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An intensive archeological test of the Edenwood site, 38LX135, Lexington County, South Carolina

James L. Michie

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AN INTENSIVE ARCHEOLOGICAL TEST OF THE
EDENWOOD SITE, 38LX135, LEXINGTON COUNTY,
SOUTH CAROLINA

JAMES L. MICHIE

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AN INTENSIVE ARCHEOLOGICAL TEST OF THE EDENWOOD
SITE, 38LX135, LEXINGTON COUNTY, SOUTH CAROLINA

by

James L. Michie
Research Manuscript Series No. 144

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Prepared by the
INSTITUTE OF ARCHEOLOGY AND ANTHROPOLOGY
UNIVERSITY OF SOUTH CAROLINA
February, 1979

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INTRODUCTION

In March of 1978, an intensive archeological testing of the Edenwood site, 38LX135, Lexington County, South Carolina was conducted by James L. Michie, Research Assistant Archeologist, Eric Poplin, John Norris, James Scurry, and Claudia Wolfe, employees of the Institute of Archeology and Anthropology, University of South Carolina. The intensive testing resulted from an initial reconnaissance survey performed by Marion F. Smith (1977), and during which the Edenwood site was visited and recommended intensive testing to determine the significance of the site. Although Smith had surveyed the area for the South Carolina Electric and Gas Company, Inc., the area had received a reconnaissance survey by Ronald Wogaman, John House, and Albert Goodyear (1976) for the proposed Twelfth Street Extension route. During the highway survey, the Edenwood site was discovered, and the researchers noted a potential significance, which was confirmed by Smith when he utilized post-hole diggers for sub-surface testing.

The reconnaissance performed by Smith, and the resultant program of intensive testing was designed to comply with the National Historic Preservation Act of 1966 (PL 89-665); the National Environmental Policy Act of 1969 (PL 91-190); Executive Order 11593, "Protection and Enhancement of the Cultural Environment", (36 CFR 8921); Preservation of Historic and Archeological Data, 1974 (PL 93 291); the Advisory Council of Historic Preservation, "Precedures for the Protection of Historic and Cultural Properties", (36 CFR VIII Part 800); and EC 1105-2-37, Identification and Administration of Cultural Resources (August 1975).

The specific purpose of the intensive testing was to determine the nature of the archeological resource, its potential and significance, making possible the recommendation of a long term management plan, and if unexpected destruction should occur the small scale excavation will make data available for scientific study. The archeological project, in conjunction with the avoidance of construction activities, will provide adequate mitigation of potential adverse affects.

ENVIRONMENTAL SETTING

Geology

The Broad and Saluda Rivers are formed at the base of the Appalachian Mountains in North Carolina, and flow south over crystalline structures and residual soils of the South Carolina Piedmont. The rivers continue through the state until they merge on the Fall Line forming the Congaree River. For a short distance, the river flows over and around small islands and shoals until it crosses the Fall Line. As the river enters the Coastal Plain, it flows straight for about a mile and then begins a meandering pattern within a widened floodplain that eventually flows into the Santee River some thirty miles away. The Edenwood site is located about two miles below the Fall Line on the western side of the river (Fig. 1).

The site is situated on a basal formation of Middendorf clays that were formed in a predominately fluvial environment. Ancient river activities have altered the Middendorf structure which lies buried under more recent fluvial soils. Presently, the site is composed of sand, various pebble aggregates, and clay. For the most part, the site varies no more than six feet in elevation and it is relatively flat on its apex (Figs. 2 & 3).

The Middendorf clay is probably Cretaceous in origin, which formed under fluvial and oxidizing conditions. This clay formation is seen in many places in the vicinity of the site, but it has been dissected considerably by fluvial processes of later time periods. Following erosion, deposition of sand, gravel, and clay took place which may represent an alteration of the Congaree River during the Pliocene or Pleistocene. The matrix of the site suggests that the river cut through the existing Middendorf clays, depositing sand and gravel in a point bar formation. During this time, the river formed oxbow cut-offs as it meandered in its old corridor. The clay deposits, which contain numerous small, rounded pebbles, represent decreased water velocity and the subsequent deposition of clay in a relatively inactive fluvial environment such as an oxbow lake. Since fluvial deposition, the site has remained rather stable. Erosion and deposition through colluvial processes appear to have been minimal during the remainder of the Pleistocene and Holocene (Donald Colquhoun, personal communication). This geological history is well recorded in the elevation profiles seen in Figure 4.

Flora and Fauna

The present environment surrounding the site is represented by communities of hydric and mesic forests, probably in secondary stages

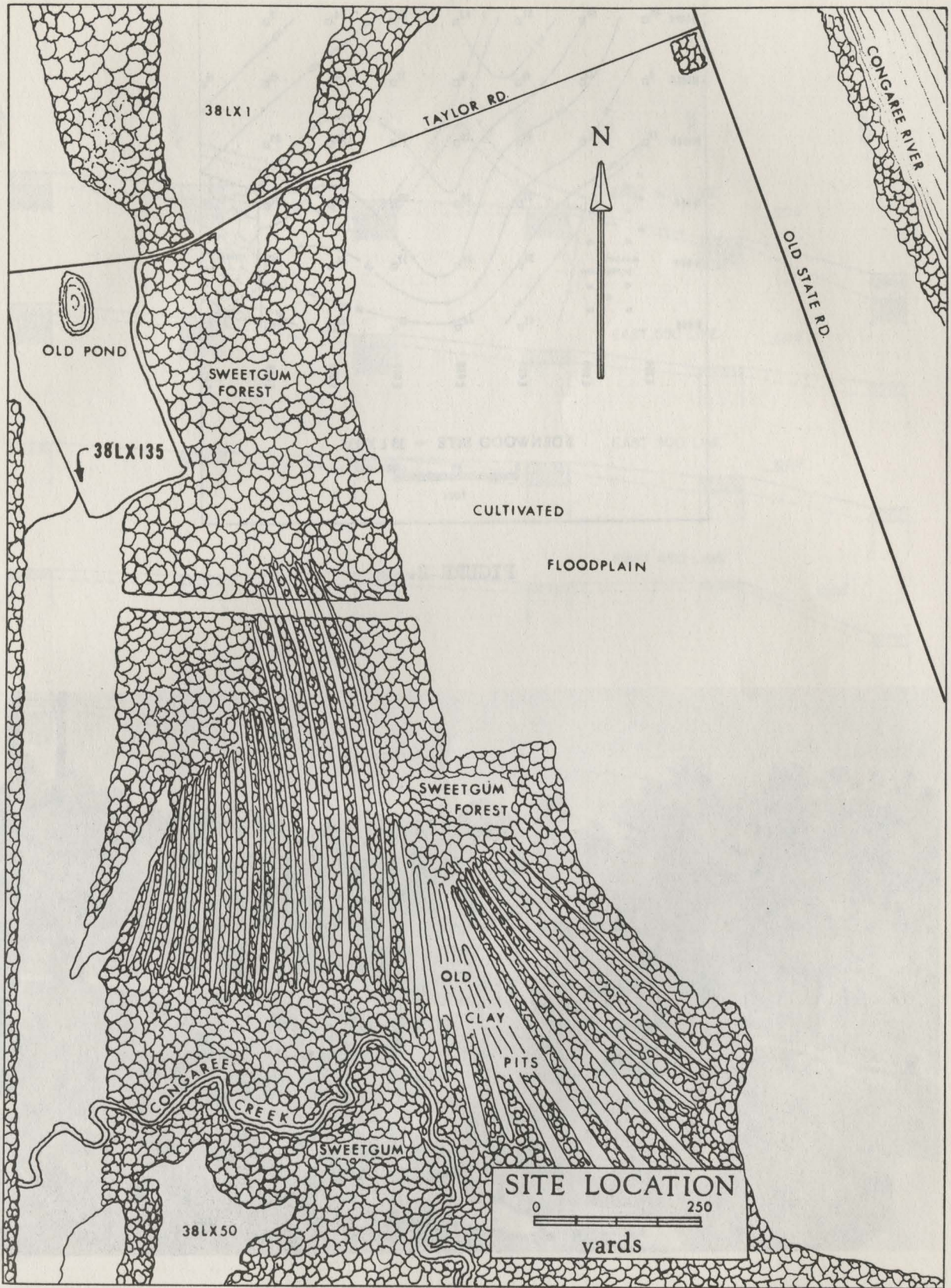


FIGURE 1

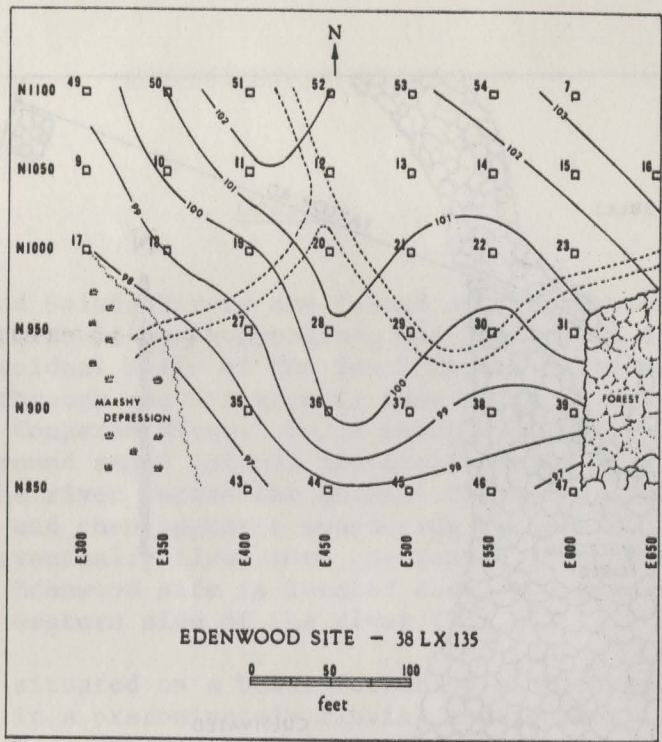


FIGURE 2.

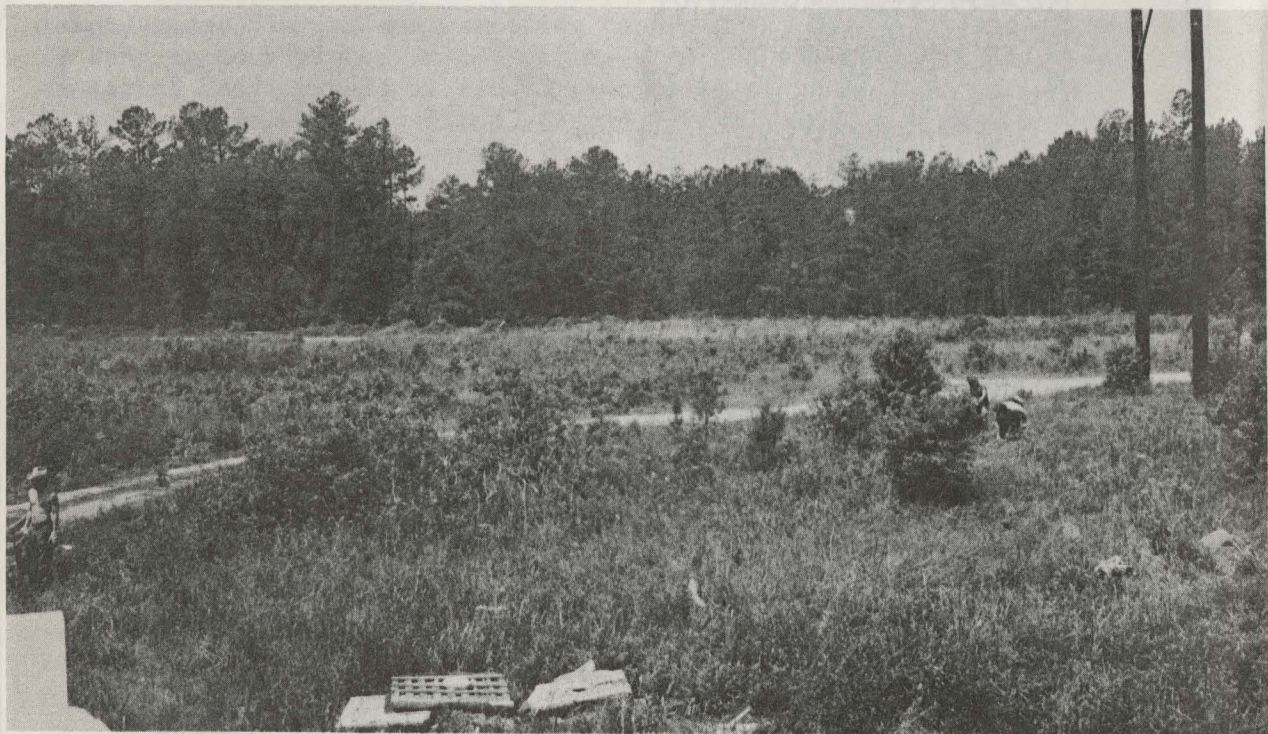


FIGURE 3: The Edenwood Site.

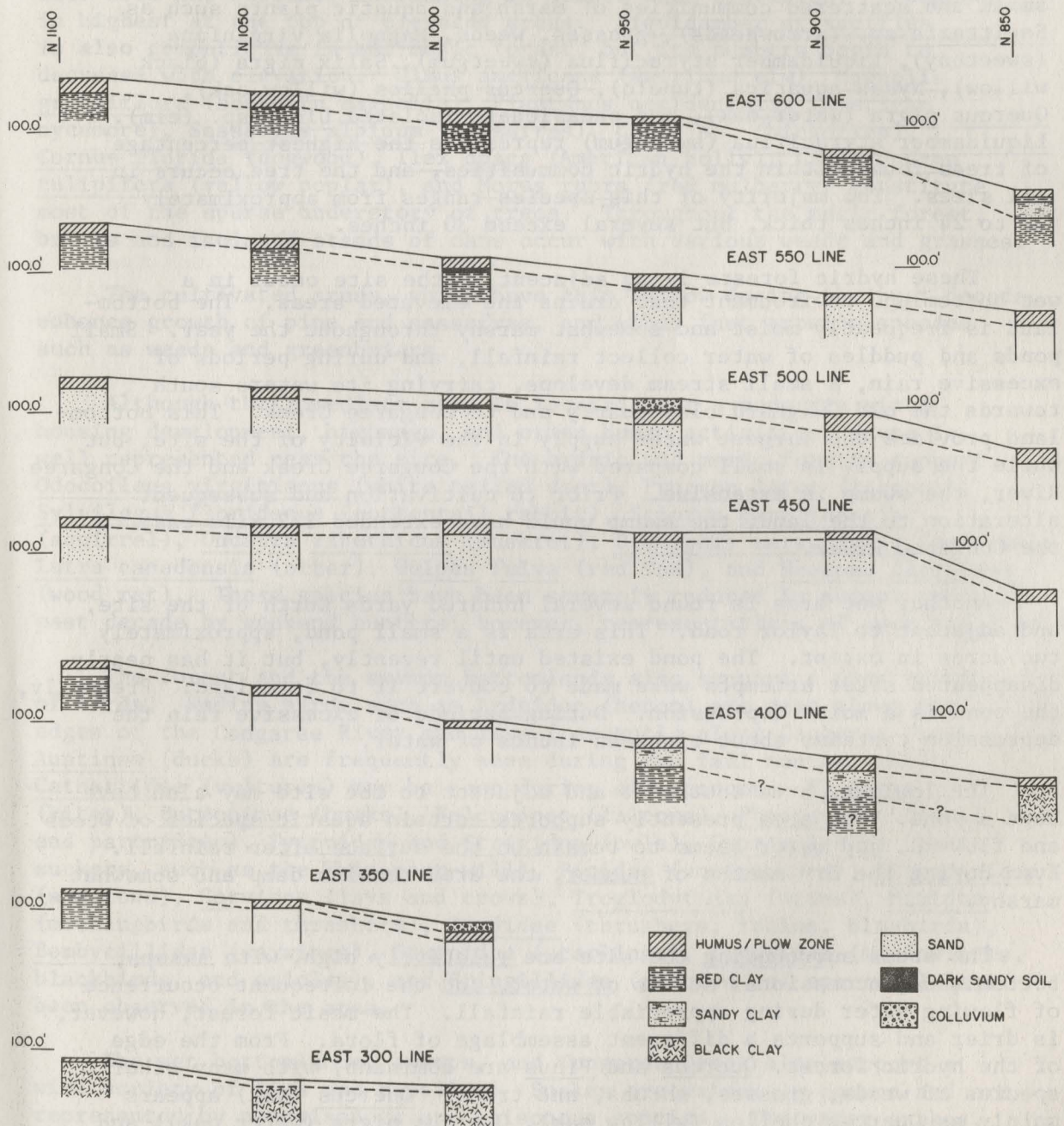


FIGURE 4: Profiles from excavation units at Edenwood.

of growth. The existing forest represents relatively small trees with considerable understory.

