	1			1
Subsoil A-2	16	2			1			
Subtotal	45	19	0	1	4	0	0	2
1008N, 1008E								
Humus	5				1			
Subsoil A-1	43	2		1	8			3
Subsoil A-2	10				4			1
Subtotal	58	2	0	1	13	0	0	4
1008N, 1012E								
Humus	38	6			5		1	
Subsoil A-1	278	6			26		10	2
Subsoil A-2	388	3	2		24		18	4
Subtotal	704	15	2	0	55	0	29	6
1009N, 1012E								
Humus	52	4		1	10		3	3
Subsoil A-1	263	5	2		18		11	3
Subsoil A-2	325	4		1	14	1	14	7
Subtotal	640	13	2	2	42	1	28	13
1010N, 1009E								
Humus	14	14			5	1		
Subsoil A-1	39	33	3		7	1		
Subsoil A-2	30	12					1	
Subtotal	83	59	3	0	12	2	1	0

Table 1. continued.

Unit and Stratum	Flake Debris	Unmodified Chert Debris	Core/Core Fragments	Bipolar Cores and Flakes	Blocky Debris	Tested Cobbles	Spalls	Tools
1010N, 1010E								
Humus	4	2			2			1
Subsoil A-1	26	4		1	1			2
Subsoil A-2	5	2						
Subtotal	35	8	0	1	3	0	0	3
1010N, 1011E								
Humus	17	3			2			
Subsoil A-1	100	4			9		3	5
Subsoil A-2	35	11			3			1
Subtotal	152	18	0	0	14	0	3	6
1010N, 1012E								
Humus	37	4						1
Subsoil A-1	112	3	1		8	2	1	5
Subsoil A-2	409	3			18		1	7
Subsoil B	23	3					1	
Subtotal	581	13	1	0	26	2	3	13
1010N, 1013E								
Humus	20				2			
Subsoil A-1	300	18	1		29		8	3
Subsoil A-2	203	7			30		2	1
Subtotal	523	25	1	0	61	0	10	4
1011N, 1008E								
Humus	20	4			4	1		
Subsoil A-1	29	8			9	1		
Subtotal	49	12	0	0	13	2	0	0
1012N, 1008E								
Humus	8	2			9		1	
Subsoil A-1	16	2	2		13			
Subtotal	24	4	2	0	22	0	1	0

Table 1. continued.

Unit and Stratum	Flake Debris	Unmodified Chert Debris	Core/Core Fragments	Bipolar Cores and Flakes	Blocky Debris	Tested Cobbles	Spalls	Tools
1013N, 1008E								
Humus	8	4			3	2	3	
Subsoil A-1	13	3			2	1	1	
Subtotal	21	7	0	0	5	3	4	0
1013N, 1009E								
Humus	11	1			3			1
Subsoil A-1	8	2			3			
Subtotal	19	3	0	0	6	0	0	1
1014N, 1008E								
Humus	34	8			6	1	8	
Subsoil A-1	48	8			9	3	8	2
Subtotal	82	16	0	0	15	4	16	2
1015N, 1008E								
Humus	218	10		4	16		3	1
Subsoil A-1	68	43	1		13	2	1	
Subsoil A-2	28	4	1		5	1		
Subtotal	314	57	2	4	34	3	4	1
1015N, 1009E								
Humus	58	1		1	11			1
Subsoil A-1	96	5			15			2
Subsoil A-2	31	5			2			1
Subtotal	185	11	0	1	28	0	0	4
1016N, 1008E								
Humus	13	8			9		3	
Subsoil A-1	81	24			13	1	3	
Subtotal	94	32	0	0	22	1	6	0

Table 1. continued.

Unit and Stratum	Flake Debris	Unmodified Chert Debris	Core/Core Fragments	Bipolar Cores and Flakes	Blocky Debris	Tested Cobbles	Spalls	Tools
1017N, 997E								
Humus	4	38		1	5			1
Subtotal	4	38	0	1	5	0	0	1
1021N, 1004E								
Humus	23	5			7			3
Subsoil A-1	174	24		4	30		7	2
Subtotal	197	29	0	4	37	0	7	5
1023N, 1004E								
Humus	22	1			1	1		
Subsoil A-1	222	1		1	34	2	11	1
Subsoil A-2	81	5			4			
Subtotal	325	7	0	1	39	3	11	1
1025N, 1004E								
Humus	131	22			25	2	10	2
Subsoil A-1	147	1			7	1	2	4
Subtotal	278	23	0	0	32	3	12	6
1026N, 1003E								
Humus	127	6			12		2	1
Subtotal	127	6	0	0	12	0	2	1
1026N, 1004E								
Humus	121	17			10	1	9	3
Subsoil A	161	12	1	1	19	2	11	1
Subtotal	282	29	1	1	29	3	20	4

Table 1. continued.

Unit and Stratum	Flake Debris	Unmodified Chert Debris	Core/Core Fragments	Bipolar Cores and Flakes	Blocky Debris	Tested Cobbles	Spalls	Tools
1027N, 1010E								
Level 1		1			1			
Level 2	4	1			4		1	
Level 3	19	4	1		16		2	2
Level 4	28	13			30			
Subtotal	51	19	1	0	51	0	3	2
Probe Tests								
Subtotal	4	1						
Site Total[a]	5,089	500	15	17	606	28	169	84

[a]Does not include surface collection material.

Size Grade

All debitage, cores, unmodified chert (river gravels or residual cherts), and tools were "size graded" by passing the material through a series of nested wire screens (Table 2). Material was passed through six screens ranging in size from 3.1 mm (1/8 inch), 6.4 mm (1/4 inch), 12.7 mm (1/2 inch), 25.4 mm (1 inch), 50.8 mm (2 inches), to 76.2 mm (3 inches). Material less than 3.1 mm was not examined as part of the analysis. All tools were removed at this time and set aside for further analysis. Non-chert lithics were not size graded. The majority of material was recovered in the 6.4 mm (3,231 pieces) and 3.1 mm (1,132 pieces) screens.

Cortex

Cortex is the outer layer that is present on chert nodules and cobbles. This outer layer is sometimes present on debris and tools. Cortex categories consist of matrix/residual, waterworn, incipient fracture planes, and combinations of incipient and residual or waterworn cortex (Table 3). Matrix/residual cortex was identified by a thick chalking or a rough appearance. Waterworn cortex is the result of tumbling action in a stream or river. It is characterized by a dense hard often brown stained appearance with rounded or smoothed edges. Incipient fracture planes have flat angular surfaces where chert has fractured along a natural cleavage. The majority of the material (4,951 pieces) lacked cortex.

Thermal Alteration

Previous authors have noted the role of thermal alteration in core and biface reduction strategies (Grubb 1986; Johnson and Morrow 1981). Since definite evidence of thermal alteration is not easily distinguishable, several categories of thermal alteration were used: no evidence of heating, possible heating before final modification, definite evidence of heating prior to final modification, and evidence of unintentional heating (Table 4). Thermal alteration has occurred when one or more of the following traits are present: color change, increased luster, and heat fractures such as incipient pot lidding, pot lids, crenation, or crazing. Characteristics such as pot lidding, crenation, and crazing are interpreted as unintentional products of thermal alteration. Twenty pieces of debris show definite evidence of thermal alteration prior to final modification, 86 pieces were possibly thermally altered prior to final modification, and 410 pieces show evidence of unintentional thermal alteration.

CHERT DEBITAGE

Debitage was separated into flake debris, non-flake debris, and debris less than 3.1 mm in size. Flake debris are positive waste flakes which have no evidence of utilization or retouch. Non-flake debris are chert debitage other than flake debris.

Table 2. Modified and Unmodified Chert by Size Grade.

Size	Number of Specimens	Percentage of Total
< 3.1 mm	499	8.4
3.1 mm	1,132	19.1
6.4 mm	3,231	54.5
12.7 mm	808	13.6
25.4 mm	218	3.7
50.8 mm	33	0.6
76.2 mm	3	0.1
Total	5,924	100.0

Table 3. Modified and Unmodified Chert by Cortex.

Cortex Type	Number of Specimens	Percentage of Total
No Cortex	4,951	77.1
Matrix/Residual	856	13.3
Waterworn Cobble	396	6.2
Incipient Fracture Planes	137	2.1
Matrix/Residual and Incipient	81	1.3
Waterworn and Incipient	3	0.1
Total	6,424	100.1

Table 4. Modified and Unmodified Chert by Thermal Alteration.

Alteration Type	Number of Specimens	Percentage
No Evidence	5,908	92.0
Possible Thermal Alteration Prior to Final Modification	86	1.3
Definite Thermal Alteration Prior to Final Modification	20	0.3
Evidence of Unintentional Thermal Alteration	410	6.4
Total	6,424	100.0

For the initial sorting and coding of debris, a method of analysis proposed by Sullivan and Rozen (1985) was adapted for the Forbus material. In this analysis, a hierarchical key with interpretation-free categories was utilized to separate debris into meaningful categories (Figure 16). By making use of this key, debitage could be separated easily without much need of interpretation. This allowed for consistency to be maintained in the coding of the debitage.

Flake Debris

Flake debris consists of complete and broken flakes. No evidence of utilization or modification was observed. Seven categories of complete flakes and seven broken flake categories were recognized (Table 5).

Complete flakes. Complete flakes have a platform, bulb of percussion, and a distal terminus. Complete flakes were separated into categories depending on the presence of cortex, platform configuration, and negative flake scars on the dorsal face. These categories are primary decortication flakes, secondary decortication flakes, tertiary flakes, bipolar flakes, biface thinning flakes, retouch flakes, and blades.

Primary decortication flakes are core reduction flakes with full (100%) dorsal cortex, bulbs of percussion, and intact platforms. A total of 138 (274.9 g) primary decortication flakes was identified.