The hydric forests, located in the low-lying areas, support small and scattered communities of marsh and aquatic plants such as Sagittaria sp. (arrowheads), grasses, weeds, Magnolia virginiana (sweetbay), Liquidambar styraciflua (sweetgum), Salix nigra (black willow), Nyssa aquatica (tupelo), Quercus phellos (willow oak), Quercus nigra (water oak), and occasional, isolated Ulmus sp. (elm). Liquidambar styraciflua (sweetgum) represents the highest percentage of trees found within the hydric communities, and the tree occurs in all sizes. The majority of this species ranges from approximately 18 to 24 inches thick, but several exceed 30 inches.

These hydric forests lying adjacent to the site occur in a wet bottomland environment that drains the elevated areas. The bottomland is frequently moist and somewhat marshy throughout the year. Small ponds and puddles of water collect rainfall, and during periods of excessive rain, a small stream develops, carrying its waters south towards the old Guignard clay quarry and to Congaree Creek. This bottomland provides the largest water supply in the vicinity of the site, but while the supply is small compared with the Congaree Creek and the Congaree River, the swamp is extensive. Prior to cultivation and subsequent alteration to the land, the swamp would have extended 1/2 mile east to the Congaree River.

Another wet area is found several hundred yards north of the site, and adjacent to Taylor road. This area is a small pond, approximately two acres in extent. The pond existed until recently, but it has nearly disappeared after attempts were made to convert it to farm land. Presently, the pond is a moist depression. During periods of excessive rain the depression contains about eighteen inches of water.

The lowlying area southwest and adjacent to the site may also have been a pond. The area presently supports certain aquatic species of weeds and flowers, and water seems to remain on the surface after rainfall. Even during the dry months of summer, the area remains damp and somewhat marshy.

The areas surrounding the site are relatively high, with swamps, bottomlands, occasional stands of water, and the infrequent occurrence of flowing water during appreciable rainfall. The mesic forest, however, is drier and supports a different assemblage of flora. From the edge of the hydric forest, Quercus and Pinus are dominant, with many other species of weeds, grasses, shrubs, and trees. Quercus (oak) appears mainly as Quercus phellos (willow oak), Quercus nigra (water oak), and less frequently with Quercus laurifolia (laurel oak). The oaks are moderate in size, exhibiting diameters of approximately fourteen to twenty inches at breast height. Few oaks are larger than twenty-four inches. Of the larger oaks, the white oak is dominant; and red oaks, nearly nonexistent.

Pine, represented by Pinus taeda (loblolly pine) and Pinus palustris (longleaf pine), is not as numerous as oak. The trees range in size from six to twenty-four inches. Pines begin to appear several feet from the ecotone, increasing in number with elevation. Frequency is highest at the top of elevated areas. Liquidamber styraciflua is also competitive in the mesic forest, but its numbers begin to decrease with elevation. Ulmus americana (American elm), Magnolia grandiflora (southern magnolia), Plantanus occidentalis (American sycamore), Sassafras albidum (sassafras), Carya sp. (hickories), Cornus florida (dogwood), Ilex opaca (American holly), Liriodendron tulipifera (yellow poplar), and Morus rubra (red mulberry) constitute most of the sparse understory of trees. Throughout the mesic forest, briars and isolated stands of cane occur with various weeds and grasses.

The cultivated areas, which have lain fallow during the past decade, enhance growth of pine and sassafras, and other fast growing species such as weeds and greenbriars.

Although the immediate area is located near a moderate sized housing development, highways, and other human activities, fauna is well represented near the site. The hydric and mesic forests support Odocoileus virginianus (white tailed deer), Procyon lotor (raccoon), Sylvilagus floridanus (cottontail rabbit), Sciurus carolinensis (squirrel), Ondatra zibethicus (muskrat), Didelphis marsupialis (opossum), Lutra canadensis (otter), Vulpes fulva (red fox), and Neotoma floridana (wood rat). These species have been severely reduced in number over the past decade by weekend hunters; however, representatives of each still exist.

The forest and the swampy bottomlands also support a wide variety of birds. Wading birds such as Ardeidae (heron) are seen along the edges of the Congaree River and less frequently along Congaree Creek. Anatinae (ducks) are frequently seen during the fall months, while Cathartidae (vultures) may be seen during all seasons. Elaninae (kites), Buteoninae (hawks), Falconinae (falcons), Phasianidae (quail and partridges), Tytonidae and Strigidae (owls), Caprimulgidae (goat-suckers, such as the Whip-poor-will), Picidae (woodpeckers), Hirundinidae (swallows), Corvidae (jays and crows), Troglodytidae (wrens), Mimidae (mockingbirds and thrashers), Turdidae (thrushers, robins, bluebirds), Bombycillidae (waxwings), Sturnidae (starlings), Icteridae (meadowlarks, blackbirds, and orioles), and Fringillidae (redbird and sparrows) have been observed in the area.

The wet bottomlands, swamps, and Congaree Creek also support a wide variety of fish and reptiles. Snakes are extremely common and are represented by nonpoisonous and poisonous species. The water snakes, such as Natrix sipedon (common water snake) and Natrix erythrogaster (painted water snake) are perhaps the most common, while the poisonous Agkistrodon piscivorous (cottonmouth) is rare. The upland areas yield other species such as Heterodon nasicus (hog-nose snake), Elaphe guttata (corn snake), and Thamnophis ordinatus (garter snake). Species of Crotalus adamanteus (diamondback rattler) and Agkistrodon contortrix (copperhead) are also present, but they are uncommon.

Fish within Congaree Creek include Micropterus salmoides (large mouth bass), Esox niger (jack fish), Lepomis macrochirus (bream), Ictalurus punctatus (channel catfish), Amia calva (mudfish), Lepisospeus osseus (garfish), Morone chrysops (white bass), Lepomis auritus (redbreast), Lepomis gulosus (warmouth), and Pomoxis nigromaculatus (crappie). The above species seem to exist year-round but in the spring, migratory fish such as Morone saxatilis (striped bass) and Alosa sapidissima (shad) enter the creek.

Bottomland and creek turtles are mainly Pseudemys scripta elegans (sliders), Chelydra serpentina (snapping turtle), Kinosternon subrubrum (mud turtle), and the Sternotherus odoratus (musk turtle). The only noticeable upland species is the Terrapene carolina (box turtle). In addition to turtles, the creek also supports Alligator mississippiensis, and some of these alligators have reached lengths in excess of ten feet.

Considerations for a Paleoenvironment

The vegetational history of the eastern United States is poorly known, and this lack of information is particularly critical in South Carolina. The palynological studies done by Watts (1971) and Whitehead (1965) produced information gathered mainly from the sediments of ponds and lakes; in many instances, the sediments yielded certain hiatuses in the depositional record. The data was gathered from areas in Virginia, North Carolina, South Carolina, Georgia, and Florida, presenting a general overview of climatic and vegetational histories of the region. Although many other studies are needed for specific environments, the existing studies do indicate significant vegetational changes.

During the Sangamon Interglacial, some 40,000 years ago, the southeastern forests were similar to those of today. Pine and oak were dominant; cypress was abundant in areas of moisture; sea level was slightly higher; and the climate was somewhat warmer. But with the advance of the Wisconsin glaciers, significant climatic and vegetational changes occurred. The Full Glacial, lasting from approximately 25,000 to 15,000 years ago, produced appreciable differences in the forests of the south Atlantic states. The forests of Virginia were represented by boreal species of trees, such as spruce and fir, with higher percentages of spruce and some pine. In southeastern North Carolina, the climate supported a dominant forest of jack pine and spruce, with less spruce than pine. Fir was rare, and other northern species constituted small percentages. This situation is similar to that indicated by the pollen data from northwestern Georgia. An environmental reconstruction from these areas suggests that jack pine/spruce forests were open, with communities of heliophytic herbs and shrubs. Hardwoods were probably rare and grew in special conditions such as valley forests on alluvial plains, or, possibly as scattered individuals within the conifers.

The Late-Glacial, lasting from approximately 15,000 B.P. to 10,000 B.P., was characterized by the gradual disappearance of the boreal species of trees, and the appearance of other elements such as beech, hemlock, birch, and alder. With the appearance of this newer forest, oak and hickory began to rise in number. In North Carolina, this transition probably occurred somewhat later than in the southern latitudes where oak and hickory may have been developing earlier. But the northern elements were still present, and forests contained other thermophilous species. Quite possibly, the forests of the Late Glacial were also open.

Following the Late Glacial, the Post Glacial continued development of oak/hickory deciduous forests, which included the continued emergence of other species that had disappeared from the Sangamon with the advancing glaciers. With Post Glacial, the present pine forests were increasing and Taxodium (cypress), Liquidamber (sweetgum), and other bottomland flora were increasing their numbers. By at least 5,000 years ago, the present-day forests began emerging (Table 1).

TABLE 1

VEGETATIONAL HISTORY OF SOUTH CAROLINA

(after Watts 1970, 1971; Whitehead 1965, 1973)

Time (B.P.)	Age	Vegetation	Climate
40,000	Sangamon	Oak/hickory forests, abundance of pine, presence of cypress, sweetgum, etc.	maximum warm trend---warming-----glaciation-----cooling---warm trend
35,000			
30,000		Climate and forests changing	
25,000		Northern forests begin to appear	
20,000	Wisconsin Full-Glacial	Semi-boreal, open forests with jack pine and spruce. Oak/hickory percentages low, occurring in alluvial plains. Cypress low.	
15,000		Appearance of beech, alder hemlock, and beech forests.	
10,000	Holocene	Climate and forests changing Oak/hickory begin rising	
5,000		Oak and hickory reappear in high percentages. Pine abundant, also cypress and sweetgum. Emergence of present day forest.	
Present			

AN ARCHEOLOGICAL OVERVIEW OF THE PROJECT AREA

Archeological research within the Congaree River valley and Congaree creek may be regarded as a patchwork of several small investigations, published articles, and unpublished research. The earliest record of publication is by Wauchope (1939) who described several Clovis points from the state, two of which were found in the upper portion of the river valley. Several references to historic Indian groups within the Congaree valley were made by Milling (1940). Griffin (1943) described a ceramic type and named it for a small creek which flows into the Congaree River--Thom's Creek.

Following a period of sixteen years, the area received attention only from relic collectors. In 1958, Dr. William E. Edwards was employed by the Department of Anthropology and Sociology at the University of South Carolina as a professor of anthropology. With encouragement from the department, Edwards began surveying several areas within the state, and in 1969 he excavated a small portion of the Knight site located near Dry Creek. The results of the research, however, were never published. During the next ten years Edwards visited several localities within the valley, but neglected to report on his investigations.

In 1969, James Michie began excavating at the Thom's Creek site (1969). This research provided certain stratigraphic information which confirmed basic cultural sequences set forth by Coe (1964) in North Carolina. In 1970, Michie began investigations at the Taylor site (38LX1), which lasted for nearly two years (1970). These excavations clearly demonstrated that Early Archaic material culture can exist in an undisturbed context, and if large enough areas are opened, that intra-site patterns of human behavior can be determined. In 1972, Michie spent several months excavating portions of the Buycke's Bluff site (38LX17), thus providing additional information concerning cultural sequences and geologic variability and its affect on the archeological record (Institute of Archeology and Anthropology site files). These initial investigations in the late 1960's and the early 1970's indicate the relative importance of sites within the valley: sites can yield stratigraphy and sites can yield relatively undisturbed patterns of human behavior.

In 1974, David G. Anderson, James L. Michie, and Michael B. Trinkley began excavations at the Manning site (38LX50) as a project associated with the Archeological Society of South Carolina, Inc. The Archeological Society of South Carolina in 1977, opened the Manning site once again and excavations are currently underway with new research objectives and altered field objectives which will yield data of past cultural systems. The site continues to produce cultural material to a depth of approximately twenty-two inches, and several large historic 18th century features have been found. The archeological material, as it was discovered in 1974, exists undisturbed below an old plow zone.

At that time, exploratory investigations were also being conducted for the purpose of discovering Old Fort Congaree. This research was conducted originally by James Michie, and later published by Anderson (1975). Following their work, Michael Trinkley also devoted considerable effort to locating the fort (Trinkley n.d.). During the efforts to locate the old 18th century fort, Anderson, Michie, and Trinkley conducted a field reconnaissance of the Southeastern Beltway (1974). The results of the survey prompted two additional surveys, one by Anderson (1974) and the other by Goodyear (1975). The Beltway surveys included intensive, controlled surface collecting and a small test pit on 38LX96, providing further information in the form of artifact patterning within sites of the Congaree River valley near Columbia.

After completion of the Beltway surveys, several members of the Institute of Archeology and Anthropology became involved in the field reconnaissance and intensive survey of the proposed 12th Street Extension. Wogaman, House and Goodyear (1976) performed the reconnaissance, while Perlman, Cable, Cantley, and Michie (n.d.) intensively tested the Godley (38LX) and the Manning sites. The intensive testing revealed that Manning has undisturbed architectural features, as well as undisturbed artifact bearing soils below the plow zone. The Godley site also produced similar information, but it additionally yielded two specific areas suggestive of living floors. These floors are represented by a hard, compact soil containing numerous specks of charcoal and fragments of cultural material. These features are oval in outline, approximately fifteen feet by ten feet.

In 1976, Marion Smith, also with the Institute of Archeology, surveyed a proposed route for a South Carolina Electric and Gas Company transmission line in the vicinity of Congaree Creek. During this survey, the Edenwood site was located. In his proposal, Smith (1977) argued for mitigation of the site.

In 1970, Donald Sutherland of the Department of Anthropology, University of South Carolina, conducted excavations at the Thom's Creek site with several students (Trinkley 1975); and in 1976, Leland G. Ferguson excavated at the Manning site with a crew of students. Prior to Ferguson's investigation, the site was subjected to random sampling with the aid of William Ayres, also with the Department of Anthropology, and John House of the Institute of Archeology and Anthropology. The sampling method provided the researchers with inter-site patterns which determined later excavation strategies. The efforts during the summer of 1976 substantiated the results of the 1974 Archeological Society excavations.

The southwestern side of the Congaree Valley has received most of the archeological attention, but in August of 1975, Michael Trinkley and James Michie excavated a large test pit on the northwestern side of the river at the Rainey Jones site (38RD10). The test indicated evidence of utilization of the site during several cultural periods, and it demonstrated once again that certain sites have the potential of yielding material culture in an undisturbed context. Lying below the plow zone was evidence of Middle and Early Archaic occupations (Institute of Archeology and Anthropology site files).

The Paleo-Indian period is well represented in the Congaree Valley at four known localities (Michie 1977). The transition period from Paleo-Indian to Early Archaic is also represented by the occurrence of Dalton points at several sites near Columbia. Palmer points, and other representatives of the Early Archaic, abound within the valley. The Middle and Late Archaic periods are expressed at almost every site, as well as the Woodland and Mississippian traditions. The archeological reports cited within the above paragraphs have referenced all of the cultural manifestations.

This history of past and present research has demonstrated that deep sites exist, and chronological knowledge may be obtained. Research has additionally provided intra-site patterns of human behavior whenever large areas are opened, indicating that compact living floors are present at the Godley site, and that potentially significant information may be obtained regarding the spatial patterning of artifact distributions within the plow zone of shallow sites. And finally, the research has provided the archeologist with more cultural data concerning the various periods that have existed for the past twelve thousand years in South Carolina.

Paleo-Indian Period

At some time prior to the tenth millennium B.C., nomadic hunters entered what is now the Southeastern United States with an economy oriented towards the exploitation of now extinct mega-fauna and, in all probability, fauna that are presently surviving. In South Carolina, these early people heavily utilized the resources of the Coastal Plain, the Fall Line, and the lower fringes of the Piedmont. Settlement patterns suggest these people were living along major rivers and certain large creeks, and that they were avoiding physiographic regions of high relief and rugged terrain (Michie 1977). Michie (1977) has recorded several Clovis fluted points from the Congaree River valley, especially within the upper portion near Columbia and the area of Congaree Creek.

Although South Carolina has failed to provide positive evidence of subsistence patterns substantiating mega-fauna exploitation, a coastal site near Myrtle Beach has recently yielded the remains of a juvenile mastodon and the tenuous association with stone tools (Michie 1976; Wright 1976). The site, located near the present day coast line, is buried under eight feet of Holocene sediments. Near the bottom of these sediments and within a matrix of peat, the animal bones were discovered. Geologic interpretations suggest that the young mastodon died in the shallow waters of an ancient pond. A similar area, located in central Florida, has also yielded the remains of proboscidea, two juvenile mammoths, directly associated with a Suwannee projectile point and chert debitage (Hoffman n.d.).

The exploitation of proboscidea is recorded in the Southwest at several localities, and the general pattern suggests that the animals were dispatched in moist, wet environments such as ponds and creek valleys. In addition to proboscidea, other mammalian species such as extinct camel, horse, tapir, sloth, and bison were extracted from the late Pleistocene environment (Wormington 1957).

The Paleo-Indian period occurred during the final phases of the Pleistocene (10,000-8,500 B.C.), when much of the state was cooler and supported a forest changing from open communities of spruce and jack pine to one of northern hardwoods (Watts 1970, 1971; Whitehead 1965, 1973). With the climatic/environmental change during the waning of the Pleistocene, the mega-fauna population diminished. As a result, the behavioral patterns and lithic industries of the Paleo-Indian began to change with the environment; as the Holocene emerged, a new cultural tradition also emerged (Table 2).

Archaic Period

With the beginning of the Holocene, the Pleistocene glaciers had retreated into Canada and environmental conditions were significantly different. The semi-boreal forests had disappeared, and the northern hardwood forest had risen, consisting of beech, hemlock, alder, birch, and similar other species (see Table 1). These hardwoods lasted for a few millennia, but they too were replaced. By at least five thousand years ago the forests of the Southeast became dominated by oak, hickory, and pine, and this association has remained basically intact to the present (Watts 1971; Whitehead 1965). During these environmental changes the Archaic period was changing subsistence and technology to meet the environmental variability.

The Archaic period is represented by at least three cultural/technological stages: the Early, Middle, and Late. The Early Archaic is basically a technological expression of the earlier Paleo-Indian period. Characterized by Dalton, Palmer, and the Kirk series of projectile points (Coe 1964), and specialized tool assemblages of end-scrapers, burins, pieces esquillees, and blades, the Early Archaic lasted from 8,500-6,000 B.C., with subsistence directed towards the specialized hunting of white-tailed deer, as indicated by the high incidence of deer bones in the lower levels of Stanfield-Worley (DeJarnette, Kurjack and Cambron 1962). By the end of the Early Archaic, technologies were changing, and new projectile point types and tools began to be made. The Stanly and Morrow Mountain points, along with Guilford (Coe 1964), serve as temporal indicators of the Middle Archaic, which lasted from approximately 6,000-3,000 B.C. During this time people were utilizing more forest resources, while maintaining primary dependence on white-tailed deer. Instead of remaining primarily in the river valleys, as did the Early Archaic and Paleo-Indian groups,

TABLE 2

A CULTURAL SEQUENCE FOR THE HUMAN
OCCUPATION OF THE CONGAREE RIVER VALLEY

Chronology	Cultural Sequence	Subsistence	Trends
1975		Industrial	Increase in sedentism, population, and technology
1700	Historic	Agricultural	
1000	South Appalachian Mississippian	Developed Horticulture hunting and gathering	
500 A.D.			
	Middle Woodland	Hunting and gathering with horticulture	
0			
500 B.C.			
1000	Early Woodland	Hunting and gathering beginning of horticulture	
2000	Late Archaic	Shellfish extraction; hunting and gathering	
3000			
	Middle Archaic	Hunting and gathering	
6000			
	Early Archaic	Generalized hunting and gathering	
9000			
	Paleo-Indian	Specialized hunting and gathering	
Earliest Human Occupation in Congaree Valley?			

people began to exploit resources of the inter-riverine forests, in addition to the riverine. By at least 3,000 B.C. technologies had changed, as indicated by cultural material, and the Late Archaic began. Evidence exists that people were becoming more sedentary by 2,000 B.C., as reflected in several large shell middens of the coast and certain inland areas. Several large middens in the Savannah River valley, such as Stalling's Island (Claflin 1931), Groton Plantation (Stoltman 1974), and Bilbo (Williams 1968), demonstrate a Late Archaic dependence on shellfish in certain areas, while the coasts of South Carolina and Georgia display shell rings and heaps of oyster shell (Michie 1973; Williams 1968; Hemmings 1972). Technologies had changed to include the manufacture of Savannah River Archaic point types (Coe 1964), the utilization of steatite, and the alteration of bone and antler for tool production. The calcium content within shell heaps has preserved the bone and antler, while acidic soils of earlier non-shell sites quickly eroded and deteriorated the organic cultural material. Quite possibly, the technology of processing bone and antler for tools extends far back into the Archaic and Paleo-Indian periods, but such evidence has not been found in the acidic soils of other archaeological sites. Another cultural innovation of the Late Archaic period was the development of fiber-tempered pottery, which seems to occur with high frequency in the shell middens.

Even though subsistence appears to have been directed towards shellfish collecting in some areas, people in those areas and in non-shell midden sites, continued to exploit the deer and resources available in the forest and stream. The traditions of the Archaic began to collapse at about 1,500 B.C. as a rising production and development of ceramics, and the cultivation of specific plant foods brought about another cultural tradition (Table 2).

Woodland Period

The Woodland period, which lasted from approximately 1,500 B.C. to about A.D. 800, probably had its roots in the traditions of the Archaic. With the development of new technologies, such as ceramic production, small triangular projectile points such as Badin and Yadkin also appeared (Coe 1964). These may have been associated with the bow and arrow. Hunting and gathering continued as a subsistence base, but during this time, the economy probably implemented the cultivation of plants (Willey 1966).

With movement through time, ceramics developed various forms of size, shape, temper, and decorative motifs, while triangular points became smaller and more delicate in appearance. Pottery types are recognized by specific tempering and applied decorative motifs, such as sand and sherd tempering, as well as non-tempered varieties. Motifs appear as punctated, carved paddle stamped, net impressed, cord and fabric impressed surface treatments, and plain surface ceramics may also have existed (South 1976). Burial mounds began to appear during the

Woodland, and the presence of architectural features suggests an increasing trend towards sedentism. The Woodland sites are often larger than the Archaic sites, and many small sites are additionally noted, suggesting a diversity of cultural activities within differing environments (Table 2).

Mississippian Period

The Mississippian period, also known as the South Appalachian Mississippian as a regional complex, began approximately A.D. 800 and terminated with the European migration to the New World during the 17th and 18th centuries. Prior to its collapse, the period is characterized by large truncated temple mounds and smaller burial mounds; and subsistence was based on the cultivation of specific foods, especially corn. Other flora and fauna of the forests and rivers were exploited. Settlement was centered on the floodplains of large river valleys, and political systems were becoming more sophisticated (Willey 1966).

Ceramic vessels became larger and decorations were applied with carved paddles of complicated designs. Large urns were frequently made for the storage of grain, and they were sometimes used for the interment of human remains (Griffin 1967). These ceramic vessels often had complicated stamped surfaces, but were sometimes finished with corncob impressing, textile impressing, incising, simple stamping, and burnishing. Additionally, several varieties had undecorated surfaces. Tempering was accomplished by the inclusion of shell, sand, and fiber in the clay, while some were not tempered (South 1976).

Population seems to have increased during this period with an increase in sedentism. The villages were much larger and the increased production of food supplies and forest exploitation provided sufficient food for the population.

The Mississippian period, with its roots in the Woodland and close cultural affinities with the traditions of the Mississippi valley, collapsed soon after the arrival of Europeans who were migrating to the New World (Table 2).

RESEARCH STRATEGIES AND EXCAVATION PROCEDURES

Research Strategy

In terms of contemporary archeological perspectives, research should be oriented towards understanding the function of an archeological site and the associated tool assemblage. Questions should be directed toward subsistence, technology, environmental utilization, social structure, and other aspects of human culture. In this particular study of the Edenwood site, questions are being asked about site function, subsistence, and technology. As Brockington (1977) has pointed out in the mitigation proposal, the site may represent seasonal occupations near resources available during certain times of the year; it may represent specialized activities by people living at another site; or it may be the site of infrequent occupation by small, independent groups.

Wogaman, House, and Goodyear (1976), who originally discovered the site, made the following observations concerning the occurrence of lithic cultural material:

During the course of the controlled surface collection, the following cultural materials were collected: a small amount of fire-cracked rock; biface reduction debitage of quartz, Carolina slate, Coastal Plain chert, and argillite; 1 quartz utilized flake; 1 quartz end-scraper; and 1 quartz flake core. One biface of heat treated Coastal Plain chert was recovered and numerous biface fragments. The end-scraper indicates an Early Archaic occupation of the site, although this locus is likely to have been occupied at other times as well (1976: 24).

Smith (1977), who revisited the site during the initial reconnaissance for the Edenwood transmission line survey, found a similar, but broader temporal range of artifacts. His survey included surface collecting and post-holing for subsurface materials. Not only did Smith find additional material, but the subsurface tests indicated depth of those artifacts. According to Smith:

This site seems to have components from the Early, Middle, and Late Archaic subperiods, as well as from the Early Woodland subperiod. A quartz end-scraper most probably dates to the Early Archaic. A quartz point similar to the Morrow Mountain type may date from about 4500 to 4000 B.C. One point from the one meter square closely resembles the Savannah River type, but its 45 mm length most fits the Otarre type... (1977: 19).

A tabulation of the cultural material indicates the presence of a large percentage of fire-cracked rock, a high incidence of chunks and flakes of quartz, with a low incidence of slate, Coastal Plain chert, and argillite. The lithic artifacts also include a steep margin tool made of Coastal Plain chert, a small corner-notched Coastal Plain chert

projectile point (possibly a Palmer), a midsection of a Coastal Plain chert projectile point (unidentifiable), two fragments of quartz blanks (preforms), and one fragment of a quartz biface (Smith 1977: 32).

The fragmented quartz preforms and bifaces are unidentifiable in terms of temporal types, and they may well belong to various cultural periods. Both quartz flakes and slate debitage are also difficult to classify in temporal terms. Coastal Plain chert, however, may frequently lend itself to gross indicators of time, especially if it remained in soils for a considerable length of time. The great majority of chert from the Coastal Plain of South Carolina and Georgia lies in the Flint River formation and is composed of macro and microscopic fossils cemented with amounts of silica (Cooke 1936). This Oligocene chert is subject to relatively fast deterioration, especially if it contains impurities. There are at least three processes of deterioration operating to create patination. Oxidation and hydration, dissolution and leaching, and chemical and mechanical disaggregation affect those impurities within chert (Hurst and Kelley 1966) and subsequently produce an indicator for the age of a specific artifact. The age indicator, that of a high degree of patination, can certainly vary within cherts, and, as a result, ancient artifacts may suffer little or no surface deterioration. Those cherts with a high percentage of silica may suffer only slightly, and those with higher percentages of impurities may fall apart quickly, once exposed to the elements. Therefore, one must exercise caution when claiming antiquity to a weathered piece of chert.

The cherts known to exist in an archeological context in central South Carolina are of three types: the orange/yellow cherts from the Flint River formation, the blue/gray cherts of the Ridge and Valley variety, and the black opaque chert of unknown origin. Of these cherts the Flint River type is the most common, and it was utilized throughout prehistory. Its distinctive color, and ability to patinate, unlike the other materials, allows for easy identification. This particular chert patinates with regularity and antiquity, and its ability to do so has prompted Hurst and Kelly (1966) to utilize it in determining age estimates of artifacts. Michie (1973, 1977) has also noticed the extreme deterioration of early projectile points belonging to the Early Archaic and Paleo-Indian periods. Many of these points have decomposed so badly that the surface patina has nearly eroded away, while others display a white, chalky outer structure given easily to crumbling.

Not only does old, decomposed chert argue antiquity, but the heat treated Coastal Plain cherts also provide evidence for human occupation during the last phases of the Early Archaic and the phases of the Middle Archaic (Anderson 197). Heat treating of chert alters the crystalline structure and colors the surface to pink and red, in addition to producing a waxy luster. These heat treated cherts are unmistakable, and they occur with greatest frequency during the manufacture of Kirk points, especially the stemmed varieties. The Guilford and Morrow Mountain points of the Middle Archaic period may also be heat treated, but the incidence is much lower during the latter time period. By

Other:

- 6 fragments clear bottle glass
- 4 fragments conglomerated rock
- 1 small fossil

The above data does not necessarily lend itself to considerations of a base camp assemblage, but rather it suggests specialized behavioral activities. From previously excavated data in the area of Congaree Creek, base camps of both the Taylor site (Michie 1970) and the Manning site produce a more varied assemblage of lithic tools. Controlled excavations at the Taylor site have produced tool kits that include not only Dalton and Palmer points, but end-scrapers, pieces esquillées, fragments of adzes, graters, burins, and a variety of other unifacial tools. The excavations at the Manning site during the past several years have also yielded a similar tool assemblage in the lower levels of the site, associated with a Palmer component. These tools include end-scrapers, and a wide variety of unifacial tools, including a graver. Surface collections from the site parallel the excavated assemblage from the Taylor site. Such Early Archaic camps located outside of South Carolina have also yielded similar evidence for base camp activities. The Hardaway site in North Carolina (Coe 1964), Stanfield-Worley bluff shelter in Alabama, (DeJarnette, Kurjack and Cambron 1962), and the Theriault site (Brockington 1971) in Georgia produce similar tool kits that are base camp oriented. Other indications of base camps are the presence of large thinning flakes produced in the manufacture of specific tools and projectile points. The thinning of large preforms for the manufacture of projectile points usually produces large flakes, but when finished tools are resharpened, the resulting flakes are usually small.