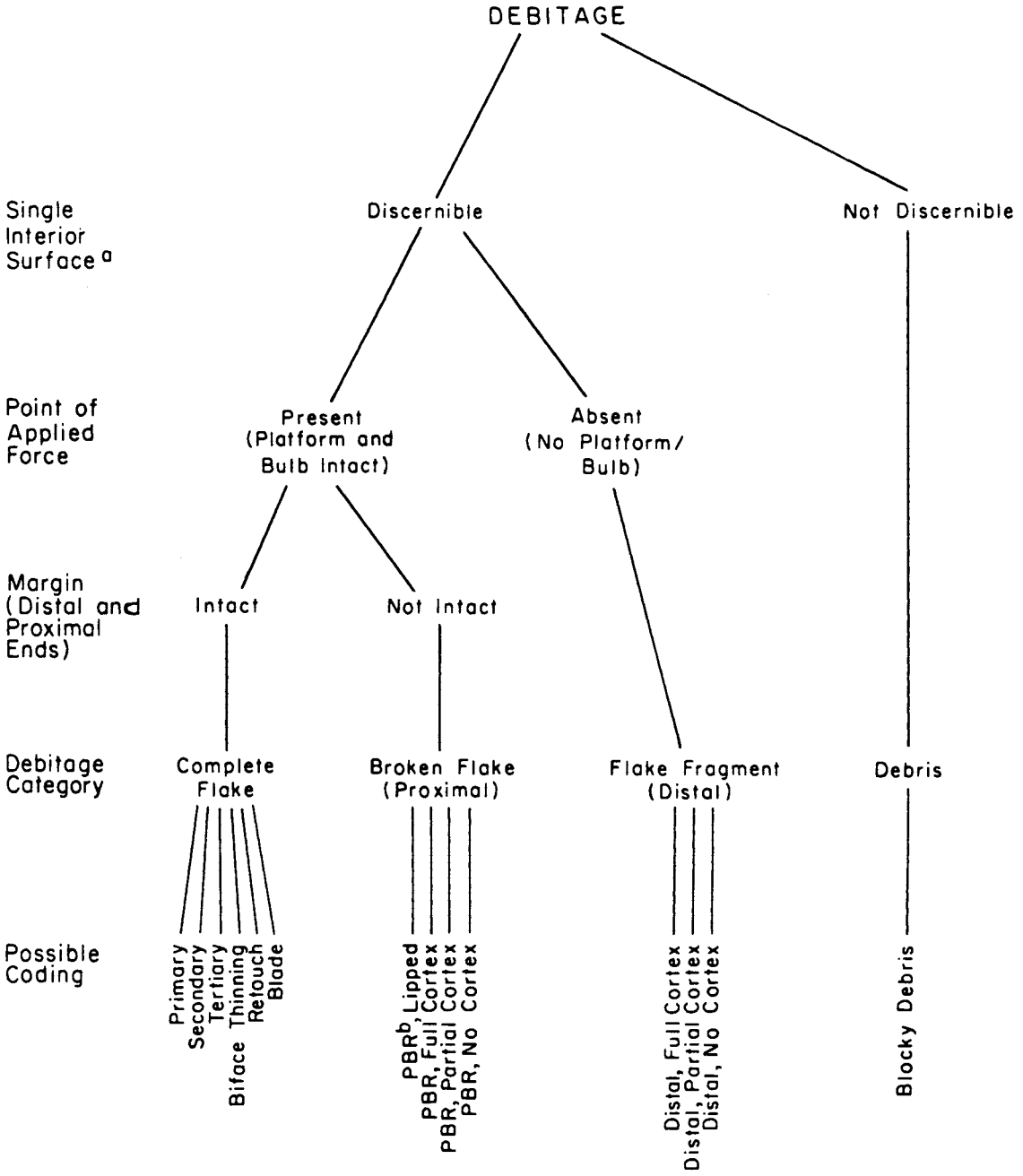
Secondary decortication flakes are core reduction flakes that exhibit partial cortex (less than 100%) and have negative flake scars on the dorsal face. The bulb of percussion and platform are intact. A total of 388 (990.4 g) secondary decortication flakes was identified.

Tertiary flakes are flakes that have no cortex on the dorsal face but may have cortex on the platform. Negative flake scars may be present on the dorsal face. The platform and bulb of percussion are intact. A total of 1,596 (1,018.6 g) tertiary flakes was identified.

Bipolar flakes are produced when bipolar reduction techniques are used for removing flakes from a core. This type of flake is characterized by the presence of two bulbs and crushing on both platforms. Five (9.0 g) bipolar flakes were identified.

Biface thinning flakes usually exhibit a small lipped platform and may have negative flake scars on the dorsal face. The platform may have evidence of crushing or abrading. A total of 386 (241.6 g) biface thinning flakes was identified.

Retouch flakes are produced during the final shaping and resharpening of a tool or when preparing a striking platform. Retouch flakes exhibit small platforms and are small in size and usually ovoid in shape. Retouch flakes were probably produced by pressure flaking techniques. Due to their small size, many retouch flakes passed through the 6.4 mm dry screen mesh. Many of these small flakes were recovered in the heavy fraction of flotation samples. A total of 333 (17.1 g) retouch flakes was identified.



a-Positive Percussion Features Such As Ripple Marks, Force Lines, or a Bulb of Percussion.
b-Platform Bearing Remnant — Platform and Bulb of Percussion.

Figure 16. Coding Format for Chert Debitage. After Sullivan and Rozen (1985).

Table 5. Debris Type by Size Grade.

Debris Type	Size Grade						Total
	3.1 mm	6.4 mm	12.7 mm	25.4 mm	50.8 mm	76.2 mm	
Primary Decortication	27[a]	11	61	35	4		138
Secondary Decortication	3	16	213	143	13		388
Tertiary Flakes	282	1,112	194	8			1,596
Bipolar Flakes		2	3				5
Biface Thinning	22	293	68	3			386
Retouch	223	110					333
Blade			2				2
Broken, PRB,[b] Lipped	6	53	10				69
Broken, PRB, Full Cortex		5	2				7
Broken, PRB, Partial Cortex	13	29	12				54
Broken, PRB, No Cortex	19	147	27				193
Broken, Distal, Full Cortex	8	24	8				40
Broken, Distal, Partial Cortex	9	90	24	1			124
Broken, Distal, No Cortex	313	847	97	1			1,258
Blocky Debris	175	356	70	5			606
Tested Cobble				11	16	3	30
Bipolar Core			5	1			6
Core/Core Fragment		2	4	9			15
Bipolar Debris		6					6

Table 5. continued.

Debris Type	Size Grade						Total
	3.1 mm	6.4 mm	12.7 mm	25.4 mm	50.8 mm	76.2 mm	
Spall	32	128	8	1			169
Subtotal							5,425
Less Than 3.1 mm							499
Site Total							5,924

[a]Number of specimens.
[b]PRB=platform remnant bearing, platform and bulb of percussion.

Blades are long thin flakes with a length twice the width. Blades are usually struck from a prepared core. Two (1.8 g) blades were identified.

Broken flakes. Broken flakes were coded separately because of the problems with inflating secondary decortication flake categories (Amick 1984). Broken flakes were separated into seven categories depending on the portion of the flake (distal or proximal), presence of cortex on the dorsal surface, and the platform configuration. The broken flake categories are:

	n	Weight(g)
Lipped Platform	69	35.7
Platform Intact, Full Cortex	7	5.7
Platform Intact, Partial Cortex	54	57.4
Platform Intact, No Cortex	193	106.0
Distal (No Platform), Full Cortex	40	41.3
Distal (No Platform), Partial Cortex	124	156.2
Distal (No Platform), No Cortex	1,258	462.1

Non-Flake Debris

Non-flake debitage consists of the spent chert nuclei left from producing flakes. These have negative flake scars and show no evidence of further utilization or modification. Six categories of non-flake debris were recognized in the assemblage from 40FN122. These categories are blocky debris, tested cobble, core, bipolar debris, bipolar core, and spall.

Blocky debris are angular pieces of debitage with definite evidence of flaking but are not assignable to a flake category. A total of 606 (651.4 g) pieces of blocky debris was identified.

Tested cobbles are nodules or cobbles of chert with less than three flakes removed. Thirty (2,768.9) tested cobbles were identified.

Cores have three or more negative flake scars that were intentionally produced. Cores were used for the production of flakes, thus the "core" was not the intended end product. Cores that exhibited evidence of bipolar flake removals were coded as bipolar cores. Fifteen (476.5 g) cores or core fragments were identified.

Bipolar cores are cores that exhibit evidence of bipolar flaking techniques. Six (57.9 g) bipolar cores were identified.

Bipolar debris are blocky fragments associated with bipolar flaking techniques. Six (7.0 g) pieces of bipolar debris were identified.

Spalls are flakes that have been badly damaged by thermal alteration and are no longer identifiable to a flake type. A total of 169 (89.5 g) spalls was identified.

Debris Less Than 3.1 mm

Debris less than 3.1 mm in size was counted and weighed. A total of 499 (2.4 g) pieces of debris was less than 3.1 mm. This debris was not used in the analysis.

CHERT TOOLS

Several tool types were recognized in the Forbus site lithic assemblage (Table 6). These consist of 20 bifaces and biface fragments, 25 PPKs and PPK fragments, four scrapers (Figure 17C), one drill, six utilized flakes, 18 retouched flakes (Figure 17A), four gravers (Figure 17B), one spokeshave, and five indeterminate bifacial tools. One of the PPKs was recovered during the surface collection. All other tools were recovered from excavated contexts.

Several criteria were used to differentiate between utilized flakes and retouched flakes. Utilized flakes exhibit damage along one or more flake margins due to use (scraping or cutting). Retouched flakes are the result of intentional reshaping of one or more flake margins to change the flake into the desired form.

Bifaces

Three stages of biface manufacture were recognized. In addition, categories for indeterminate biface fragments and indeterminate bifacial tools were also recognized. Initial stage bifaces are crude bifacially flaked implements usually with cortex on one or more faces. Hard hammer percussion was the method of manufacture. Intermediate stage bifaces rarely exhibit cortex and are predominantly shaped by soft hammer percussion. Late stage bifaces exhibit pressure flaked or shaped margins but are still in an unfinished form (Figure 18). Biface fragments were coded according to portion present (proximal, distal, and medial) as were PPK fragments.

Projectile Points/Knives

Projectile point/knife cluster and type definitions and identifications were made with the use of type collections in The University of Tennessee, Department of Anthropology and technical reports. The main source of this typology is Faulkner and McCollough (1973). Sixteen PPKs and nine PPK fragments were recovered during the excavation of 1 m x 1 m units. One PPK was recovered from the surface collection. PPKs representing four clusters were identified. These are Kirk cluster, Ledbetter cluster, Lanceolate Expanding Stem cluster, and Small Triangular cluster. Diagnostic PPKs were coded by cultural and temporal type. Ten PPKs were identified as to type within a cluster and one PPK was identified to a cluster. Five PPKs were identified as indeterminate and coded as such. Three were identified to stage/period. Metric and non-metric attributes were recorded for these artifacts. The non-metric attributes are

Table 6. Tools by Unit and Stratum.

Unit	Stratum	Bifaces, Fragments, and Indeterminate Bifacial Tools	PPKs and Fragments	Scraper	Drill	Utilized Flake	Retouched Flake	Graver	Spoke shave	Hammer-stone
1002N, 1007E	A-1		1							
	A-2	1	2						1	
1005N, 1009E	Humus									1
	A-1		1							
1008N, 1008E	A-1	1	2							
	A-2	1								
1008N, 1012E	A-1		1				1			
	A-2	1				1	1	1		
1009N, 1012E	Humus		1				2			
	A-1		3							
	A-2	4		2			1			
1010N, 1010E	Humus						1			
	A-1		1					1		
1010N, 1011E	A-1	1	2		1		1			
	A-2		1							
1010N, 1012E	Humus	1								
	A-1	3					1	1		
	A-2	4	2				1			
1010N, 1013E	A-1	1					2			
	A-2						1			
1013N, 1009E	Humus						1			
1014N, 1008E	A-1		2							

Table 6. continued.

Unit	Stratum	Bifaces, Fragments, and Indeterminate Bifacial Tools	PPKs and Fragments	Scraper	Drill	Utilized Flake	Retouched Flake	Graver	Spoke shave	Hammer-stone
1015N, 1008E	A-1						1			
1015N, 1009E	Humus		1							
	A-1	1	1							
	A-2					1				
1017N, 997E	Humus			1						
1021N, 1004E	Humus	2		1						
	A-1						1	1		
1023N, 1004E	A-1		1							
1025N, 1004E	Humus	1					1			
	A-1					4				
1026N, 1003E	Humus	1								
1026N, 1004E	Humus		1				2			
	A-1		1							
1027N, 1010E	Level 3/4	2								
Total		25	24	4	1	6	18	4	1	1

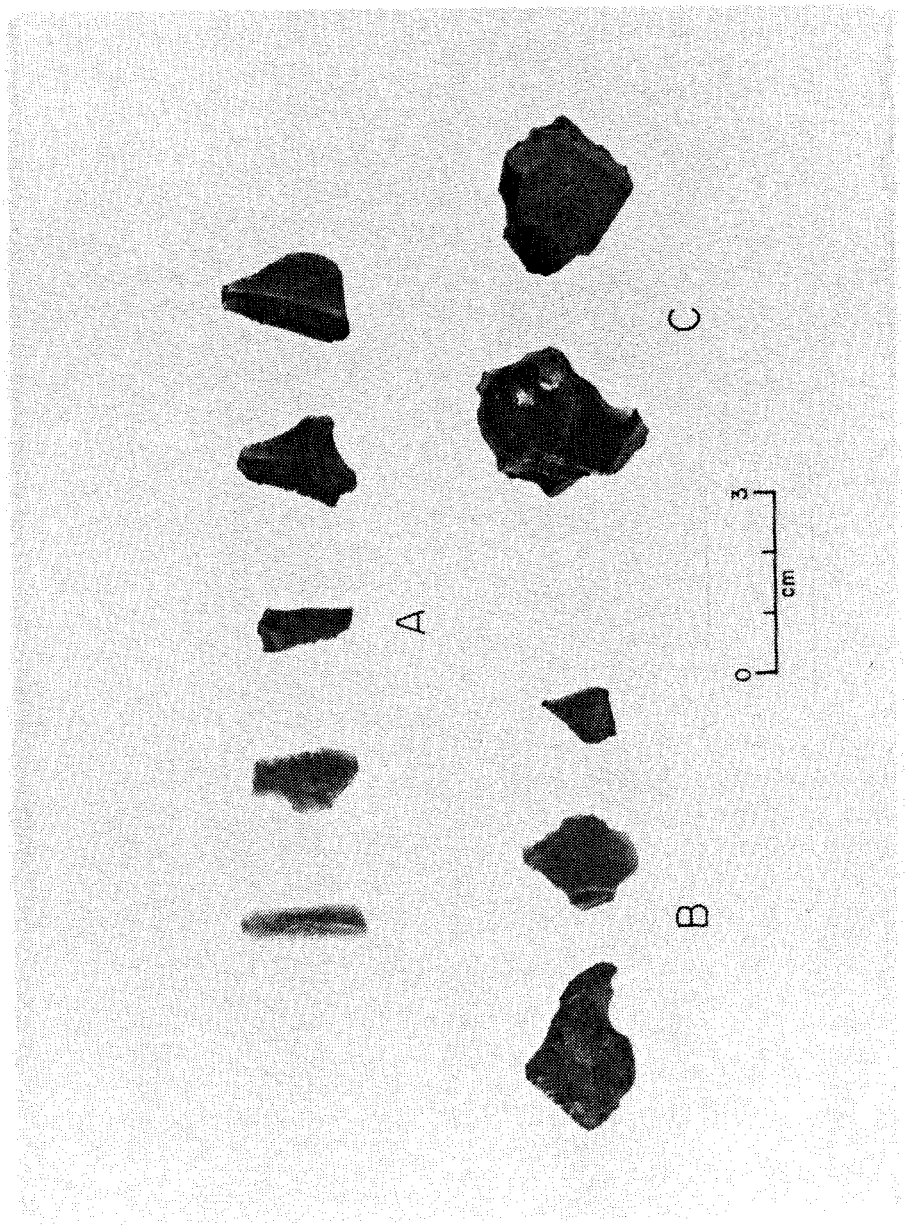


Figure 17. Small Tools. A-Retouched Flakes, B-Gravers, C-Scrapers.

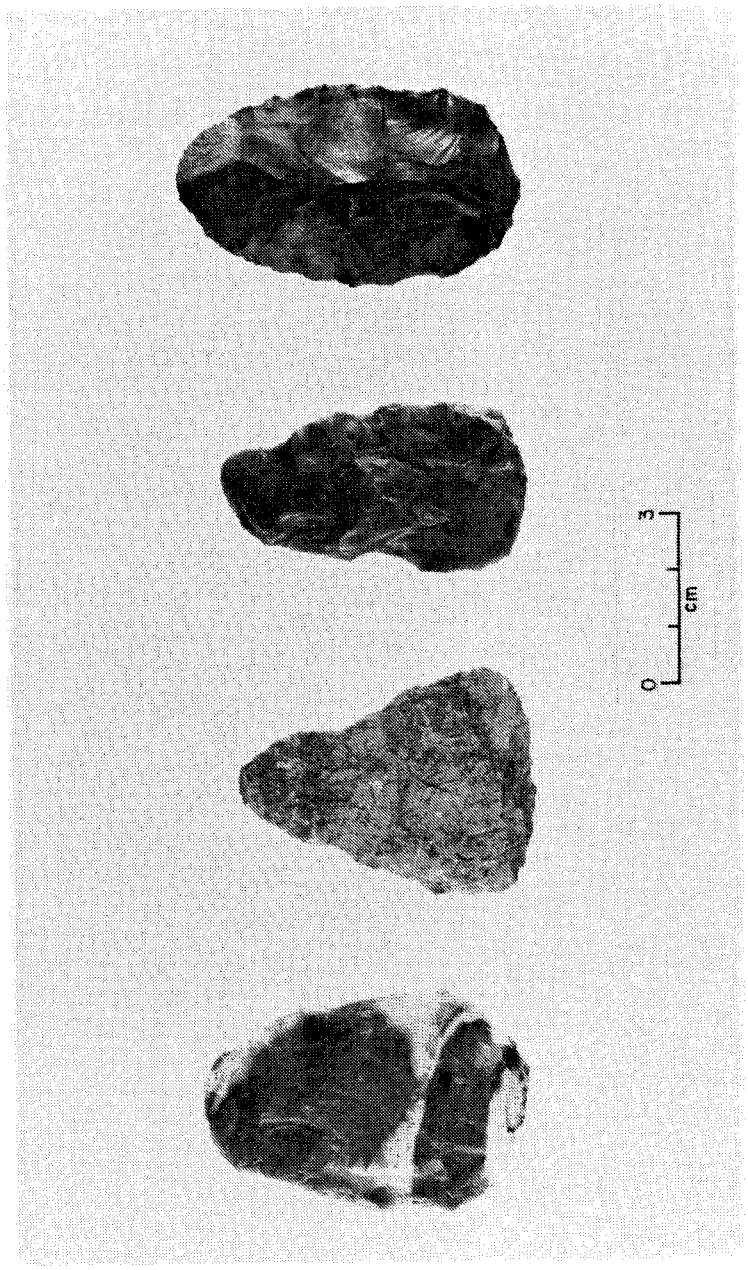


Figure 18. Late Stage Bifaces. From Subsoil A-2, Kirk Horizon.

blade shape, blade cross section, base shape, stem maximum thickness, stem length, stem width (neck), stem width (base), and weight in grams.

Early Archaic. Early Archaic occupation of the Forbus site is documented by the presence of five PPKs. Four were identified as Kirk cluster. A fragmentary base of a Kirk cluster (Decatur type) PPK was identified by the burinated base. Two points were identified as Kirk Corner-Notched (Figure 19E) One other point was identified only as Kirk cluster (Figure 19D). This point was a medium-sized and corner-notched PPK. The blade edge showed evidence of resharpening and was serrated. The base was concave and ground. This specimen possibly represents an unburinated Decatur or a local stylistic variation of a Kirk Corner-Notched point. A similar point was observed in a local collection. One indeterminate Early Archaic PPK was recovered (Figure 19A). This PPK was straight stemmed with a triangular blade. The blade was beveled and serrated.

Late Archaic. One PPK diagnostic of the Late Archaic period was recovered (Figure 19C). This specimen was a Ledbetter cluster (Iddins type) PPK. This type is a medium-sized PPK with a triangular blade, straight stem, and an unfinished base. One indeterminate Archaic PPK was recovered from excavation (Figure 19B) and one from surface collection.

Middle Woodland. One PPK of the Lanceolate Expanding Stem cluster (Swan Lake type) representing a Middle Woodland occupation was recovered (Figure 20B). This is a small point with parallel sides and very shallow side-notching. One indeterminate Woodland PPK was recovered (Figure 20C).

Mississippian. Six points of the Small Triangular cluster were recovered (Figure 20A). These are small triangular arrow points with straight sides and base that are associated with a Mississippian occupation. All six specimens exhibit distal impact fractures.

NON-CHERT LITHICS

A total of 663 (89,616.1 g) pieces of non-chert debris and one non-chert tool was recovered. This debris consists of burnt and unburnt sandstone, limestone, quartzite, hematite, and an indeterminate lithic. The tool is a quartzite hammerstone recovered from Level 1 of Unit 1005 N, 1009 E.

RESULTS

The excavation of 25 1 m x 1 m units and probe testing yielded 5,924 (7,471.4 g) pieces of modified chert debris and 84 (683.7 g) lithic tools.

The Forbus site lithic assemblage is dominated by St. Louis chert (Tables 7 and 8). This raw material is represented by 48.5% of the debris and 52.4% of the tools.

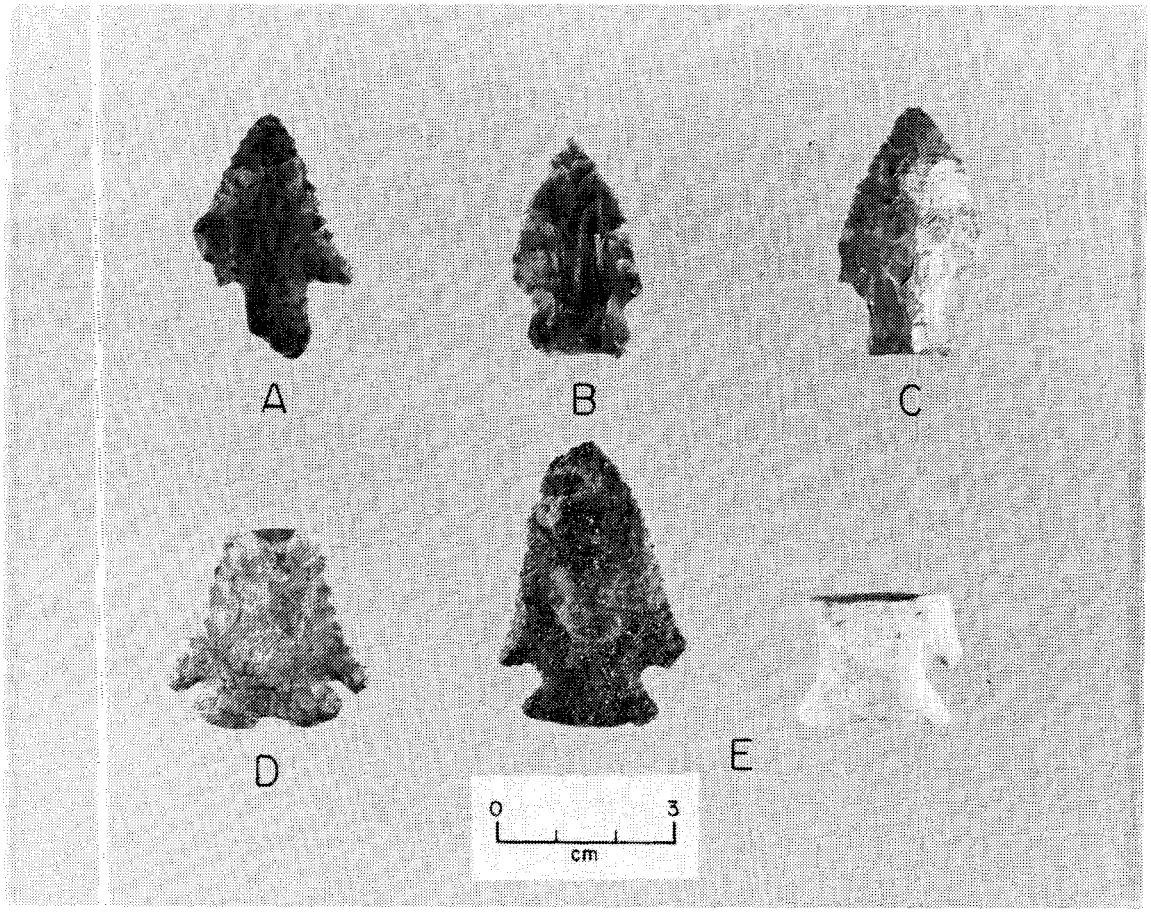


Figure 19. Archaic Projectile Points/Knives. A-Early Archaic Indeterminate, B-Archaic Indeterminate, C-Iddins, D-Kirk Cluster, E-Kirk Corner-Notched.