A similar situation is also seen in other base camps of the Archaic period, where a variety of tools and food processing items are required for base camp operations. The later Archaic people made frequent use of large grinding stones and nutting stones, in addition to grooved axes (Coe 1964). It can be seen then, that a long-term occupation that was the site of diversified activities would yield diversified tools. Conversely, a short term occupation of only specialized activities would yield specialized tools. In the base camp, people are satisfying many basic requirements for existence: clothes are prepared from animal skins, probably the white-tailed deer. The preparation of hides requires the utilization of specific tools, such as skinning tools and defleshing tools. The maintenance of weapons and the manufacture of weapons require specialized tools also, such as steep edged scrapers and tools that involve the processing of wood and antler. That projectile points are actually "projectile points" seems uncertain, especially since experiments have demonstrated other utilization through wear pattern studies (Michie 1973). The serrated Dalton, Palmer, and Kirk points are given much easier to cutting tools than piercing, and Michie's (1973) experiment concerning butchering with replicated Dalton points, indicates that the sharp denticulates become round, contoured, and smooth after application to hide, flesh, and cartilage. The wear patterns on the replicated Daltons parallel patterns seen on the aboriginal Dalton. Laboratory and field examination of Palmer and Kirk points have also presented similar

patterns of wear. Further studies by Michie involving wear patterns on the projectile points have demonstrated that Savannah River Archaic points from a coastal shell midden were utilized in the production of antler projectile points and the manufacture of bone pins from the metapodial of white-tailed deer. Based on this evidence, then, it becomes apparent that what are assumed to be projectile points, are probably bifacial knives employed in specialized activities involving cutting.

These bifacial knives are manufactured from larger preforms, presumably at the base camp. During the reduction of the preform, large flakes are driven from the parent material. The relatively large flakes may be discarded, or they may be used for some specific function involving scraping or cutting. These flakes, known as utilized flakes, may appear in the base camp lithic debris. Other alterations of flakes may include the manufacture of graters, or burin-faceted tools, all of which may be base camp oriented in function.

The grinding stone and nutting stones of the Late Archaic are probably reflections of base camp functions also, where extracted fruits, such as hickory nuts and acorns were processed for human consumption. The grooved axe, also related to the Late Archaic, no doubt served the construction of architectural structures, and adzes were probably used in the alteration of wood for various functions.

The collection of lithic material from the Edenwood site does not indicate base camp oriented activities. Rather, the materials suggest some specialized activity occurring throughout most of the Archaic. The presence of bifacial knives, small thinning flakes, a small number of scrapers, a flake core, and fractured preforms, when looked at in comparison to base camp assemblages, seems to argue for specialized activities at the Edenwood site. Such data have generated the following hypotheses which may be tested against the excavated data: 1) the site represents behavior in the form of specialized activities, instead of diversified activities; 2) the activities may have been hunting/extraction of mammalian fauna; and 3) the site was occupied mainly by Archaic peoples, especially the Early Archaic. These testable hypotheses should add to the understanding of the site, and newly excavated materials should provide additional information in the form of: 1) the specific lithic materials being utilized during the various periods of the Archaic; 2) the spatial structure of the site; 3) the other artifact assemblages present, and the function of the assemblages in terms of human behavior.

Methods of Excavation

In order to implement the research strategies, the site was visited by the writer and Paul Brockington. The time constraints of the project and the size of the site demanded a sampling procedure that would assure

coverage of the potential data base. The original strategy involved the excavation of a large number of small test pits over the site. These pits, which were intended to be half-meter squares, seemed at first adequate for the testing; however, because of the relatively low density of cultural material, the strategy was revised to enlarge the pits to include a series of three foot squares. Additionally, if architectural features were present, a small test pit may not have been sufficient to monitor those features. Therefore, the larger test pit would provide additional data in the form of artifacts and lithic debitage, while offering an opportunity to find features.

In addition to the site, contiguous areas needed to be tested in order to understand the endangered area of the site. This universe to be sampled is an area of approximately five hundred square feet. To test the site, 42 pits, placed fifty feet apart, were slated to be excavated.

The removal of soil from each pit was to be done by the removal of six-inch arbitrary levels. If artifacts were encountered during the excavation, their depth and location would be recorded. The soil would be sifted through 1/4 inch screen, and the material bagged with appropriate labels. As a part of the research strategy, these methods would be altered to conform with soil differences, or geologic variations, if it was necessary. Considerations were given to using a smaller screen for the recovery of additional material, but time constraints argued against this. Smaller screens require additional time for the sifting of soil, especially if the soil is damp, and full of small rootlets. The quarter-inch screen, powered by a mechanical sifter, was appropriate for the project.

RESULTS OF THE EXCAVATION

Excavation

The excavation was carried out 9 days in March and May, 1978. During this time, 37 of the 42 squares chosen for sampling were excavated. The test pits indicated that considerable variation in the geologic structure exists within the site and that cultural materials vary in depth because of the geology. Further, the cultural material excavated parallels the surface collected materials. The excavated materials will be used to test the test implications of the hypotheses.

The sampling pits were surveyed the first field day, and elevations were taken for the construction of a topographic map (see Fig. 2). Wooden stakes were driven into the ground at each fifty foot interval, and their locations recorded. The excavation of each pit was on the southwest side of the stake, and the soil was removed as planned.

The excavation revealed that a portion of the site had been cultivated, and that the remaining portion had been subjected to intense disturbance. The cultivated area is located in the northeast sector of the site, west of the present dirt road. Plow scars in a north/south direction, approximately five to six inches deep, give evidence to cultivation. The plow zone, presently overgrown in weeds and small bushes, is composed of a dark, sandy loam, mixed with clay. The plow zone bottoms out on red clay, which contains small rounded pebbles. Also in this area, in the vicinity of squares 53, 54, 13, 14, 21 and 22, the base of the plow zone exhibits black stains resting on the red clay. This area lies in a slight depression which collects water, and remains wet for long periods of time. Presumably, the staining has resulted from organic matter precipitating from the plow zone and resting on the compact clay. In this specific area of the site, cultural material was minimal, and confined mostly to the plow zone; however, several thinning flakes were noted in the first inch of the clay. This portion, because of its dampness, was difficult to screen.

The southwestern side of the site differs considerably in geologic structure. For the most part, the area across the dirt road becomes increasingly sandy, and the depth of the sand increases. Several of the pits contained sand to 24-30 inches. The shallower ones contained sand 12 to 18 inches. In the sandy soils it was not uncommon to find cultural material extending to the bottom of each pit, and the deepest buried material was usually the oldest. While quartz, slate, and chert were found in the deepest arbitrary levels, chert tended to occur more frequently and with greater patination.

This side of the dirt road also produced appreciable evidence of land alteration. Throughout the site, small depressions are seen, some eight to 12 inches deep. Oblong in shape, the holes are thought

to represent the movement of heavy vehicles. Several other holes, much larger horizontally, indicate that soil has been moved over large areas approximately six to eight feet across. At one specific locus, the transported soil was several inches thick. At another locus, a large hole had been dug and filled with tin cans, wire, and burned logs. The profiles of other test pits indicated that a piece of machinery had been pulled through the sandy soil, presumably for the purpose of removing tree roots. It is possible that the disturbance occurred during the clearing of land and burning of logs for the right-of-way and erection of existing power lines. If these disturbances are related to power line construction, then, obviously, disturbances of such a destructive nature adversely affect potential archeological sites.

The undamaged areas indicate the presence of an original humus that varies from two to four inches deep; however, the staining of subsurface sands may appear to represent a thicker humus than is actually present. The sandy soils are coarse, loosely compacted, and contain many small rounded pebbles. Generally speaking, the pebbles increase in number with depth. Such conditions forestalled continued excavation of certain test pits.

That cultural material has been covered or buried by the coarse sands seems highly unlikely since the sands were probably laid during the Pliocene (see environmental section). Yet, thinning flakes and bifaces are found as deep as thirty inches in some areas. According to Donald Colquhoun, Department of Geology, University of South Carolina, (personal communication) colluvium may account for some deposition. Given that water and wind transported soils may have covered some material, it would not account for the sorted appearance of sands and pebbles in the test pit profiles. In test pit profiles, finer sands are found towards the surface and coarser sands near the bottom, with an increase in the occurrence of pebbles. The profiles suggest water laid deposits resulting from high velocity which would tend to sort the fluvial materials.

Because the site slopes several feet, one could accept the occurrence of some colluvially transported sands, especially the finer sands. It seems, however, that the migration of cultural materials through loosely compacted soil seems plausible. This gravity model suggests that artifacts will move downward through loose sands with the encouragement of soil mechanics. Once the artifact was dropped on the ground surface it was subjected to a number of environmental forces. It was covered by leaves, pushed around by roots in all directions, subjected to burrowing by numerous animals, and continuously affected by ant tunnels. Meanwhile, gravity acted upon it and pulled it downwards. Extreme precipitation and saturation of loose soils, paired with the continuous soil mechanics and gravity, probably encourage further migration of the artifact. The size of sand particles is no doubt another variable to be considered. In this consideration, smaller particles and more compact soils would impede migration, while the coarser and more loosely compact soils would foster migration.

In the Coastal Plain of South Carolina, several sandy sites have yielded early archeological materials from a deep context. These sites are most often located on sandy ridges and hills, and at least one site is located a hundred feet above the nearest flow of water. The Thom's Creek site (Michie 1969; Trinkley 1975) is sandy and has produced early-Archaic assemblages at 36 inches below surface. The Manning site (notes on file, Institute of Archeology and Anthropology) has also yielded early Archaic points and tools at 22 inches, and the Buycke's Bluff site (notes on file at the Institute of Archeology and Anthropology) has demonstrated early Archaic artifacts may be found at 37 inches. This site is located on a terrace high above the Congaree River. Further evidence is found at the Cal Smoak site (Lee and Parler 1972) with Early Archaic assemblages at 30 inches. Whenever sand is part of a site's matrix, a relative depth is consistently monitored for early lithic assemblages. However, whenever a clay constituent is involved, relative depths are appreciably more shallow. This is especially true in the region of the Piedmont where clay constitutes the majority of soils. The Windy Ridge site (House and Wogaman 1978) is situated on a relatively high clay terrace that was once cultivated, but was allowed to become fallow and support small pines. The excavations revealed that cultural material was confined mainly to the plow zone, and that only a small minority of artifacts had drifted into the subsurface clay some six to eight inches from the surface. However, the situation changes whenever sites are involved with fluvial action from rivers. In such situations, flood deposited sediments may reach extreme depths, thus sealing off and stratifying various cultural occupation. Examples of these sites would be the Gaston and Doerschuk sites in North Carolina (Coe 1964).

The gravity model offered here precludes sediment accumulative sites, but confines itself to those sites located on ridge tops composed of sand.

The drifting of cultural materials through sand is fairly consistent. While the Early Archaic materials exist at 20 to 30 inch depths, Middle Archaic assemblages are noted to appear at approximately 15 - 18 inches, while later assemblages appear in the upper levels. The depths of specific artifacts appear to vary, and the variance is probably related to the coarseness of the sand particles. Another variable would certainly be the appearance of compact soils in the lower levels of the sites. This has been true in the sites mentioned above.

Lithic Materials

The results of the excavation produced lithic materials and ceramics. For the most part, the lithics parallel closely the materials recovered by Smith (1977) and Wogaman, House and Goodyear (1976), but the ceramics appeared without being represented in the former collections. The lithic materials include fire-cracked rock, chunks, thinning flakes, bifaces, one end-scraper, and miscellaneous artifacts.

Fire-cracked Rock. Three hundred and sixty-two fragments of fire-cracked quartz weighing 5572.6 grams were found during the excavation. The fragments, ranging from small to large, may not all be the result of fire-cracking, but may have resulted from collapsed hammerstones. The fracture planes produced by shattered hammerstones resemble those produced by fire-cracking, and while some fire-cracked rock may change color, not all will yield a reddened hue (House and Ballenger 1976). At least one shattered piece of quartz from the site has indicated appreciable wear on the edge, suggesting use as a hammerstone (Fig. 5). Exactly how many pieces reflect fire-cracking, and how many have resulted from collapsed hammerstones is uncertain. More than likely, hammerstones served dual functions: reducing and resharpening bifaces, in addition to heating water. But from the data at hand, such functions are difficult to determine. The cracked quartz in its original form was undoubtedly medium-sized cobbles. The fractures are both smooth and rough, some with a reddish color, and some with sharp edges. Presently, no definitive explanations can be offered for their function.

Projectile Points/Knives. Twelve projectile points or fragments of points were found (Table 3). Five of the points were manufactured from quartz and from Coastal Plain chert (Table 4).

The identifiable point types are represented by the Palmer corner-notched (Coe 1964) and the Kirk stemmed (Coe 1964). The remaining points are fragmentary, and although difficult to identify, they may represent components of the Archaic. The fragmentary points made from Coastal Plain chert all appear to be heat treated, which would suggest an affiliation with the Kirk series, Guilford, or Morrow Mountain points. The quartz points, two of which appear to represent preforms, are too fragmentary to offer considerations of specific types. Additionally, as it was pointed out earlier, quartz is a poor indicator of time periods. The metric attributes of the points appear in Table 3. Table 4 indicates proveniences of the excavated projectile points. The points described below are shown in Figure 6.

Point A. Palmer point manufactured from Coastal Plain chert. Heavily ground along the base and lightly smoothed in the notches. The chert is moderately patinated and white in color. The lateral edges are broad and convex, suggesting a minimum of resharpening since its original manufacture.

Point B. Kirk-stemmed point manufactured from heat-treated Coastal Plain chert. The point, red and cream colored, exhibits a dull lustre characteristic of heat-treating. Although statistical studies do not exist concerning the attributes of South Carolina point types, the blade length of Kirks is generally much longer. The reduced length of this Kirk suggests considerable resharpening since original manufacture.

Point C. Midsection of a heat-treated, Coastal Plain chert point. Thermal alteration of this chert suggests an association with Kirk, Morrow Mountain, or Guilford. The chert displays a dull luster, being a combination of pink, red and cream colored.

Point D. Mid-section of a quartz point. Cultural affiliation is unknown.