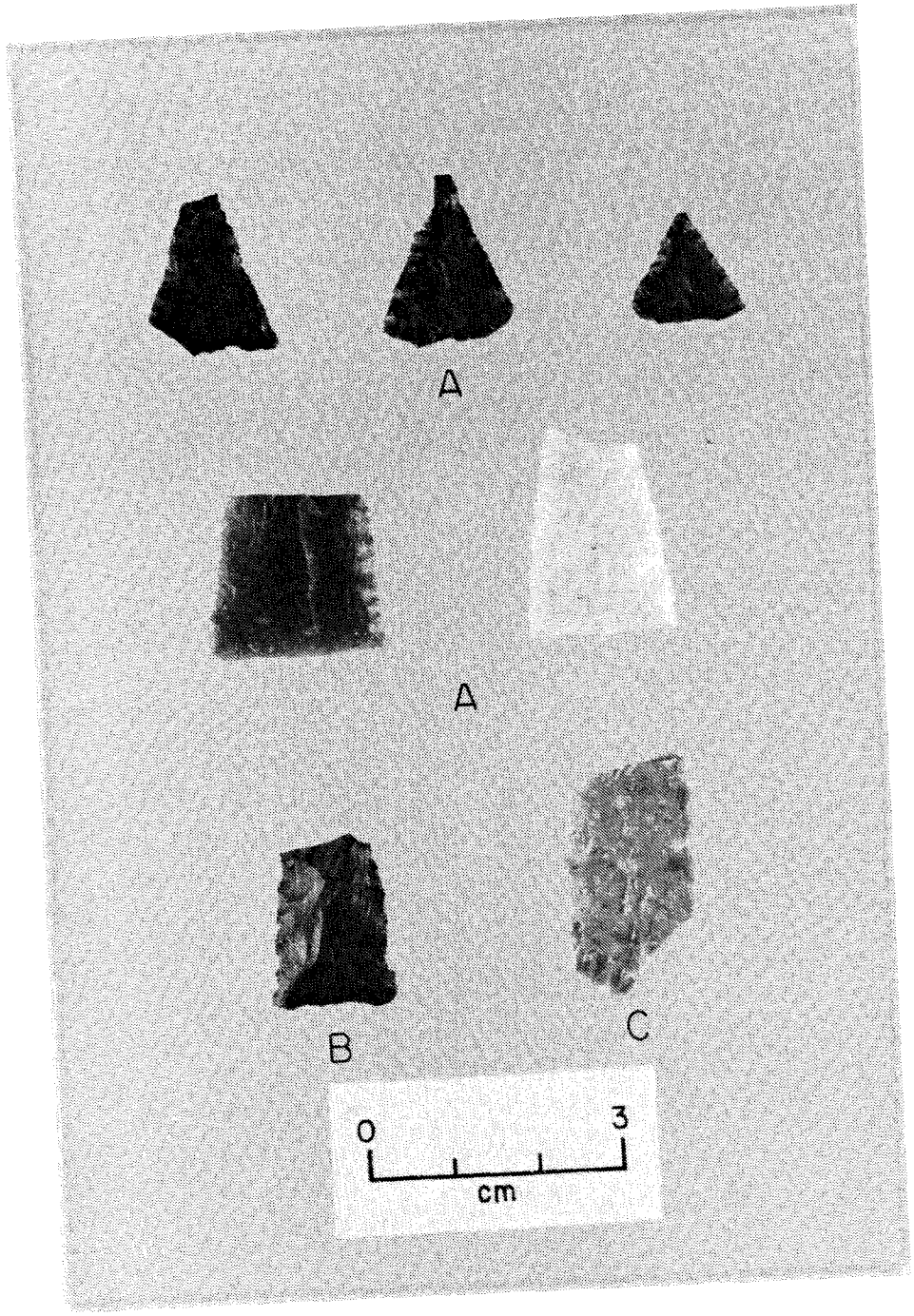


Figure 20. Woodland and Mississippian Points. A-Small Triangular Cluster, B-Swan Lake, C-Woodland Indeterminate.

Fort Payne chert is represented in 15.9% of the debris and 28.6% of the tools. Indeterminate local cherts made up 30.3% of the debris and 9.5% of the tools. Monteagle chert, chalcedony, agate, quartz, and quartzite combined represent only 5.3% of the debris and 9.5% of the tools.

All stages of reduction are well represented in the assemblage. Flakes with cortex (primary and secondary decortication flakes and broken flakes with cortex) are represented by 751 specimens. Non-cortical flakes include 3,047 tertiary and broken flakes without cortex, 455 biface thinning and broken flakes (PRB, lipped), and 333 retouch flakes. Blocky debris is represented by 606 specimens. Of the total of 4,586 flakes, 16.4% have cortex present and 83.6 % have no cortex.

Thermal alteration was not an important part of reduction strategies at the Forbus site (Table 4). Only a small percent (8.0%) of debris showed evidence of thermal alteration. The majority of these specimens (79.5%) show evidence of heating after final modification (i.e., pot lidding or crazing) and probably represent post-depositional activities at the site. Twenty (0.3%) pieces of debris show definite evidence of heating prior to final modification.

Table 7. Debris by Material Type.

Debris Type		Material Type: St. Louis	Ft. Payne	Monteagle	Chalcedony	Agate	Indeterminate Local	Quartz
Complete Flakes								
Primary		49	8		1	1	78	1
Secondary		171	72	1	15	5	124	
Tertiary		778	253	38	86	6	429	6
Biface Thinning		203	110	6	5		62	
Retouch		208	40	8	8	3	66	
Blade			2					
Bipolar		4					1	
Subtotal		1,413	485	53	115	15	760	7
Total Complete Flakes:	2,848							
Broken Flakes								
Proximal, Lipped		27	25		1		16	
Proximal, Full Cortex		4	1				2	
Proximal, Partial Cortex		17	14	1	1		21	
Proximal, No Cortex		82	30	2	11	1	67	
Distal, Full Cortex		21	13				6	
Distal, Partial Cortex		55	28		7	1	33	
Distal, No Cortex		592	257	21	42	1	345	
Subtotal		798	368	24	62	3	490	0
Total Broken Flakes:	1,745							
Non-Flake Debris								
Blocky Debris		254	67		25	5	255	
Tested Cobble		10	4		3		13	
Core/Core Fragment		7	2				6	
Bipolar Core		6						
Bipolar Debris		3					3	
Spalls		48	14				107	
Subtotal		328	87	0	28	5	384	0
Total Non-Flake Debris:	832							
Debris Less Than 3.1 mm		336					163	0
Unmodified Chert Debris		27	8		15		431	19
Site Total		2,875	940	77	205	23	1,797	7

Table 8. Tools by Material Type.

Tool Type	Material Type				
	Ft. Payne	St. Louis	Monteagle	Chalcedony	Indeterminate Local
Flake Tools					
Utilized Flake		6			
Retouched Flake	5	12	1		
Graver	1	2			1
Spokeshave		1			
Subtotal	6	21	1	0	1
Bifacial Tools					
Biface Fragment	4	2			1
Initial Stage Biface		5		1	
Intermediate Stage Biface	2	1	1		1
Late Stage Biface	1	1			
PPK	6	4		2	4
PPK Fragment	2	4		2	1
Scraper	1	3			
Drill	1				
Indeterminent Bifacial Tool	1	3	1		
Subtotal	18	23	2	5	7

Table 8. continued.

Tool Type	Material Type				
	Ft. Payne	St. Louis	Monteagle	Chalcedony	Indeterminate Local
Site Total [a]	24	44	3	5	8

[a]Does not include a quartzite hammerstone.

CHAPTER IX

PREHISTORIC CERAMICS

Charles Bentz, Jr.

The prehistoric ceramics from the Forbus site were classified and quantified by the tempering agent and surface treatment. Temper characteristics and sherd thicknesses were recorded. 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.

Ten (19.2 g) plain shell tempered Mississippian sherds, including a rim sherd, were recovered from Level 2 of Subsoil A-1 in Unit 1014 N, 1008 E. During excavation three sherds were probably fragmented into the ten sherds analyzed. The rim has an indeterminate form and the lip is flattened and thickened on the exterior surface. In cross-section the sherds exhibit a moderate amount of platy casts of the temper particles. The sherd thicknesses range from 5-7 mm. The exterior sherd surfaces are brown, reddish-brown, and reddish-yellow in color. The interior sherd surfaces are red, reddish-brown, and reddish-yellow and the sherd cores are reddish-yellow, yellowish-red, and dark gray in color.

Small Triangular cluster Mississippian arrowpoints (n=6) were recovered from Subsoil A-1 and the overlying Humus in four units adjacent and in close proximity to the unit containing shell tempered ceramics. Two rock clusters (Features 1 and 9) and one rock concentration (Feature 3) are also associated with the Mississippian occupation of the Forbus site.

CHAPTER X

PLANT REMAINS

Gary D. Crites

The light fractions recovered from 77 flotation samples representing 11 excavation units and one feature were identified and quantified at The University of Tennessee Ethnobotany Laboratory. No radiocarbon dates are available. A total of 768 liters of soil matrix was floated, yielding 94.48 g of laboratory processed material. Only 3.53 g of wood charcoal and 1.96 g of nutshell were recovered. Residue comprised 94.2%of the material recovered from flotation samples. Virtually every light fraction consisted primarily of dried tangled masses of modern rootlets and other modern contaminants. A substantial amount of time was required to separate tiny charcoal flecks and nutshell fragments from these tightly compressed masses.

LABORATORY METHODS

Flotation samples were subjected to a standardized procedure for processing (Crites 1987; Kline et al. 1982). Each sample was placed in a nested series of geologic screens (2 mm, 1 mm, and 500 mm) underlain by a catch basin. This procedure yielded three fragment size classes: >2 mm, 2 mm-1 mm, and < 1 mm. Materials were examined using a Bausch and Lomb Stereozoom 7 binocular microscope with magnification ranging from 10x to 70x.

All carbonized plant materials retained in the 2 mm screen were sorted into specific categories such as nuts and wood charcoal. The weights and numbers of fragments were recorded (Table 9). Carbonized plant remains retained in the 1 mm and 500 mm screens and catch basin were scanned for seeds, fruit fragments, etc. Nutshell and wood charcoal in the <2 mm fraction were noted on lab sheets, if present, but were not counted or weighed. The material in the <2 mm size fraction was weighed as a single sample constituent--residue. Virtually all of the sample residue consisted of modern organic contamination, "dust", and a few charcoal flecks. One hundred percent of the light fractions were processed. When enough wood charcoal fragments were present in the 2 mm screen, 20 fragments were identified as to specific taxonomic level if possible. Due to small fragment size and/or poor preservation of anatomical landmarks, few samples yielded enough wood fragments for 20 identifications in any particular unit level sample (Table 10).