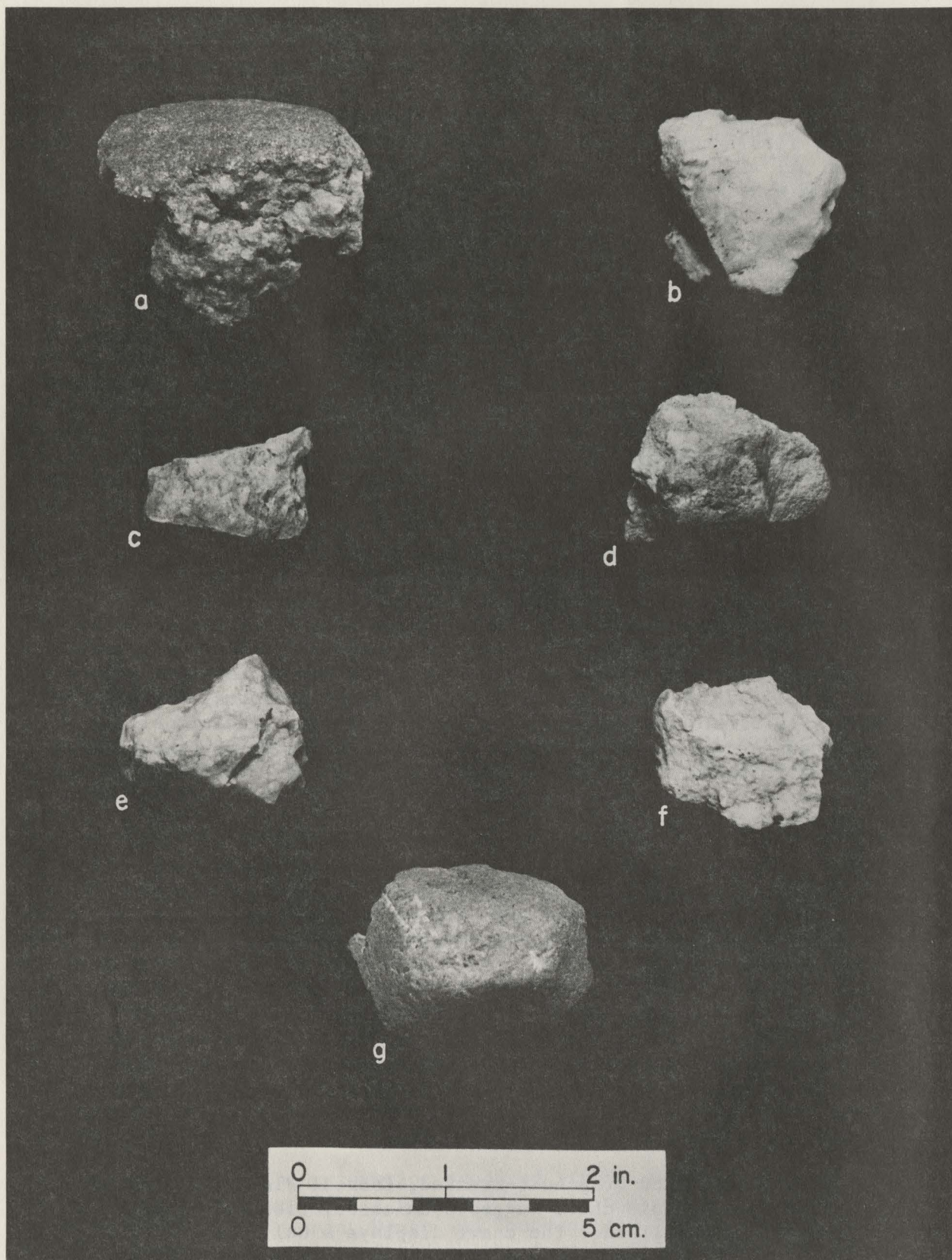
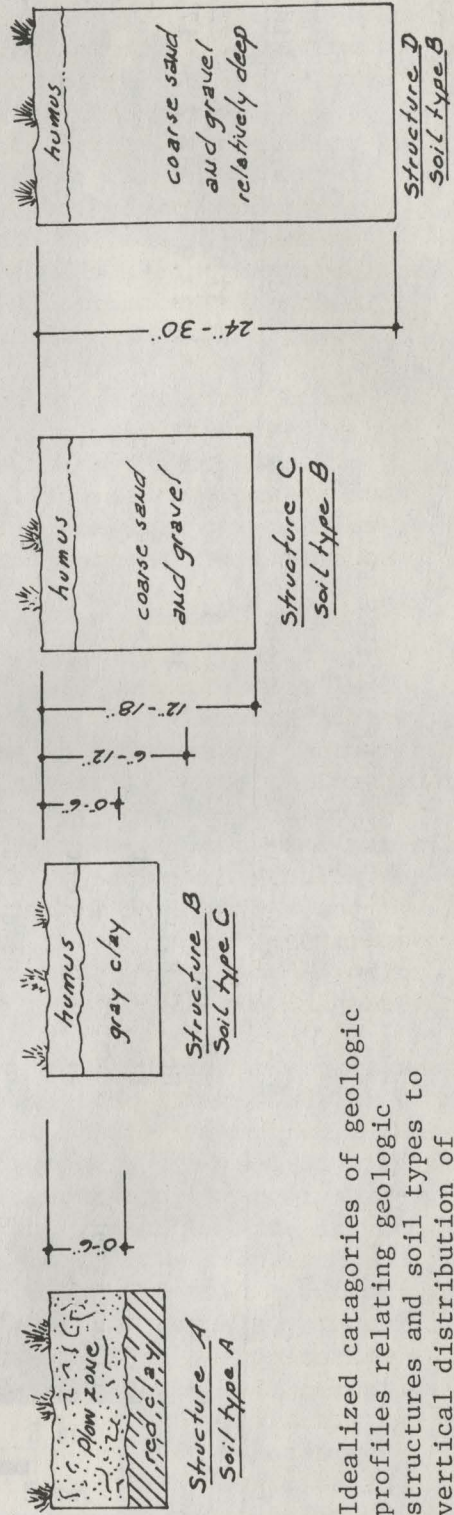


FIGURE 5. Shattered quartz fragments considered to be fire-cracked rock or collapsed hammerstones. a, b, c, d, e and f represent cracked rock, g represents worn edge of a hammerstone. Note similarities.

TABLE 3

PROVENIENCE LOCATIONS OF PROJECTILE POINTS

Point	Provenience Location	Depth	Geologic Structure	Soil Type
A	29	20"	D	B
B	49	0-6"	B	C
C	30	6-12"	D	B
D	30	6-12"	D	B
E	30	6-12"	D	B
F	53	0-6"	A	A
G	28	6-12"	C	B
H	20	6-12"	C	B
I	38	12-18"	C	B
J	11	0-6"	C	B
K	54	0-6"	A	A
L	11	0-6"	C	B



Idealized categories of geologic profiles relating geologic structures and soil types to vertical distribution of projectile points.

TABLE 4

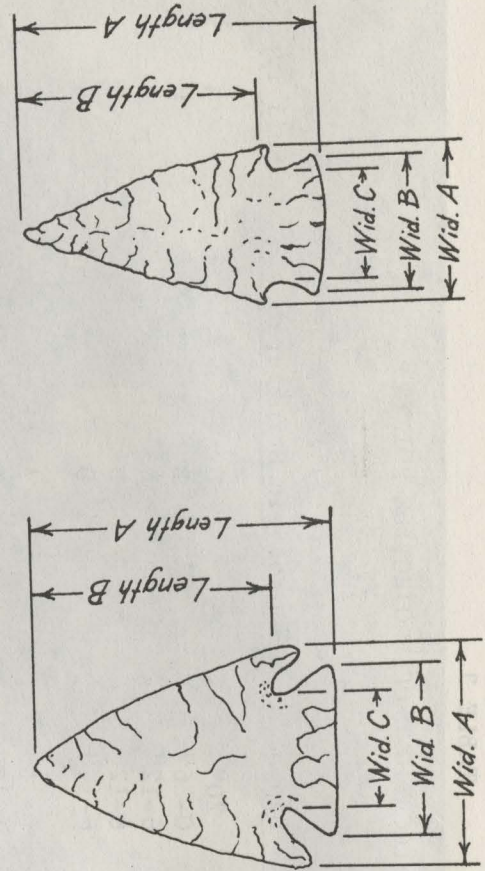
METRIC ATTRIBUTES OF PROJECTILE POINTS

Point	Type	Lithic materials	Length A	Length B	Wid. A	Wid. B	Wid. C	T
A	Palmer	C.P. chert	49.3	37.8	37.0	28.2	22.4	7.6
B	Kirk stemmed	Ht., C.P. chert	34.1	26.2	23.9	18.2	17.1	8.4
C	Kirk (?)	Ht., C.P. chert	-	-	-	-	-	9.0
D	unidentifiable	Quartz	-	-	-	-	-	8.9
E	Kirk (?)	Ht., C.P. chert	-	-	-	-	-	-
F	Kirk stemmed	Ht., C.P. chert	-	-	-	-	-	-
G	Palmer (?)	Ht., C.P. chert	-	-	-	-	-	9.3
H	unidentifiable	Quartz	-	-	-	-	-	-
I	Kirk (?)	Ht., C.P. chert	-	-	-	-	-	-
J	unidentifiable	Quartz	-	-	-	-	-	-
K	unidentifiable	Quartz	-	-	-	-	-	-
L	unidentifiable	Quartz	-	-	-	-	-	-

Abbreviation Legend:

- C.P. - Coastal Plain
- Ht. - Heat-treated
- Wid. - Width
- T. - Thickness

All measurements in millimeters



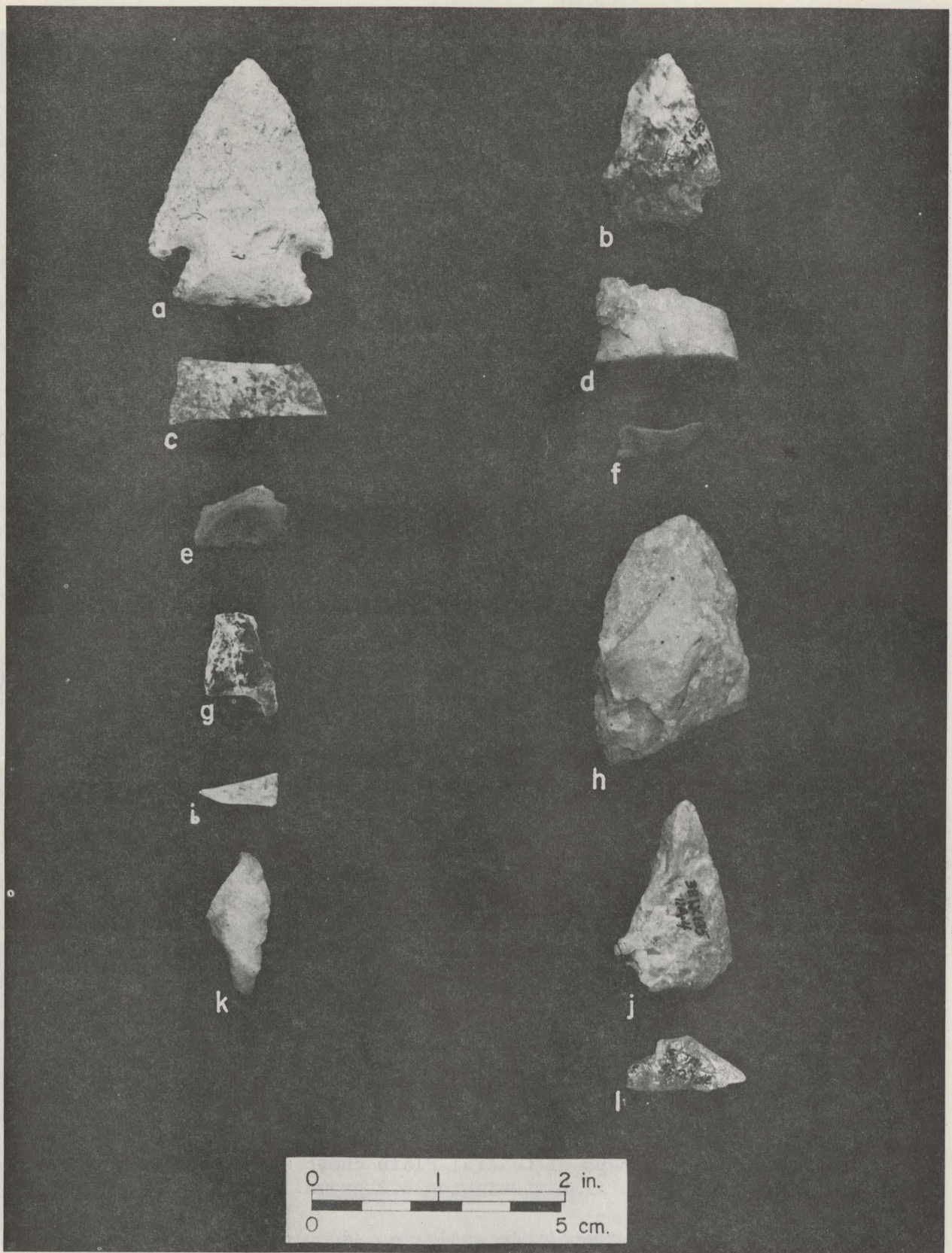


FIGURE 6. Projectile points excavated from 38LX135.

Point E. Basal portion of heat-treated, Coastal Plain chert point. Greenish gray in color, the basal portion is too fragmented to allow identification of point type.

Point F. The basal portion of a Kirk-stemmed point, dark red in color with a bright luster. Cultural affiliation is the latter portion of the Early Archaic.

Point G. Mid-section of either Palmer or Kirk point. Heat-treated, Coastal Plain chert with dull luster, moderately patinated, and whitish green in color. In cross section, the point is diamond shaped, indicating extreme lateral reduction through resharpener. This type of reduction, with controlled pressure flaking, is commonly seen in Palmer points, but it does not necessarily preclude one of the Kirk types. Cultural affiliation is Early Archaic.

Point H. A relatively thick portion of either the proximal or distal portion of a quartz preform. Cultural affiliation is unknown.

Point I. Partial mid-section of heat-treated, Coastal Plain chert point. Red and cream colored with dull luster. Cultural affiliation may be either Middle or Early Archaic.

Point J. Lateral portion of quartz preform, relatively thick. Cultural affiliation is unknown.

Point K. Small portion of distal end of quartz point. Cultural affiliation is unknown.

Point L. Small fragment of lateral portion of quartz point. Cultural association is unknown.

Chunks of Quartz. Fifteen chunks of quartz were found, totaling 74.3 grams. The chunks, characterized as thick angular pieces of debitage without discernible striking platforms, were probably produced when the parent material was being reduced in preform manufacture. As House and Ballenger (1976) have pointed out, the chunks resemble flake cores, but lack the characteristic flake scars (Fig. 7).

This category of debitage occurs mainly in the upper zone of the soil, but several chunks were found lower.

Flakes. Three hundred and fifty-three flakes were found, totaling 314.4 grams. The greatest number of flakes were of quartz--233 flakes weighing 216.7 grams. Slate is represented by 44 flakes weighing 53.8 grams. There were 71 flakes of Coastal Plain chert weighing 37.7 grams, and 5 silicious sandstone flakes weighing 6.2 grams.

At the beginning of the lithic analysis, adequate measurements of all the lithic raw materials were to be provided, but time constraints prohibited such an approach. A random sampling was also considered, but the final analysis only allowed a chance measurement and observation

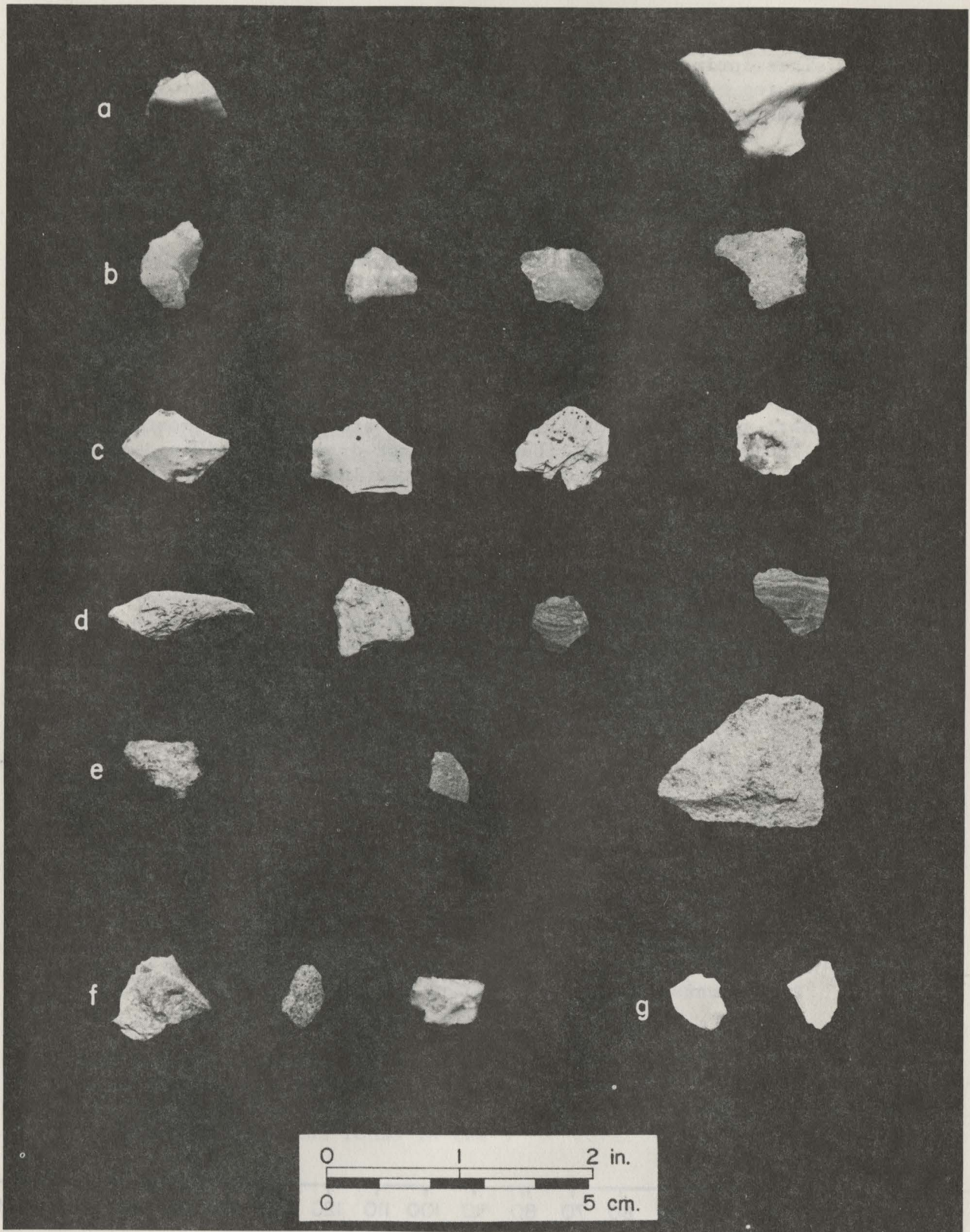


FIGURE 7. Lithic materials excavated from 38LX135. a, chunks of quartz; b, quartz thinning flakes; c, chert thinning flakes; d, slate thinning flakes; e, sandstone flakes; f and g, comparison of heat-treated chert with old heavily patinated chert.

of flake sizes during the identification of raw materials. The discussion of the following categories will include the chance measurements and the visual observations.

The quartz flakes are relatively consistent in texture and color, appearing for the most part as white, while semi-clear flakes are infrequent. The flakes occurred throughout the excavation in all levels.

The Coastal Plain chert flakes vary considerably in color, and are either heat treated or patinated. In heat treating, the colors range from blue to red while displaying the characteristic luster. Some flakes may be multi-colored. An attempt was made to separate the flakes on the basis of color, but while some categories seemed valid, others seemed questionable.

The chert flakes are small (5-15 mm) and are found over most of the site. Their vertical distributions do not draw any striking patterns, but, rather, they seem to occur throughout the levels whenever they are present. In at least one test pit, however, the lower levels contained the greatest number (Fig. 8).

The slate flakes also exhibit variation. Some of them are weathered, causing patination that reflects brown, tan, buff, and a variety of other similar colors. Others are less patinated and exhibit colors such as greenish-gray, gray, and black. Banded slate is also present, but examples are limited. These variations of slate may reflect different time periods, but presently the literature has not dealt with such differences.

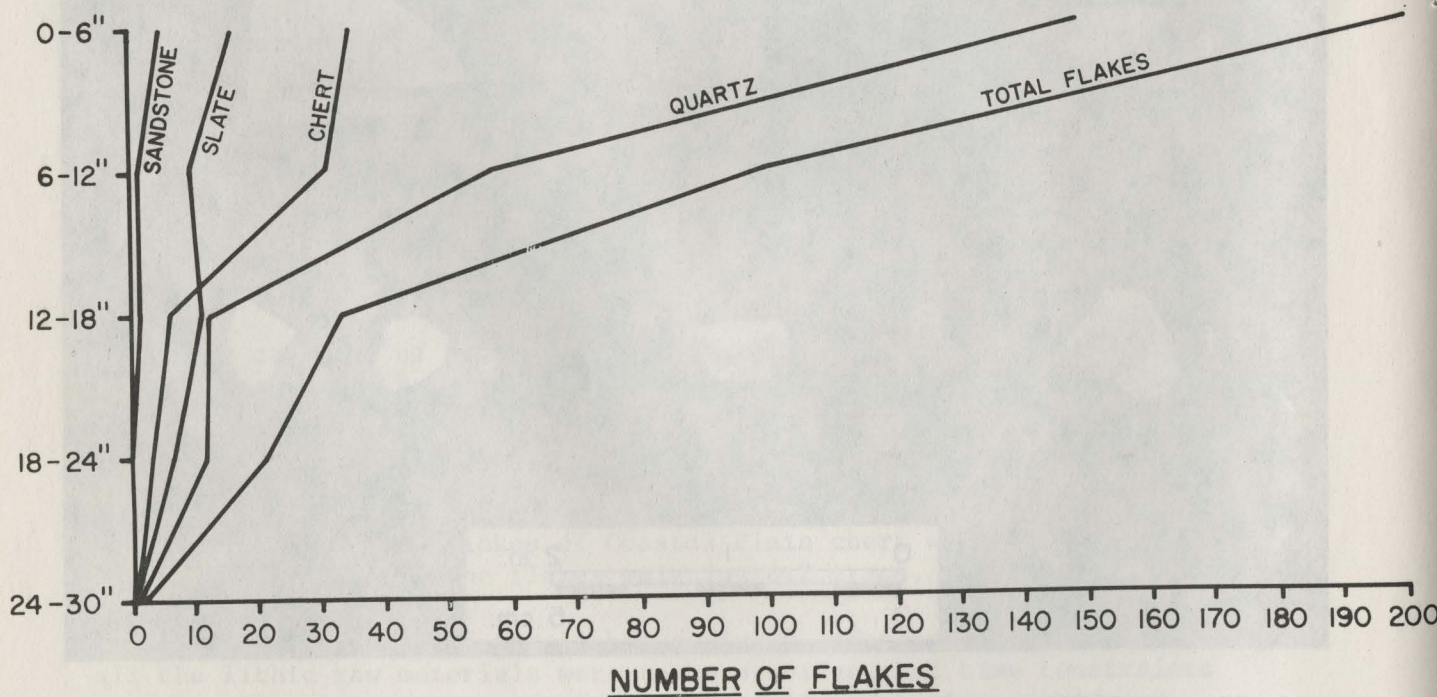


FIGURE 8. Frequency of thinning flakes in relation to levels.

With the exception of a single, large basalt-like flake, the slate flakes are relatively small (5-15 mm). When the flakes occur, they are usually found in all levels.

The remaining category represents silicious sandstone. This material occurs infrequently at the site, but it does occur as small flakes. One large flake, however, was found. Its vertical distribution, like chert, slate, and quartz, is not confined to any specific level.

Tools. Three unifacial tools were excavated, (Fig. 9d-f). A steep-angle end-scrapers, represented by the distal portion, and manufactured from a highly silicious black slate, displays slight step-fracturing on the bit. The tool appears to have been made from a blade-like flake, as it exhibits two narrow dorsal ridges extending in a proximal/distal direction. The ventral surface is flat, and presents no evidence of alteration. The bit angle measures 71° , and the tool is 7.1 mm thick at the bit, and 21.4 mm wide.

The second tool is manufactured from fossiliferous chert, and appears to have been made on a flake. The ventral surface is unaltered, but small flake scars are located primarily along one side of the dorsal surface. Secondary retouch occurs along the contiguous edge, but with the high degree of patination, the extent of retouch is difficult to determine. The tool is roughly square, being 17.7 mm to 19.2 mm, and 7.2 mm thick. The primary edge angle is low, expressing 56° . Because of its smallness, the tool may represent an exhausted end-scrapers in the final phase of utilization. Its deterioration seems to preclude any definitive wear patterns.

The remaining tool is manufactured from slate, which has patinated a buff color. Although it appears to be unifacial, a flake scar bisects the ventral surface. This scar apparently represents the removal of a flake prior to manufacture of the tool. Triangular in shape, two edges exhibit flake removal, while the third edge is steep, as a result of a break. The break may have resulted from utilization. The leading edge displays no appreciable wear, but the smaller secondary edge exhibits slight step-fracturing. The tool is 29.6 mm long, 19.3 mm wide, and 10.1 mm thick, with the primary edge angle measuring 59° and the secondary edge angle measuring 65° .

The vertical positions of these tools fail to yield any associated pattern of depth. The first tool was found in the 6"-12" level of one test pit; the second tool was found in the 12"-18" level of another test pit; and the last tool was found in the 0"-6" level of yet another test pit.

Miscellaneous Lithic Materials (Fig. 9). These miscellaneous materials would include a large quartzite rock (450.0 grams); a large quartzite fragment (160.0 grams); 2 fragments of an unidentifiable rock (29.6 grams and 3.3 grams); fragment of unidentifiable rock with polished surface exhibiting tooling marks--possibly atlatl weight fragment (5.9 grams); 3 fragments of steatite vessels weighing a total of 41.1 grams; fragment of a quartz hammerstone weighing 32.1 grams; and a host of recently deposited historic artifacts such as nails, beer bottle fragments, dish fragments, fragments of glass, dolls, plastic hose and containers. These objects have all been deposited since the clearing of the forest for the power line.

No recognizable historic artifacts relating to the 18th or 19th century were found. All objects found relate to the 20th century and the development of the power line. The area is presently strewn with garbage.

Pottery

Sixty-one pottery sherds were found, weighing 218.6 grams. Without exception, all the sherds are plain and sand-tempered (Fig. 9g). The size of the sand inclusions ranges from 1 mm to 7 mm, and the amount of inclusions varies considerably. Another characteristic, occurring occasionally, is the presence of brushing marks on the interior, exterior, or both surfaces. At least one sherd exhibits sherd-temper with the inclusions of sand. Whether the sand was added to clay, or the clay source contained sand particles is presently unknown.

The sherds are relatively flat, suggesting rather large vessels, and the presence of one rim sherd suggests vessels with straight sides; however, with only one rim sherd and the small number of body sherds, the ceramic form is difficult to determine. Several of the sherds display coil fractures.

The sherds range from 5.0 mm to 11.7 mm, with an average thickness of 7.5 mm. The sherds range in width from 7 mm to 52 mm, yielding an average of 23.6 mm. The average thickness and width of the sherds are little affected by eliminating the extremes, indicating there is a fairly constant range of size.

In the first level of the combined test pits (0"-6"), the sherds are greatest in number; they begin to decrease in the second level (6"-12"), and continue to decline with increasing depth. The fourth level (18"-24") of the pits, which were excavated to this depth, produced only one plain, sand-tempered sherd (Fig. 10). The fact that pottery sherds occur in the lower levels with earlier lithic artifacts suggests again that cultural material may be migrating through the soil.

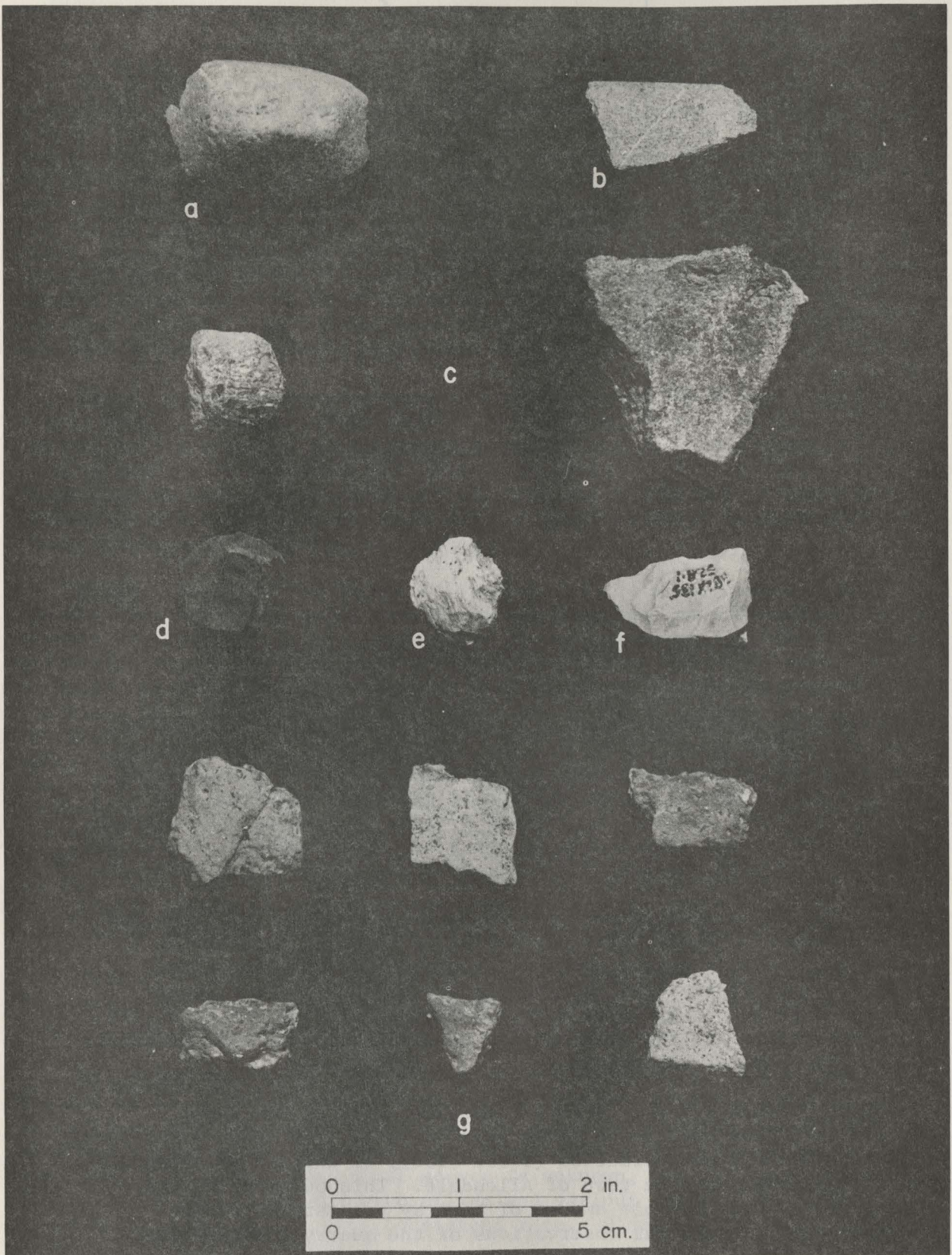


FIGURE 9. a, hammerstone; b, atlatl fragment; c, steatite fragment; d, e, and f, tools; and g, pottery.