DISCUSSION

Efforts to infer structure or pattern in prehistoric plant use are affected by a multiplicity of cultural and natural factors. Patterning begins with people's beliefs and

Table 9. Plant Remains.

Provenience	Sample Size liters	Sample Weight g	Wood g	Wood n	Nuts g	Nuts n	Residue g
1002 N, 1007 E							
Level 1, Humus[a]	10	9.94	0.18	11			9.76
Level 2, A-1	10	3.93	0.66	76			3.27
Level 3, A-1	10	2.28	0.14	18			2.14
Level 4, A-1	10	2.61	0.04	3	0.01	1	2.56
Level 5, A-2	10	0.87	0.01	2			0.86
Level 6, A-2	10	1.69					1.69
Level 7, A-2	10	0.74					0.74
Level 8, A-2	10	1.07	0.06	1	0.06	7	0.95
Level 9, A-2	10	1.04	0.01	1	0.05	5	0.98
Level 10, A-2	10	0.47					0.47
Unit Total	100	24.64	1.10	112	0.12	13	23.42
1005 N, 1009 E							
Level 1, Humus	10	2.14	0.09	6			2.05
Level 2, A-1	10	1.90					1.90
Level 3, A-1	10						
Level 4, A-1	10						
Level 5, A-1	10	0.85					0.85
Level 6, A-2	10	0.87					0.87
Level 7, A-2	10	0.89					0.89
Level 8, A-2	10						
Level 9, A-2	10	0.58			0.01	1	0.57
Level 9, A-2	10	1.34					1.34
Unit Total	100	8.57	0.09	6	0.01	1	8.47
1008 N, 1012 E							
Level 2, A-1	10	0.61	0.08	6			0.53
Level 3, A-1	10	2.22	0.11	12			2.11
Level 4, A-1	10	1.26	0.22	12			1.04
Level 6, A-2	10	0.73					0.73
Level 7, A-2	10	0.35	0.01	1			0.34
Level 8, A-2	10	0.63					0.63
Level 9, A-2	10	0.60	0.02	3			0.58
Unit Total	70	6.40	0.44	34			5.96
1010 N, 1009 E							
Level 1, Humus	10						
Level 2, A-1	10	3.09	0.07	7			3.02
Level 3, A-1	10	2.79	0.13	9			2.66
Level 4, A-1	10						
Level 5, A-1	10						
Level 6, A-2	10	1.31	0.02	2			1.29
Level 7, A-2	10	1.17					1.17
Level 8, A-2	10	2.08					2.08
Unit Total	80	10.44	0.22	18			10.22
1010 N, 1011 E							
Level 1, Humus	10						
Level 2, A-1	10	2.01	0.02	2	0.02	1	1.97
Level 3, A-1	10						
Level 5, A-1	10	0.96					0.96
Level 6, A-2	10	0.21					0.21
Level 7, A-2	10	0.61					0.61
Level 8, A-2	10	0.13					0.13
Unit Total	70	3.92	0.02	2	0.02	1	3.88

Table 9. continued.

Provenience	Sample Size liters	Sample Weight g	Wood g	Wood n	Nuts g	Nuts n	Residue g
1010 N, 1013 E							
Level 1, Humus[a]	10	0.04					0.04
Level 2, A-1	10	1.79	0.02	2			1.77
Level 3, A-1	10						
Level 4, A-1	10	0.72					0.72
Level 5, A-1	10	0.90	0.03	1			0.87
Level 6, A-2	10	0.79	0.06	4			0.73
Level 7, A-2	10	1.13			0.31	30	0.82
Level 8, A-2/B	10	0.49			0.04	6	0.45
Unit Total	80	5.86	0.11	7	0.35	36	5.40
1015 N, 1008 E							
Level 4, A-1	10	1.59	0.02	4	0.01	3	1.56
Level 5, A-1	10	0.43	<0.01	1	0.10	2	0.33
Level 6, A-2	10	0.16	0.03	3			0.13
Level 7, A-2	10	0.18					0.18
Level 8, A-2	10	0.35					0.35
Level 9, A-2	10						
Level 10, A-2	10						
Unit Total	70	2.71	0.05	8	0.11	5	2.55
1015 N, 1009 E							
Level 3, A-1	8	4.98	0.13	18	1.26	102	3.59
Level 4, A-2	10	0.67					0.67
Unit Total	18	5.65	0.13	18	1.26	102	4.26
1016 N, 1008 E							
Level 1, Humus	10						
Level 2, A-1	10	4.25	0.34	49	0.08	2	3.83
Level 3, A-1	10	9.46	0.47	37			8.99
Level 4, A-1	10	2.14	0.31	20			1.83
Level 5, A-1	10	0.46					0.46
Unit Total	50	16.31	1.12	106	0.08	2	15.11
1021 N, 1004 E							
Level 1, Humus	10						
Level 2, A-1	10						
Level 3, A-1	10	0.64					0.64
Level 4, A-1	10	0.63					0.63
Unit Total	40	1.27					1.27
1023 N, 1004 E							
Level 1, Humus	10						
Level 2, A-1	10	1.80					1.80
Level 3, A-1	10						
Level 4, A-1	10	0.70					0.70
Level 5, A-2	10	3.72					3.72
Level 6, A-2	10						
Level 7, A-2	10						
Level 8, A-2	10	0.36					0.36
Unit Total	80	6.58					6.58
Feature 3	10	2.13	0.25	13	0.01	1	1.87
Site Total	768	94.48	3.53	324	1.96	161	88.99

[a]Level number, soil stratum.

Table 10. Wood Charcoal.

Provenience	Maple n	Maple %	Hickory n	Hickory %	White Oak Group n	White Oak Group %	Red Oak Group n	Red Oak Group %	Oak n	Oak %	Honey Locust n	Honey Locust %	Eastern Red Cedar n	Eastern Red Cedar %	Ash n	Ash %	Sweetgum n	Sweetgum %	Black Willow n	Black Willow %	Ring Porous n	Ring Porous %	Unidentified n	Unidentified %	Total
1002 N, 1007 E																									
Level 1, Humus[a]											11	100.0													11
Level 2, A-1	1	5.0	2	10.0	13	65.0			4	20.0															20
Level 3, A-1					3	16.7			4	22.2	4	22.2									7	38.9			18
Level 4, A-1											2	66.7									1	33.3			3
Level 5, A-2																							2	100.0	2
Level 8, A-2																					1	100.0			1
Level 9, A-2																					1	100.0			1
Unit Total	1	1.8	2	3.6	16	28.6			8	14.3	17	30.4									10	17.9	2	3.6	56
1005 N, 1009 E																									
Level 1, Humus									3	50.0											3	50.0			6
1008 N, 1012 E																									
Level 2, A-1							2	33.3	1	16.7											3	50.0			6
Level 3, A-1							1	8.3	2	16.7			3	25.0							2	16.7	4	33.3	12
Level 4, A-1			1	8.3			2	16.7	4	33.3	3	25.0									2	16.7			12
Level 7, A-2																							1	100.0	1
Level 9, A-2									1	33.3											2	66.7			3
Unit Total			1	2.9			5	14.7	8	23.5	3	8.8	3	8.8							9	26.5	5	14.7	34
1010 N, 1009 E																									
Level 2, A-1	6	85.7																					1	14.3	7
Level 3, A-1									3	33.3			2	22.2							4	44.4			9
Level 6, A-2																					1	50.0	1	50.0	2
Unit Total	6	33.3							3	16.7			2	11.1							5	27.8	2	11.1	18
1010 N, 1011 E																									
Level 2, A-1									1	50.0											1	50.0			2
1010 N, 1013 E																									
Level 2, A-1															1	50.0					1	50.0			2
Level 5, A-1			1	100.0																					1
Level 6, A-2			2	50.0																	2	50.0			4
Unit Total			3	42.9											1	14.3					3	42.9			7

Table 10. continued.

Provenience	Maple n	Maple %	Hickory n	Hickory %	White Oak Group n	White Oak Group %	Red Oak Group n	Red Oak Group %	Oak n	Oak %	Honey Locust n	Honey Locust %	Eastern Red Cedar n	Eastern Red Cedar %	Ash n	Ash %	Sweetgum n	Sweetgum %	Black Willow n	Black Willow %	Ring Porous n	Ring Porous %	Unidentified n	Unidentified %	Total
1015 N, 1008 E																									
Level 4, A-1	1	25.0																			3	75.0			4
Level 5, A-1																							1	100.0	1
Level 6, A-2																					3	100.0			3
Unit Total	1	12.5																			6	75.0	1	12.5	8
1015 N, 1009 E																									
Level 3, A-1																					18	100.0			18
1016 N, 1008 E																									
Level 2, A-1	2	10.0					11	55.0	4	20.0							1	5.0	2	10.0					20
Level 3, A-1	6	30.0	8	40.0			4	20.0	2	10.0															20
Level 4, A-1	2	10.0	3	15.0					4	20.0	4	20.0									7	35.0			20
Unit Total	10	16.7	11	18.3			15	25.0	10	16.7	4	6.7					1	1.7	2	3.3	7	11.7			60
Feature 3	4	30.8					4	30.8							1	7.7					3	23.1	1	7.7	13

*Level number, soil stratum.

the impact of the beliefs on their interaction with plants (Ford 1979:320-323). Consequently, patterning in the paleoethnobotanical assemblage will vary in concert with culturally prescribed patterns of plant collection, processing, storage, use, and disposal. Other factors directly influencing the assemblage include differential presentability, carbonization environment, post-depositional biogeochemical processes, and sample recovery and processing.

Raw data (counts and weights) are presented in Table 9. In an effort to ameliorate, or at least accommodate, the impact of differential preservation and/or use contexts, an effort to standardize the data is called for. Ubiquity measurements and density and comparison ratios are used here (Table 11).

Ubiquity measurements are an attempt to accommodate problems resulting from differential preservation by looking at the number of samples containing a material or taxon within a group of samples. Ubiquity measurements are comparative and not absolute. They are appropriate for inferring relative importance/use.

Ratios are another means of standardizing data. Ratios are appropriate for 40FN122 because of the necessity of dealing with different categories of plant remains that are considered generally equivalent ecologically and/or in terms of deposition and preservation characteristics. Density ratios yield abundance values that allow comparisons of count or weight of a specific plant category per volume of floated matrix. This procedure facilitates evaluation of assumptions of uniform deposition, preservation, and recovery rates.

Comparison ratios can be used to assess different use or preservation contexts. On sites such as 40FN122, where wood charcoals represent domestic fuel use rather than "special" burning episodes (e.g. burning of structures), using wood charcoal as the denominator in a nut:wood charcoal ratio aids in controlling for differential use or preservation (Miller 1988:75).

RESULTS

The only potential plant food represented at 40FN122 was nutshell. With only one exception, all nutshell remains represent thick-shelled hickory (i.e., mockernut and pignut). Subsoil A in Unit 1015 N, 1009 E yielded two acorn shell fragments (<0.01 g), 89 hickory shell fragments(1.20 g), and 11 fragments of Juglandaceae shell (0.06 g). Juglandaceae shell fragments represent either hickory or walnut. The fragments were too small to assign genus designation with confidence.

Table 11 presents density ratios for wood charcoal and nutshell and ubiquity levels. The low density of wood charcoal and nutshell at the site is almost remarkable. Only in the Subsoil A sample from Unit 1015 N, 1009 E is nutshell density by count more than minimal (density= 5.666/liter). This is also the only sample to yield more than one genus of nut remains. The only sample to yield a wood charcoal density ratio by count that is more than minimal is the Subsoil A-1 sample from Unit 1016 N, 1008 E.