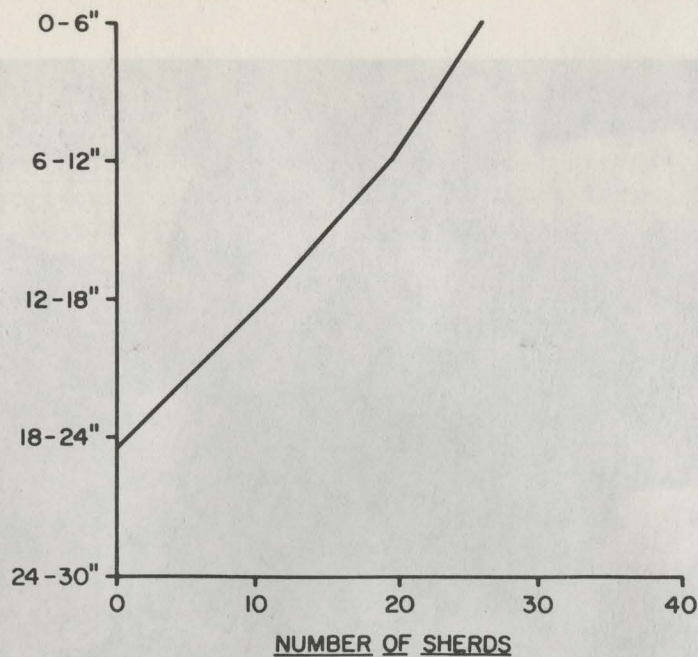


FIGURE 10

Possible Sources for Lithic Raw Materials

With the exception of quartz, the other lithic materials are not native to central South Carolina. The cherts, slates, and silicious sandstones were transported into the cultural system at the Edenwood site, but their mode of transportation is presently unknown. The materials may have arrived via a trade system, or perhaps the materials were procured by the inhabitants of the site. This section, therefore, will deal only with the quarry locations of the specific raw materials.

Quartz. This igneous material is common along the Fall Line and in the Piedmont of South Carolina, and it is found in terrestrial outcroppings of vein quartz and fully rounded fluviially deposited cobbles. Water transported cobbles occur frequently in the nearby Congaree River and other large rivers in the state. Quartz is easily obtained locally, and the frequency of quartz within the site certainly reflects its ease of procurement.

Chert. Chert probably occurs throughout most of the lower Coastal Plain from the Santee River into Georgia. The chert outcropping, termed the Flint River Formation (Cooke 1936), is exposed in Allendale County, just south of the town of Allendale. This outcropping was utilized for a considerable amount of time by prehistoric people (Stoltman 1974). Personal observations of the quarry indicate that several cultivated acres adjacent to the site are littered with debitage, while the quarry itself is littered with large thinning flakes, chunks, and various forms of waste. The chert is usually yellow and orange in color, with occasional pieces of buff and white.

The Allendale quarry, with its extensive debitage, must have served many aboriginal communities for thousands of years, but the quarry is not unique on the Coastal Plain. In the area of the Edisto River, near Springfield, South Carolina, debitage and projectile points manufactured from different cherts have been observed. These cherts are blue and white, and seem to be restricted to that area. In the lower portion of Lake Marion there is apparently another outcropping of chert, producing different colors of chert. This chert is gray, and contains numerous pocket inclusions of clay and various impurities. About eighteen miles south of Columbia, chert may be seen eroding from the face of a bluff on the Congaree River. The fossiliferous chert was used by the prehistoric people who occupied the bluff top.

Chert, therefore, may have several origins, but chert from each origin seems different in composition and texture. The chert that appears at the Edenwood site closely resembles the Allendale chert. Several sources of Allendale-like chert may exist within the Coastal Plain, but without thin sections of material and microscopic studies of forams and other microscopic skeletons and distinguishing inclusions, those cherts will be difficult to separate.

Slate. Based on the degree of patination, the slates present at the site may have originated from different quarries, as patination denotes differences in the composition of the raw material. The silicified slates are metamorphosed shales formed in the slate belt of South Carolina and North Carolina as a result of thermal baking. The slate belt is extensive and it could easily yield a number of procurement centers. One of the largest known quarries is located on Morrow Mountain, adjacent to the Pee Dee River in North Carolina. There are several large sites in the immediate area that involved the production of lithic artifacts, especially the Hardaway site (Coe 1964). The slate was obviously transported down the Pee Dee River to the areas of Marion and Georgetown Counties, as evidenced by its occurrence in these Coastal Plain regions (Institute of Archeology and Anthropology sites collections). slates were being transported across the South Carolina Piedmont to other large drainage systems such as the Broad, Saluda, and Congaree Rivers.

Presently, the actual sources utilized by the indigenous Americans is poorly understood, and without geologic studies oriented towards chemical analysis, those sources will remain a mystery.

Siliceous Sandstone. The origin of this material is in the lower Coastal Plain, probably in the vicinity of Berkeley County. Artifact collections from the areas of Lake Marion and Lake Moultrie contain a high percentage of the material, and it was apparently utilized for a long period of time. The actual source is unknown, but its composition is basically sand, cemented with silica and various impurities causing it to deteriorate at a fairly consistent rate. Older artifacts become friable with antiquity.

Steatite. Several steatite quarries are known from the Piedmont of the state (Lowman and Wheatley 1970), but it is difficult to determine if these quarries were used in the procurement of the steatite found at Edenwood. As with the other lithic materials, lithological studies are severely needed to determine the sources utilized by the Indian.

With the exception of quartz, the lithic raw materials employed at the site were probably imported from various sources in the Coastal Plain and Piedmont. The routes by which the materials arrived, the cultural factors involved in transportation, and the means by which those materials arrived are presently unknown.

Material Culture Distributions

Five categories of artifacts were chosen to describe the horizontal distributions of material culture. These categories represent patterning of: 1) fire-cracked rock, 2) quartz flakes, 3) slate flakes, 4) chert flakes, and 5) pottery sherds. Within these classes of debitage, specific artifactual items, such as projectile points, bifaces, steatite fragments, lithic chunks, and end-scrapers, are placed in an associated category.

Ideally, some of the categories should be broken down into smaller units. While slate represents one class of debitage, it would seem more meaningful to separate gray slate, tan slate, brown slate, banded slate, and black slate flakes, but within these more specific groups, variation still exists, and the variation appears to span a spectrum of coloration and deterioration ranging from light tan to black. Texture is also highly variable. Until these flakes can be separated into meaningful groups representing time and space, and associated with diagnostic lithic assemblages, they must remain in a general category.

Chert debitage is also grouped together for the same reason as slate. Although the category contains multi-colored heat-treated flakes and extremely deteriorated flakes, there is also a spectrum ranging from luster to patination.

Quartz and pottery are grouped more easily. The quartz flakes probably represent many different human occupations through time and space, but such debitage and fire-cracked rock offer little difference in patination and color differentiation. The pottery sherds are all plain sand-tempered, offering an exclusive category.

In order to express horizontal spatial patterning of these artifact categories (Binford 1972), their densities were interpolated by counting the number of fire-cracked rock, flakes, and pot sherds represented in each provenience. Additionally, the weights attained from

larger flakes may tend to distort a pattern. If larger pot sherds, quartz chunks, and flakes occur on the periphery of a scatter, then the scatter will appear to be denser, indicating increased human activity along the edges. Four or five quartz chunks, if reduced into thinning flakes, may represent more than fifty flakes, thereby seriously deforming a more significant pattern. The actual number of reduction flakes and pottery, and other artifact classes, may represent a more responsible model of spatial activity. These interpolations of general densities are seen in Figures 11 through 15.

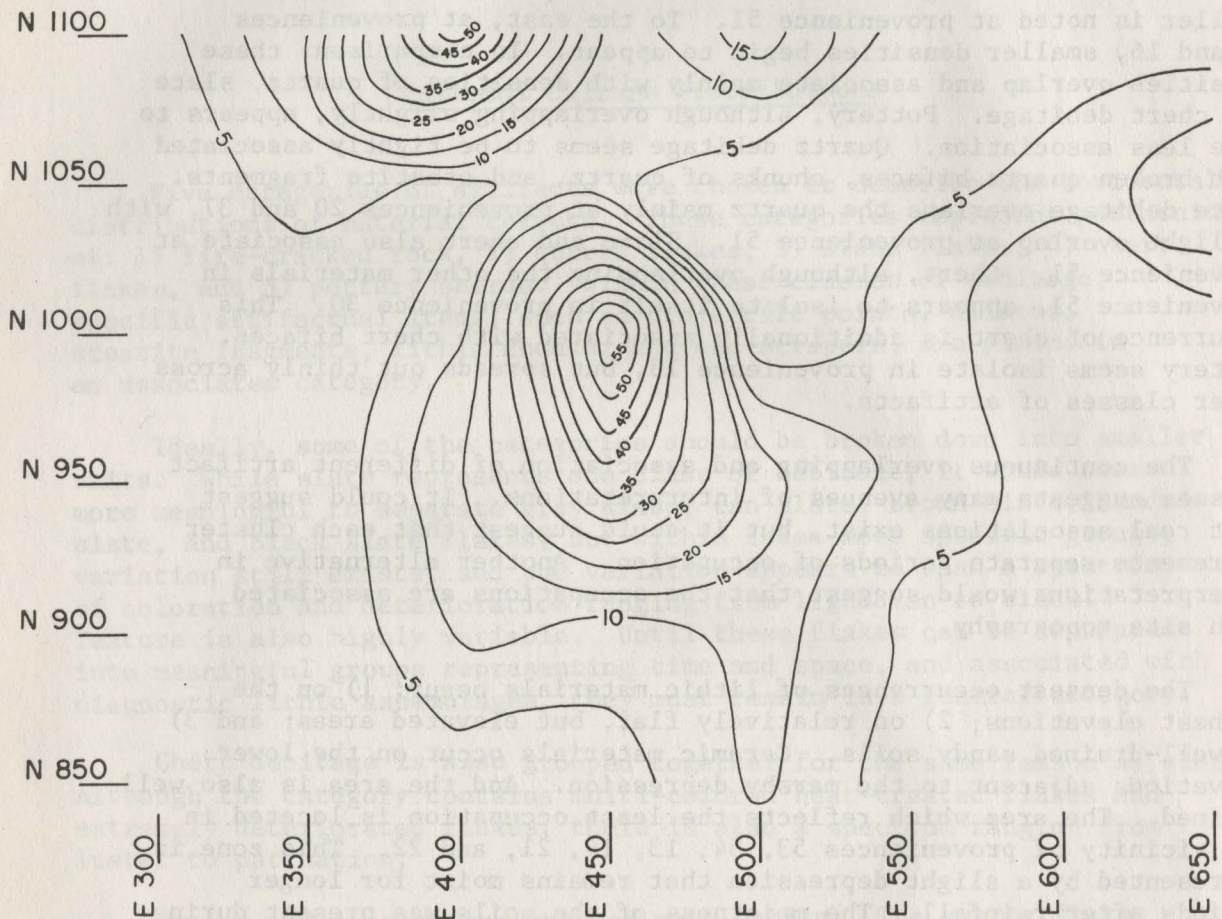
Fire-cracked rock (quartz cobbles) seems to cluster at two points on the site. The largest cluster is seen at provenience 20, while the smaller is noted at provenience 51. To the east, at proveniences 53 and 16, smaller densities begin to appear. In comparison, these densities overlap and associate mainly with densities of quartz, slate and chert debitage. Pottery, although overlapping slightly, appears to have less association. Quartz debitage seems to be tightly associated with broken quartz bifaces, chunks of quartz, and steatite fragments. Slate debitage overlaps the quartz mainly at proveniences 20 and 37, with a slight overlap at provenience 51. Slate and chert also associate at provenience 51. Chert, although overlapping the other materials in provenience 51, appears to isolate itself in provenience 30. This occurrence of chert is additionally associated with chert bifaces. Pottery seems isolate in provenience 18, but spreads out thinly across other classes of artifacts.

The continuous overlapping and association of different artifact classes suggests many avenues of interpretations. It could suggest that real associations exist, but it could suggest that each cluster represents separate periods of occupation. Another alternative in interpretations would suggest that the occupations are associated with site topography.

The densest occurrences of lithic materials occur: 1) on the highest elevations; 2) on relatively flat, but elevated areas; and 3) on well-drained sandy soils. Ceramic materials occur on the lower elevations adjacent to the marshy depression. And the area is also well-drained. The area which reflects the least occupation is located in the vicinity of proveniences 53, 54, 13, 14, 21, and 22. This zone is represented by a slight depression that remains moist for longer periods after rainfall. The moistness of the soils was present during excavation, and it presented difficulty in screening. This surface soil is relatively dark sandy/clay that rests on a red clay matrix. At the point of nonconformity, the base of the upper horizon contains a thin lens of black soil thought to represent the furthest migration (some six to eight inches from the surface) of soil percipitates. The compact red clay retards further migration.

Although material culture was found in this area, the amount of material was comparatively infrequent. The greatest densities occur on the sandy soils.

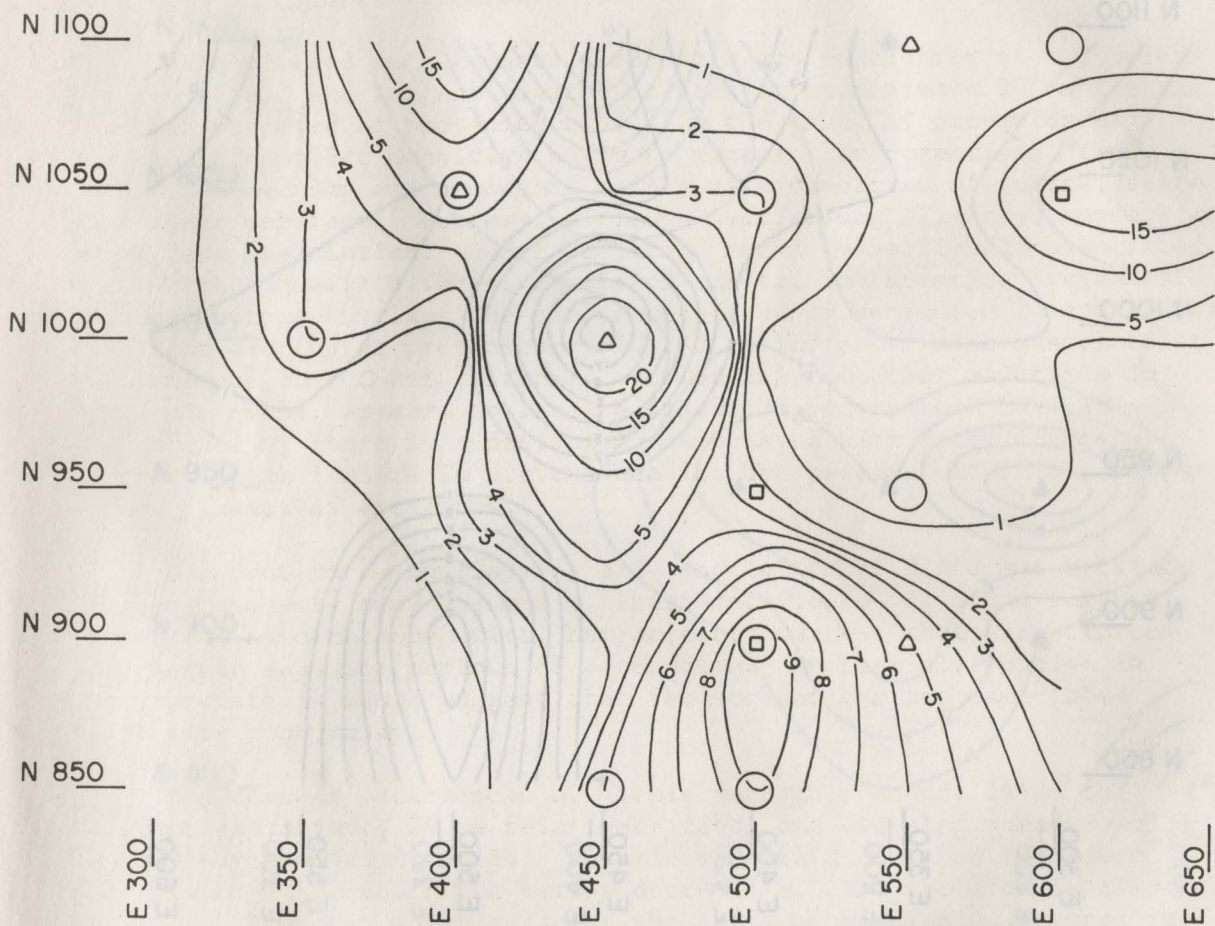
If the aboriginal was selecting high elevations, flat areas, and well-drained soils for occupation, then during various periods of time, people would reoccupy similar areas. If this proposition is correct, then an explanation is found to explain the overlap and association of cultural material. Also, if resource procurement was variable during time, people may occupy areas closer to the resource, a possible explanation for the ceramic pattern.