Table 11. Density Ratios for Wood Charcoal and Nutshell by Unit.

Unit	Material	Raw Data		Density		Ubiquity
		g	n	g/l[a]	n/l[b]	
1002 N, 1007 E	Wood Charcoal	1.10	112	0.0122	1.244	77.8
	Nutshell	0.12	13	0.0013	0.144	77.8
1005 N, 1009 E	Wood Charcoal	0.09	6	0.0009	0.060	10.0
	Nutshell	0.01	1	0.0001	0.010	10.0
1008 N, 1012 E	Wood Charcoal	0.44	34	0.0063	0.340	71.4
	Nutshell	-	-	-	-	-
1010 N, 1009 E	Wood Charcoal	0.22	18	0.0027	0.225	37.5
	Nutshell	-	-	-	-	-
1010 N, 1011 E	Wood Charcoal	0.02	2	0.0003	0.029	14.3
	Nutshell	0.02	1	0.0003	0.014	14.3
1010 N, 1013 E	Wood Charcoal	0.11	7	0.0014	0.087	37.5
	Nutshell	0.35	36	0.0044	0.450	25.0
1015 N, 1008 E	Wood Charcoal	0.05	8	0.0007	0.114	42.9
	Nutshell	0.11	5	0.0016	0.071	28.6
1015 N, 1009 E	Wood Charcoal	0.13	18	0.0072	1.000	50.0
	Nutshell	1.26	102	0.0700	5.666	50.0
1016 N, 1008 E	Wood Charcoal	1.12	106	0.0224	2.120	60.0
	Nutshell	0.08	2	0.0016	0.040	20.0
1021 N, 1004 E	Wood Charcoal	-	-	-	-	-
	Nutshell	-	-	-	-	-
1023 N, 1004 E	Wood Charcoal	-	-	-	-	-
	Nutshell	-	-	-	-	-
Feature 3	Wood Charcoal	0.25	13	0.0250	1.300	100.0
	Nutshell	0.01	1	0.0010	0.100	100.0
Site Total	Wood Charcoal	3.53	324	0.0046	0.0025	
	Nutshell	1.96	161	0.4219	0.2096	

[a]Grams per liter of fill.
[b]Number of pieces per liter of fill.

This sample also yielded the highest density of wood charcoal by weight. Even ubiquity measurements for wood charcoal and nuts are generally low for each excavation unit at the site. The comparison ratio of nut weight to wood charcoal weight is highest for Unit 1015 N, 1009 E (Table 12). However, the ratio of nutshell to wood charcoal for the site is, overall, minimal. Considering the greater density, in terms of weight, of hickory shell to carbonized wood fragments, the information in Tables 9-11 suggest either: 1) an incidental use of nuts (or any other plant food) at the site, 2) intermittent use of the site locus over a period of time by small groups who made minimal use of local plant resources, or 3) sampling deficiency. Considering the size of flotation samples and the systematic recovery strategy, sampling is not considered a primary contributor to the sample composition. The most likely scenario is intermittent use of the site locus by small groups who spent a very limited period of time there; quite probably transient hunting-gathering (family) bands. The primary purpose for use of the site does not appear to have been one that necessitated extended stays requiring even moderately intensive collection, processing, use, and discard of plant materials.

Additional support for interpreting the plant remains as representing the remains of intermittent transient groups comes from the wood charcoal. The most ubiquitous and strongly represented tree types were oaks, hickories, maple, and honey locust. There is no evidence in the wood charcoal to suggest forest clearing/opening resulting from anthropogenic processes.

Table 12. Comparison Ratios by Excavation Unit.

	Nuts g	Wood Charcoal g	Nuts:Wood Charcoal
1002 N, 1007 E	0.12	1.10	0.1091
1005 N, 1009 E	0.01	0.09	0.1111
1010 N, 1011 E	0.02	0.02	1.000
1010 N, 1013 E	0.35	0.11	3.182
1015 N, 1008 E	0.11	0.05	2.200
1015 N, 1009 E	1.26	0.13	9.692
1016 N, 1008 E	0.08	1.12	0.0714
Feature 3	0.01	0.25	0.0400
Site Total	1.96	2.87	0.6829

CHAPTER XI

PREHISTORIC OCCUPATION OF THE FORBUS SITE

Andrew P. Bradbury

Material from excavated contexts was recovered from three of the four soil strata (Humus, Subsoil A-1, and Subsoil A-2). Diagnostic artifacts recovered within these strata were used to identify the periods of occupation. The analysis of material from each of the soil strata was used in interpreting the site function(s) during each occupation and changes in lithic strategies over time (Table 13).

Material in the Humus and upper Subsoil A-1 is the result of a Mississippian period occupation. The lower levels of Subsoil A-1 contain Late Archaic to Middle Woodland cultural remains. The material from this stratum cannot be assigned to any specific period. An Early Archaic (Kirk) occupation is associated with Subsoil A-2.

EARLY ARCHAIC

The Early Archaic occupation of the site is represented by material in Subsoil A-2. The ridge at the southeast edge of the right-of-way was the main area of Early Archaic habitation. A total of 1,860 pieces of debris and 25 tools are associated with this occupation. A summary of debris is in Table 14. Tool types include five PPKs/PPK fragments, 11 bifaces/biface fragments, four retouched flakes, two utilized flakes, two gravers, and one spokeshave. Diagnostic PPKs are in the Kirk cluster. One rock concentration (Feature 2) and one rock cluster (Feature 11) were determined to be Early Archaic.

Lithic artifacts indicate that activities during the Early Archaic included hunting/butchering, hide working, wood working, and tool maintenance/manufacture.

All stages of reduction are well represented in the Early Archaic lithic assemblage. Flakes with cortex (primary and secondary decortication flakes and broken flakes with cortex) are represented by 264 specimens. Non-cortical flakes include 1,013 tertiary and broken flakes without cortex, 154 biface thinning and broken lipped flakes, and 102 retouch flakes. This debris is the result of tool maintenance/manufacturing activities.

During the Early Archaic period, the Forbus site served as the location of a small specialized camp(s). Small groups of people used the site for short periods of time. Plants, including plant foods, were not an important part of the site activities. Hunting/butchering and tool maintenance/manufacture were the major site activities. Minor activities included hide and wood working. This would fit in with the settlement

Table 13. Debris Type by Cultural Association.

Debris Type	Cultural Association		
	Early Archaic	Late Archaic to Middle Woodland	Missis-sippian
Less Than 3.1 mm	160[a]	278	149
Primary Flake	66	29	34
Secondary Flake	123	111	131
Tertiary Flake	502	510	557
Biface Thinning	134	96	145
Blade	0	1	2
Bipolar Flake	0	2	2
Spall	49	58	67
Retouch Flake	102	100	115
Broken, Lipped	20	22	26
Broken, PRB Full Cortex	1	3	3
Broken, PRB Partial Cortex	12	18	23
Broken, PRB No Cortex	38	65	77
Broken, Distal Full Cortex	20	6	14
Broken, Distal Partial Cortex	42	38	39
Broken, Distal No Cortex	473	369	399
Core/Core Fragment	3	5	5
Tested Cobble	2	11	17
Blocky Debris	112	191	268
Bipolar Core	1	1	4
Bipolar Debris	0	4	2
Total[b]	1,860	1,918	2,079

Total All Debris = 5,857

[a]Number of pieces.
[b]Includes only material from the ridge associated with each cultural period.

model that Chapman (1975) proposed for the Early Archaic period in East Tennessee. Large base camps would be located in alluvial bottoms with smaller specialized camps in the adjoining uplands.

LATE ARCHAIC, MIDDLE WOODLAND

Between Early Archaic and Mississippian times, the site was probably utilized as a small hunting camp. During this period, occupation of the site area occurred at least in the Late Archaic and Middle Woodland periods.

MISSISSIPPIAN

The Mississippian occupation of the site is represented by material in the Humus and the first level of Subsoil A-1 in excavation units on the slight ridge. In addition, the second level in Subsoil A-1 of Unit 1010 N, 1011 E contained Mississippian cultural remains. A total of 2,079 pieces of chert debris, 24 tools, and 10 shell tempered sherds are associated with this occupation. A summary of debris types is in Table 13. Tools consist of nine PPKs/PPK fragments, five bifaces/biface fragments, seven retouched flakes, two gravers, and a quartz hammerstone. Diagnostic PPKs are in the Small Triangular cluster. Two rock clusters (Features 1 and 9) and one rock concentration (Feature 3) were also determined to be Mississippian.

Lithic artifacts indicate activities during the Mississippian occupation included hunting/butchering and tool maintenance/manufacture. Few tool types were recovered. These tools, with the exception of the hammerstone and two gravers, are associated with hunting/butchering activities. All the recovered points have wear common on projectiles (e.g., distal impact fractures). These points were probably discarded at the site and new ones manufactured.

All stages of chert reduction are well represented in the Mississippian lithic assemblage. Flakes with cortex (primary and secondary decortication flakes and broken flakes with cortex) are represented by 244 specimens. Non-cortical flakes include 1,033 tertiary and broken flakes without cortex, 171 biface thinning and broken lipped flakes, and 115 retouch flakes. This debris is the result of tool maintenance/manufacturing activities.

The use of the Forbus site during Mississippian times was ephemeral. The lack of pit features, middens, structures, and the few sherds suggest a short term occupation(s) by a few individuals. Plants, including plant foods, were not extensively utilized by the site inhabitants. Recovered remains indicate hunting/butchering and tool maintenance/manufacturing were the dominant site activities. Similar sites have been reported in the Cumberland Plateau (Ferguson et al. 1986; Wilson and Finch 1980) and Highland Rim (Faulkner and McCollough 1974) for this period.

SUMMARY

The Forbus site was located in an area of abundant resources. Both the Cumberland Plateau and the Eastern Highland Rim were in close proximity to the site and could be easily utilized by prehistoric groups in the area. Two main occupations of the site occurred during the Early Archaic and Mississippian. Between these periods only scarce occupation of the site occurred. Occupation of the site was for specialized activities by small groups of people.

CHAPTER XII

HISTORIC OCCUPATION OF THE FORBUS SITE

Charles H. Faulkner

The Forbus community was settled by Euro-American families from North Carolina, Virginia, Pennsylvania, and Kentucky in the third and fourth decades of the nineteenth century. One of the earliest settlers at this crossroads on the Caney Fork of the Wolf River was John Clemens, the father of Mark Twain (Samuel Clemens), who opened a store and post office which he called "Pall Mall" after a town in England (Hogue 1950:1, 15-16).

The Clemens' store was the center of a community which boasted of a church, a school, and several mills. When Clemens sold his store in 1835 and moved to Missouri, the name of the community was changed and eventually became known as Forbus. Not only the name of the community changed; by the end of the nineteenth century the thriving town of Clemens' day had almost disappeared from the maps of Fentress County.

The Forbus community was revitalized as a commercial center in 1892 when William Marion Johnson opened a large general store on the Clemens' land at the present day intersection of State Route 28 and Caney Creek Road (Tennessee Department of Transportation 1989:10; personal communication with Julius Johnson, April 6, 1990). Johnson built a house on a hill near his store in 1896 and about the turn of the century he constructed a cattle weighing barn and a blacksmith shop across State Route 28 from the store (Figures 21 and 22). It is these latter two buildings that are closest to the excavated area of the Forbus site.

The one story weighing barn is of frame construction with vertical board siding and a gable roof covered with rolled asphalt (Figure 23). This building was last used for weighing animals about 12 years ago. It was used for storing farm equipment until recently but will be destroyed by the road relocation.

The blacksmith shop is a small one story frame structure with vertical board siding and a rolled asphalt gable roof (Figure 24). A window is on the gable end and a brick chimney extends from the center of the ridge line (Tennessee Department of Transportation 1989:12). The blacksmithing activities in and around this shop were described to the author by Julius Johnson, the grandson of the founder of the Johnson store. The shoeing of horses was a major activity in the shop and horseshoeing was still done here as late as the mid-1950s. In addition to this service to local residents, a gunsmith named Wes Goodman was also located in the shop at one time to make and repair firearms. The major activity here, however, seems to have been the repair and maintenance of farm machinery. Apparently a great deal of the work on this machinery was

Figure 21. Cattle Weighing Barn and Blacksmith Shop. Looking East Across the Site.

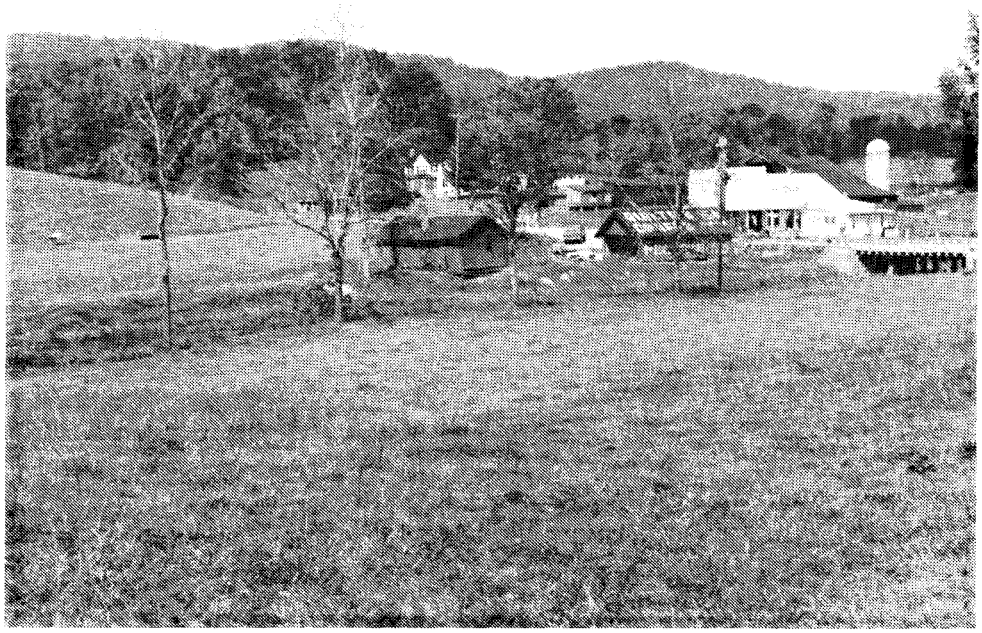


Figure 22. Cattle Weighing Barn, Blacksmith Shop, Forbus General Store, and Manager's House. Looking West Across the Site.

Figure 23. Cattle Weighing Barn.

Figure 24. Blacksmith Shop.

done outside the shop between this building and the weighing barn. Farm sleds, animal feeders, and other farm equipment were also built in this open area. The blacksmith shop was last used by the late Fred Miles Johnson, Julius' father, about 10 years ago.

In addition to the two buildings presently standing on the site, a third structure once stood near the highway and on the bank of the small branch on the west edge of the site. These buildings formed a triangle with the blacksmith shop at the apex. Julius Johnson described this structure as a one story grain storage shed of frame construction, ca. 3.0 m high to the eaves. A large double door or sliding door faced the weighing barn and the building also had large windows measuring ca. 1.0 m x 1.8 m. The roof was covered with tin. The interior of this building consisted of one large room sectioned off into bins where wheat and corn were stored. This shed was struck and destroyed by a tractor-trailer ca. 1953.

The area between the barn and shop is presently used as a picnic area with two picnic tables sitting on the site. Public access is gained from a gravel parking area to the northwest of the cattle weighing barn along State Route 28.

HISTORIC ARTIFACTS

A total of 1,065 historic artifacts was found at the Forbus site. This total does not include coal and cinders which were found in most of the units. The artifacts were placed into the group, class, and type categories that generally follow the scheme of South (1977). South's scheme, however, has been modified to create three new groups which are especially relevant for the cultural remains on this site. Artifacts such as soft drink and beer bottles that are normally placed in South's Kitchen Group have been placed in a Leisure/Recreation Group. Two new activities groups were created for this site. These are the Automotive and the Blacksmithing groups. All of these new groups are particularly relevant to a twentieth century rural site like Forbus.

Kitchen Group

Artifacts in this group are associated with the preparation, storage, and consumption of food. A total of 431 artifacts was placed into this group. These artifacts include 14 ceramic sherds, six identifiable glass vessels, 381 container glass sherds, 10 glassware sherds, and 20 kitchenware artifacts. The Kitchen Group constitutes 40.5%of the historic artifacts recovered on this site.

Three wares are represented in this assemblage. Whiteware is the most

frequent with nine sherds. There are four stoneware sherds. These include three with Albany slip on the exterior and interior surfaces and one Bristol glazed sherd. One sherd of plain porcelain is embossed. The stoneware sherds date from the late nineteenth-early twentieth century and the other sherds probably date from this same period up to the present. All of the sherds are very fragmentary and the vessel forms cannot be determined.

These sherds were concentrated in the units closest to the parking area. Nine were recovered in Unit 1027 N, 1010 E and one in 1026 N, 1004 E. The concentration of sherds in this area can probably be explained by its proximity to the store across the road or by dumping at the edge of the parking area. The sherds were recovered in Level 4 of Unit 1027 N, 1010 E which indicates the dumping occurred earlier here, perhaps around the turn of the century. Soil coring in the area of 1027 N, 1010 E prior to testing revealed a buried ash deposit (Fill Area 1) which supports the interpretation that this was an earlier dumping site.

The kitchenware artifacts are all from food containers. These include 13 tin can fragments, one opener key from a can, two aluminum pull top can lids, three pieces of aluminum foil, and one tin canning lid. Most of these items were probably used by picnickers on this site or were dumped at the edge of the site.

Identifiable bottles/jars contained both food and medicine. Food bottles include a sherd from a clear container that probably held a condiment. A clear base was either from a bottle or jar. A finish of threaded blue-green glass was probably from a canning jar. Sherds from three clear medicine bottles were recovered and at least two had cork closures. Three probably date from the early twentieth century.

The container sherds are from the bodies of bottles and jars that have no characteristics that identify them as specific vessel forms. While it is likely that most of the amber sherds are from beer bottles, the blue-green from canning jars, and the lime green from soft drink bottles, no minimum number of vessels can be determined from this collection; thus, they are simply counted as container sherds.

Container sherds in order of frequency include 121 clear; 86 amber; 61 blue-green; 28 amethyst; 27 amber, stippled; 23 light green; 11 clear, embossed; eight lime green; six clear, stippled; two amber, embossed; two amber, fluted; two amber, stippled and embossed; two lime green, embossed; one amethyst, embossed; and one light green, enameled.

To determine if the use of glass containers changed over time on the site, the distribution of amethyst, amber, and blue-green glass was plotted. Amethyst glass dates from 1880 to 1915 (Munsey 1970) and would have been in use when the cattle weighing barn and blacksmith shop were in use during the early twentieth century. The amber glass is probably largely from beer bottles and represents generally later and presumably recreation/leisure activities on the site. If

the blue-green glass primarily represents canning jars, these mean food storage and would represent domestic dumping or other storage uses for these jars on the site.

The distribution of these three container glass types is different. The heaviest concentration of amethyst glass is in the units south of the cattle weighing barn, notably in units 1010 N, 1010 E and 1009 N, 1012 E. Twenty sherds (71%) were found in these units. This suggests that early in the historic utilization of this site, beverages and/or food were more frequently consumed around this barn. The amber and blue-green glass on the other hand was more frequent in those units closest to the road and parking area. The highest number of both colors was found in Unit 1027 N, 1010 E and 76 amber sherds (64%) and 29 blue-green sherds (47%) were recovered in the four units closest to the parking area. Beer would have been consumed more frequently in and near the parking area and canning jars may have been associated with the general store directly across the road.

Ten fragments of glassware were found on the site. These include a minimum of four pressed glassware vessels and three tumblers. The tumblers consist of an amethyst vessel dating between 1880-1915, a ribbed bright yellow glass vessel, probably selenium glass dating between 1915-1930 (Munsey 1970), and a clear glass tumbler dating after 1930. The pressed glass sherds are too fragmentary to identify the vessel form.

The glassware is definitely concentrated in the units south of the cattle weighing barn. The densest concentration was in Unit 1010 N, 1013 E where four tumbler sherds were found. It is interesting to note that the concentration of glassware does not correspond to the heaviest concentration of other Kitchen Group artifacts near the parking area and state road and suggests that these items functioned in the barn where beverages were drunk but food was not regularly stored or served.

Recreation/Leisure Group

Thirty-six artifacts have been placed into this group which represents picnicking and other leisure activities. Artifacts in this group are undoubtedly greatly underestimated since most of the glass, especially amber and light green, is probably from beer and soft drink bottles, respectively. However, since other liquids such as medicine and food can also be stored in such colorized glass containers, only those vessels which could be definitely identified as beverage bottles were counted in this group.

Thirteen beverage bottle sherds were identifiable in the collection; these represent a minimum of 11 bottles. These include three beer bottles, two COKE bottles, and six other soft drink bottles. One of these was a light green "blob-top" bottle or Hutchison stopper bottle. The Hutchison stopper was invented in 1872 and was rapidly replaced by the crown cap closure around the turn of the century, the

latter being patented in 1892 (Lorrain 1968:42). This sherd was found in Level 4 of Unit 1027 N, 1010 E. Another was an amethyst glass crown cap bottle that would date no later than 1915. This was found in Unit 1015 N, 1008 E near the weighing barn.

Twenty-three other artifacts were found relating to recreation/leisure. These include six crown caps, one from a FALLS CITY beer bottle. Also recovered was a screw-top cap from a soft drink bottle. Fourteen aluminum pull tabs were also found. The aluminum beverage can with the removable pull tab was patented in 1962. Additional artifacts related to leisure food consumption on the site are two plastic spoon fragments.

Artifacts in the Recreation/Leisure Group were concentrated in the six units closest to the parking area with the highest number (n=19) in Unit 1027 N, 1010 E. This is in the toss zone around the parking area and along State Route 28.

Architecture Group

Architectural artifacts were second only to the Kitchen Group with 349 artifacts in this category. These constitute 33%of the artifacts in the historic assemblage. Major classes include nails (n=306) and window glass (n=37). As has been the custom in historic site analyses at The University of Tennessee-Knoxville, bricks and brick fragments were not counted in this total. There were only three brick fragments and two bricks recovered at the Forbus site. All are machine-made bricks which were manufactured no earlier than the last quarter of the nineteenth century and were probably made after the turn of the century. The two whole bricks are side wire-cut which in the Knoxville area appear to have made in the early twentieth century.

Of the 253 nails identifiable as to type, 246 are wire nails and only seven are cut. Research on standing structures in the Knoxville area indicates wire nails replaced cut nails in the late 1890s. Of the identifiable type, 173 wire nails and 5 cut nails can be classified by pennyweight and condition (unaltered, bent [pulled], and clenched). These are listed in Table 14. Other wire nails include one roofing nail, 62 unidentifiable broken nails, and 10 unidentifiable bent nails. There are two broken cut nails. Fifty-three unidentifiable nails round out this architectural artifact class.

The frequencies of pennyweight and nail condition reveal some interesting building/remodeling activities at this site. The most frequent wire nail pennyweight is the 8d, probably used for attaching siding on the nearby buildings. The fact that 35 of 57 of these nails are bent indicates this damage resulted from the pulling and replacement of these boards. The 28 5d nails were apparently used for the attachment of tin roofing. Five of these nails still had the attached lead roofing seal. Since neither of the present buildings on the site have tin roofs it is believed these nails probably come from the grain

Table 14. Size and Condition of Nails.

Size	Unaltered n	Unaltered %	Bent n	Bent %	Clenched n	Clenched %	Total n
Cut Nails							
5d					2	100	2
6d			1	100			1
10d	2	100					2
Subtotal	2	40	1	20	2	40	5
Wire Nails							
2d	7	88	1	13			8
3d			1	100			1
4d	5	83	1	17			6
5d	20	71	8	29			28
6d	12	60	6	30	2	10	20
7d	2	25	4	50	2	25	8
8d	22	39	35	61			57
9d			1	100			1
10d	7	24	19	66	3	10	29
12d	1	20	4	80			5
14d	1	33	2	67			3
<19d	2	29	3	43	2	29	7
Subtotal	79	46	85	49	9	5	173
Site Total	81		86		11		178

storage shed. The presence of eight 2d nails also suggests that a shake roof may have been used on one or more of these buildings early in the construction history at this site.

The low percentage of clenched wire nails (5%) and high percentage of unaltered wire nails (45%) is believed to be characteristic for a construction site (Young and Carr 1989). This is not unexpected here since two frame buildings are still standing and one was demolished/razed. However, what was unexpected is the fact that the heaviest concentration of nails is not in a unit or units adjacent to the cattle barn but is in Unit 1017 N, 997 E where 112 nails were recovered and Unit 1027 N, 1010 E where 37 were found. These units are located at the greatest distance from the cattle barn and blacksmith shop. The nails in these units, especially 1017 N, 997 E, are undoubtedly from the demolished/razed grain storage shed. This is indicated not only by the proximity of this unit to the former structure site but also by the proportion of unaltered and bent nails and the presence of 5d nails which were used on the tin roof of this structure.

The second most frequent artifact is window glass. This glass was separated by color/condition: blue/green, six; clear, 20; and clear with a "frosted" surface, 11. The reason for a frosted surface condition is not known. The blue-green glass ranges from 1.85-3.00 mm in thickness with an average of 2.5 mm; the clear glass ranges from 2.0-3.1 mm with an average of 2.6 mm; the "frosted" glass ranges from 2.0-3.1 mm with an average of 2.8 mm. Since it has been demonstrated that window glass increases in thickness through time (Roenke 1978), the blue/green glass is apparently the earliest used here. Research on window panes from standing structures in the Knoxville, Tennessee area suggests that glass with a thickness of 2.4-2.6 mm dates from the early twentieth century.

The window glass is scattered over the site with most of the sherds (60%) found in the seven units closest to the parking area and the largest number in units 1027 N, 1010 E (n=10) and 1017 N, 997 E (n=7). Only one blue/green sherd was found near the barn but the majority of the frosted sherds were found around this building. The origin of this glass is not known since the barn has no windows. The blacksmith shop had a window but the units closest to this structure did not produce any window glass. Since the grain shed had windows, it is believed that the concentration of blue/green glass in Unit 1027 N, 1010 E is probably from this building.

Other architectural artifacts include a lead roofing nail seal, an iron door latch bar, a wood screw, a piece of corrugated roofing tin, and two fragments of sewer tile.

Clothing Group

Only three clothing artifacts were found on the Forbus site. Two of these are buttons. One is brass with a pressed decorated face and a soldered eye. This is a nineteenth century artifact. The other button is a synthetic material with the brand

name TUF NUT and the patent date of 1924 stamped on the back. The other Clothing Group artifact is a pair of scissors.

Personal Group

These are artifacts that would normally be used by only one person. The only personal artifact found at this site were five teeth from a plastic comb.

Arms Group

Only two artifacts associated with firearms were recovered on this site. These include a 22 caliber cartridge case, SUPER X, and a lead buckshot. The rarity of Arms Group artifacts on such a rural site is somewhat surprising.

Automotive Group

Only five artifacts were placed into this group which pertains to motor vehicles and their maintenance. Four pieces of glass almost 5 mm thick are believed to be windshield glass. They were all found in Unit 1027 N, 1010 E. The other automotive artifact is a plastic battery fitting. It is surprising that more automobile parts were not found here considering the proximity of the parking area and the state highway. However, it was related by Julius Johnson that automobiles were not repaired in and around the blacksmith shop. This was done at other establishments in the community (personal communication with Julius Johnson, April 16, 1990).

Stable and Barn Group

A total of 82 artifacts was placed into this group that was obviously associated with the activities in the cattle weighing barn. Seventy-five of these artifacts are pieces of plain fence wire, some twisted. Only one section of barbed wire was recovered. Other artifacts associated with fencing are three U-staples. Two parts from a mower bar are included in this group. One is a blade, the other a blade mechanism. An iron hook is believed to be a hay hook.

Stable and barn artifacts are definitely concentrated around the cattle weighing barn. The densest concentration of these artifacts is in units 1010 N, 1010 E and 1002 N, 1007 E (10 artifacts each). Fifty-four percent of the Stable and Barn Group artifacts are found in the 16 units around the periphery of the barn.

Blacksmithing Group

This is a new group category created in The University of Tennessee-Knoxville analysis of historic artifacts, warranted by the large number of artifacts either definitely associated with this activity or possibly associated with the shop on this site. In past analyses, these artifacts would have been considered a class within the Activities Group of South (1977) but the fact that this was a major activity on this and many other rural sites in the Southeast demands that it be given equal status with the other groups. Also, careful examination of the iron artifacts revealed that a number of them had been cut and/or bent, obviously during the making or repair of iron tools and machinery. Metal objects and tools are very common in the artifact assemblage of late nineteenth and twentieth century rural sites. This bewildering array of "junk" is often simply placed into a general activities group rather than the researcher attempting to determine the actual function of these objects. It behooves us, then, to look closely at these metal artifacts to see how they have been modified or used.

A total of 107 artifacts were placed into this group. These include two categories of blacksmithing material. One category is definitely unique for blacksmithing. This includes iron scrap used to make tools and other machinery: iron rod (n=12-two are bent and/or cut), iron bar (n=7-two are cut), sheet iron (n=8), and perforated sheet iron (n=3). Another group of artifacts shows evidence of modification in the repair of machinery. These include cut/bent bolts (n=4), cut/bent bolts and nuts (n=4), and cut nuts (n=3). The other category of artifacts was probably used in the shop but could have been used in other farm activities as well. These include: file (n=2), drill bit (n=1), hacksaw blade (n=4), bolt (n=20), bolt and nut (n=11), nut (n=2), bolt/screw (n=1), washer (n=8), cast iron sleeve (n=2), horseshoe (n=5), and horseshoe nails (n=10).

The inclusion of horseshoes and horseshoe nails in the Blacksmithing Group presents somewhat of a dilemma since in most analyses these artifacts are placed into the Stable and Barn Group. This makes sense on most rural sites but horseshoeing was one of the services offered in the Forbus shop as late as the 1950s. Since the distribution of the Blacksmithing Group artifacts definitely shows the greatest density in units between the cattle barn and the blacksmith shop (Unit 1010 N, 1010 E-11; 1005 N, 1009 E-10; 1002 N, 1007 E-9), it was predicted that the horseshoeing material, if primarily derived from the shop, should show the same distribution. The largest number of these artifacts (n=3) was found in Unit 1002 N, 1007 E with nine being in the units south of the cattle barn. These horse related artifacts are definitely associated with the blacksmith shop.

Activities Group

These are 45 artifacts that cannot be placed into any of the above activity classes. They include: cast iron handle fragment (n=1), unidentified copper/brass and iron object (n=1), cast iron object (n=1), unidentified iron (n=30), sheet tin (n=6), unidentified aluminum container (n=1), aluminum fragment (n=1), aluminum wire (n=1), copper wire (n=1), plastic coated wire (n=1), and plastic fragment (n=1).

CONCLUSIONS

The earliest historic artifacts found at the Forbus site correspond to the turn of the century date for the construction of the standing cattle weighing barn and blacksmith shop. The razed grain shed was probably built at the same time. With the exception of the brass button, no other artifacts were found dating to the pioneer settlement of Forbus in the early nineteenth century.

The type and distribution of the historic artifacts recovered here also conform to the historic activities at this site. However, the objective of historic archaeology is not to simply confirm or deny historical fact but to add new knowledge about the historic lifeways at a site and/or to explain the natural and cultural transforms that occur between the systemic and archaeological contexts. So what new facts about Forbus lifeways have been revealed in the archaeological context here and do we have a better understanding of the transforms that occurred on this site?

Although there is no evidence of a dwelling on this site, the concentration of late nineteenth-early twentieth century artifacts in Unit 1027 N, 1010 E indicates dumping, probably from the nearby store and residence(s) in the area. Since this material was deeply buried, it is probably characteristic for the domestic assemblages of the turn of the century Forbus community. Unfortunately, this historic deposit will be destroyed by the new state highway right-of-way.

The excavation at the Forbus site has resulted in the delineation of two important activity groups that are present on such rural sites; the Recreation/Leisure Group and the Blacksmithing Group. It is evident from the Forbus data that the former group, largely represented by beverage bottle sherds, should be distinguished from the Kitchen Group. The next step is to determine how to get an accurate count of the containers represented from the myriad of glass sherds, research that must be directed at the transforms that occur in these fragile containers before and after they reach the archaeological context.

The establishment of a Blacksmithing Group was accomplished by the identification of metal artifacts definitely used and/or modified in the shop. This emphasizes the importance of carefully examining the large numbers of metal artifacts recovered on late nineteenth-early twentieth century rural sites, since blacksmithing was an important activity on some of these sites.

The concentration of nails in Unit 1017 N, 997 E and their condition suggested that another structure had stood near this location. This was confirmed by Julius Johnson who described a former grain storage shed near this unit. The fact that the quantity, type, and condition of nails can signal the location of such a structure is important in the study of rural sites, since many frame outbuildings did not have substantial foundations, and nails are often the only clue we have to the buildings' former existence and configuration. A comparison of the nail assemblage at this site to those found at the locations of other similar

outbuildings should help us establish the kinds of transformations that take place in nails as they are used, removed, and finally deposited in the archaeological context.

CHAPTER XIII

SUMMARY

Andrew P. Bradbury

A program of Phase II archaeological testing and Phase III data recovery was undertaken by the Transportation Center at The University of Tennessee-Knoxville for the Tennessee Department of Transportation in conjunction with the proposed bridge replacement and road relocation project over Caney Creek on State Route 28. Subsurface testing revealed that the site area had not been plowed and that undisturbed alluvial deposits were present. The archaeological investigations revealed Early Archaic, Late Archaic, Middle Woodland, and Mississippian occupations. Several rock clusters and rock concentrations, which probably represent cooking facilities, were encountered. No other prehistoric features were observed. Materials associated with the historic market center (cattle weighing station and blacksmith shop) were also recovered and analyzed.

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