INTERPOLATED DENSITY OF
FIRE-CRACKED ROCK

I.A.A.-168-(12/78)-ERD

FIGURE 11



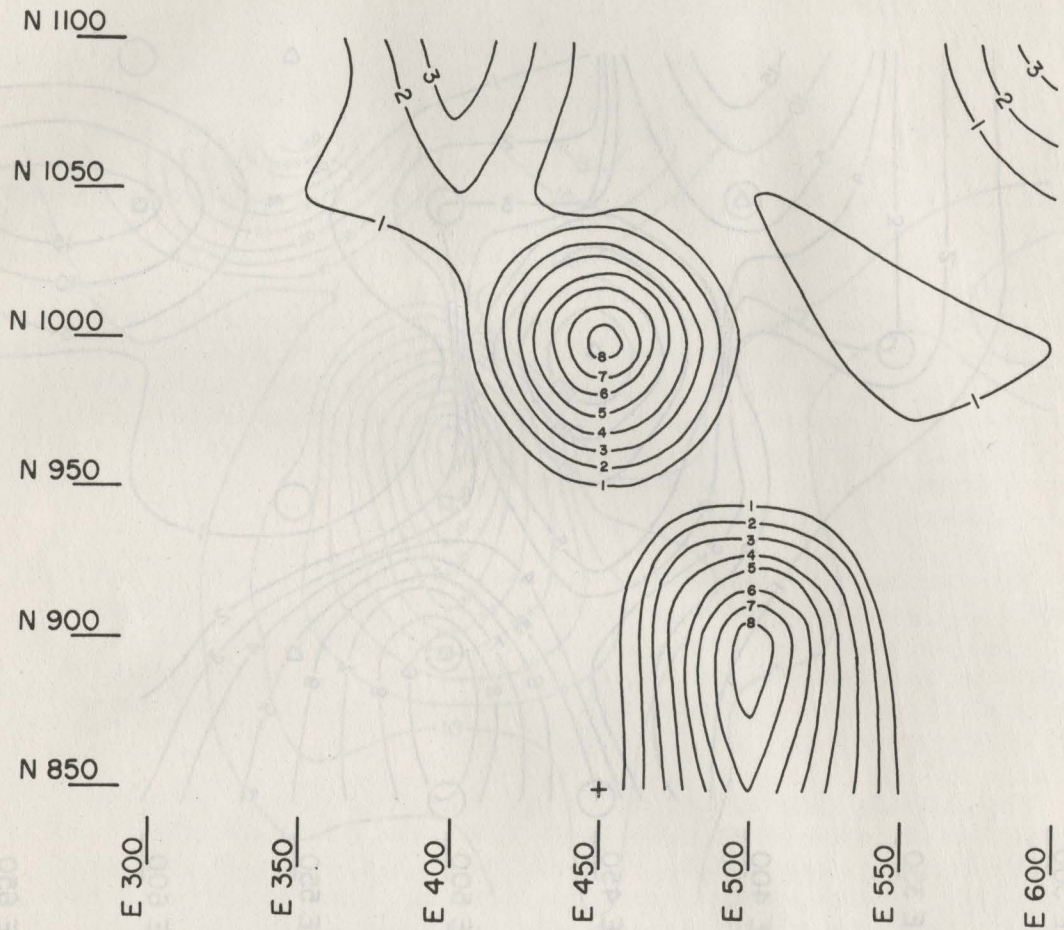
INTERPOLATED DENSITY OF
QUARTZ FLAKES

- △ POINTS OF QUARTZ
- CHUNKS OF QUARTZ
- STEATITE

I.A.A.-168-(12/78)-ERP

FIGURE 12

If the floor had been made of a different material, the people would have used different tools for occupation, then during the last period of time, people would have used similar tools. If this period of time, the people would have used a different material. Also, if the people had used a different material, the people would have used a different material. This is a possible explanation for the situation.

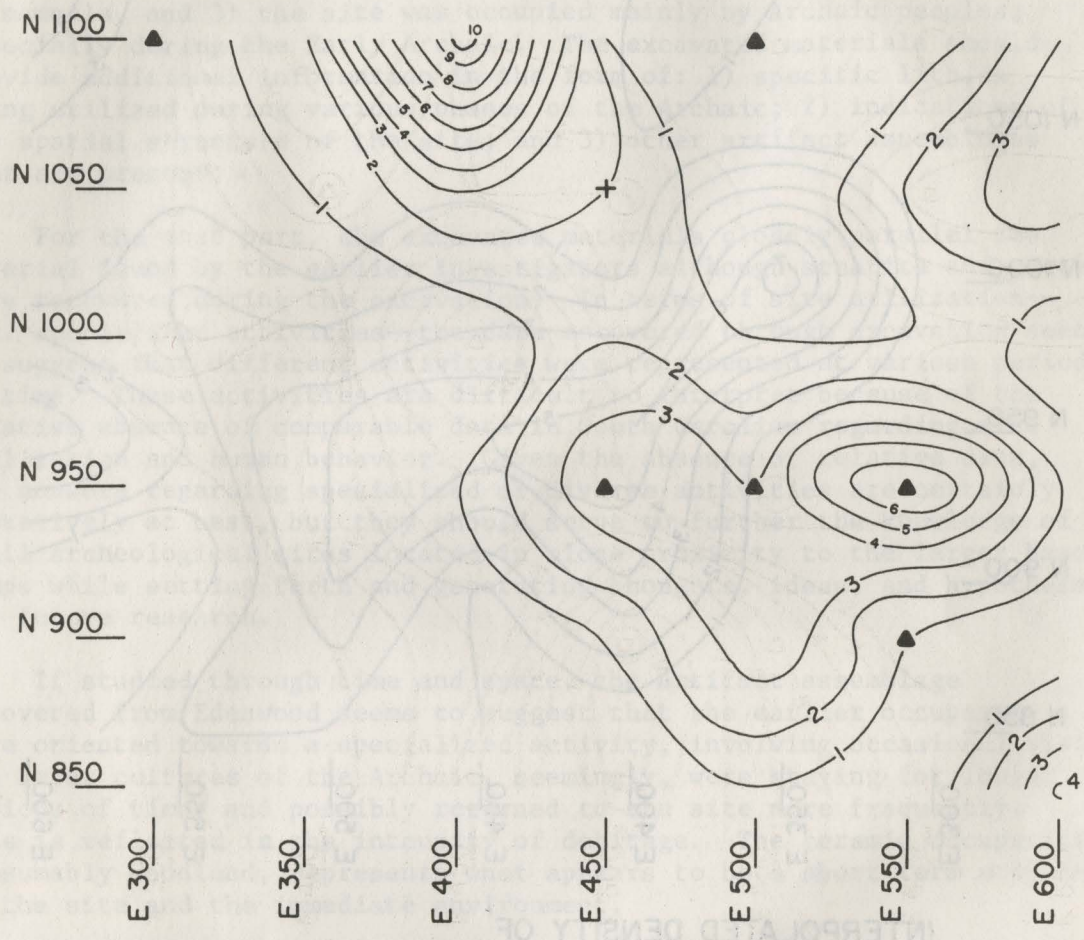


INTERPOLATED DENSITY OF ALL SLATE FLAKES

+ END SCRAPER

I.A.A.-168-(12/78)-ERY

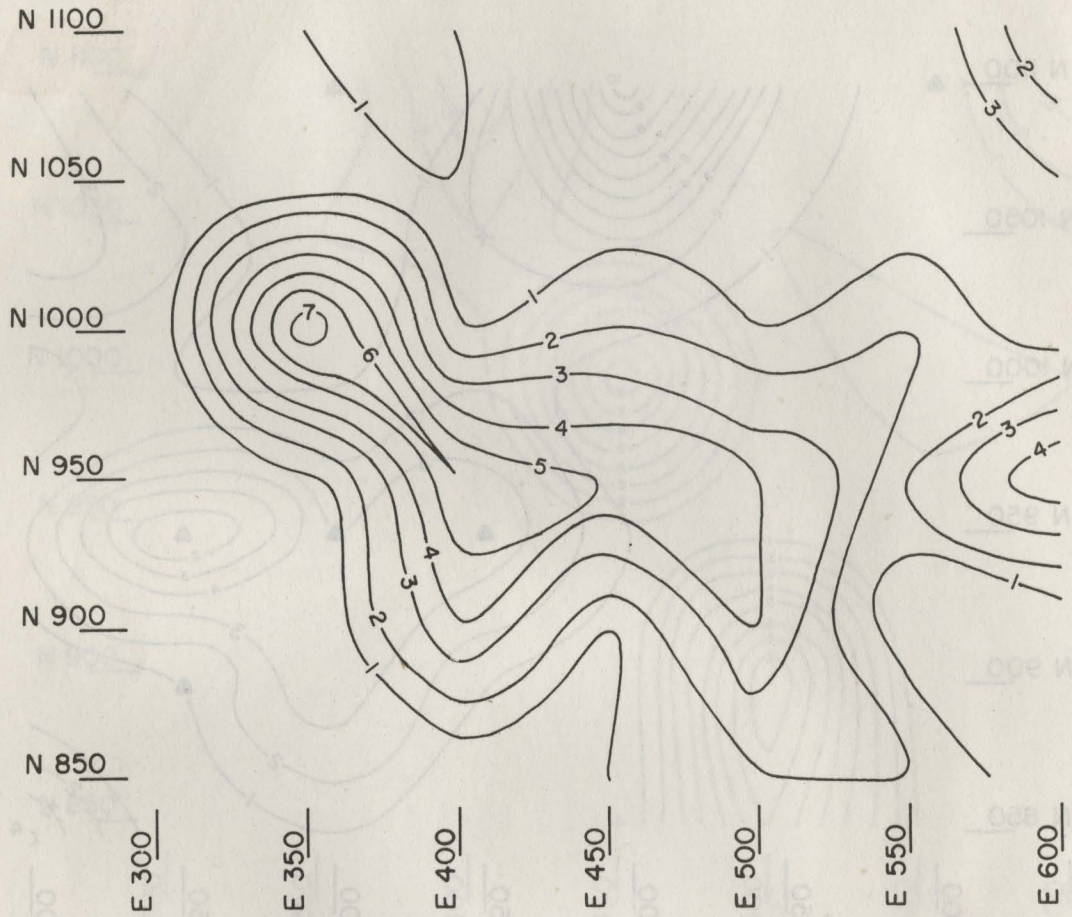
FIGURE 13



INTERPOLATED DENSITY OF CHERT FLAKES
 ▲ CHERT POINTS
 + CHERT SCRAPER

I.A.A.-168-(12/78)-ERP

FIGURE 14



INTERPOLATED DENSITY OF
SAND-TEMPERED POTTERY

I.A.A.-168-(12/78)-ERP

FIGURE 15

DISCUSSION AND CONCLUSIONS

The data originally obtained from the site by Wogaman, House, and Goodyear (1976) and Smith (1977) has generated the following hypotheses: 1) the site represents behavior in the form of specialized activities, 2) the activities may have been oriented towards hunting and extraction of mammals, and 3) the site was occupied mainly by Archaic peoples, especially during the Early Archaic. The excavated materials should provide additional information in the form of: 1) specific lithics being utilized during various phases of the Archaic; 2) indications of the spatial structure of the site; and 3) other artifact assemblages that are present.

For the most part, the excavated materials closely parallel the material found by the earlier investigators although steatite and pottery were recovered during the excavation. In terms of site utilization--i.e. specialized activities--the data recovered through excavation seem to suggest that different activities were represented at various periods of time. These activities are difficult to interpret because of the relative absence of comparable data in South Carolina regarding site utilization and human behavior. Given the absence of relative data, the answers regarding specialized or diverse activities are certainly tentatively at best, but they should serve to further the knowledge of small archeological sites located in close proximity to the larger base camps while setting forth and generating thoughts, ideas, and hypotheses for future research.

If studied through time and space, the artifact assemblage recovered from Edenwood seems to suggest that the earlier occupants were oriented towards a specialized activity, involving occasional visits. The later cultures of the Archaic, seemingly, were staying for longer periods of time, and possibly returned to the site more frequently. This is reflected in the intensity of debitage. The ceramic occupation, presumably Woodland, represents what appears to be a short term utilization of the site and the immediate environment.

The earliest recognizable cultural horizon at Edenwood is represented by the Palmer and Kirk points, two end-scrapers, and apparently related chert debitage. During this specific period of time, approximately 8,500-9,000 years ago (Coe 1964), the forests of South Carolina were undergoing a change from beech, alder, hemlock towards increasing occurrences of oak and hickory (Watts 1970, 1971; and Whitehead 1965, 1973). The Congaree River, like many other Coastal Plain rivers (Foster 1971), had begun to increase its gradients because of rising sea levels and overflowed its banks with greater frequency, thus depositing more sediments in its floodplain. Although no local data regarding palynology and forest developments exists, the sweetgum forests probably began to unfold with increased numbers of oak within the floodplain. Along the edge of this floodplain, an ecotone separating the floodplain from the oak/hickory forest situated on the elevated sand/clay soils, was developing.

This major ecotone certainly must have provided resources for a host of mammalian fauna, including the white-tailed deer. During this time, the Early Archaic people had moved into the area and were exploiting available resources.

The Edenwood site, located on the ecotone, contains at least two large identifiable clusters of deteriorated and heat-treated chert, in addition to associated points and tools. The clusters occur at the elevated section to the north, and again on the relatively flat and elevated area to the east (Fig. 2). Separating these two clusters is a low incidence of both heat-treated and deteriorated chert, and an absence of diagnostic tools. Oddly enough, the two heat-treated Kirk points occur isolated outside of the two clusters, but the Palmers occur within the eastern cluster. One end-scraper occurs in the northern area, and the second scraper occurs to the south, associated with a cluster of slate.

Based on the spatial patterning of these clusters, it would appear that three or more activity areas are present. Although a single cluster may appear to represent a single occupation, the interpolated clusters may represent several different occupations separated by time and space. Presently, such interpretations are difficult to make, but the clusters do demonstrate that the people were obviously selecting different areas within the site during the Early Archaic. And even though each cluster may represent many occupations, people were returning to specific areas. Spatial patterning, then, during this early occupation is definable, and it would appear that people were selecting specific areas. These reasons have involved elevated and well-drained soils, as suggested earlier.

Although other tool classes are known to occur with Palmers, such as graters and varieties of scrapers (Coe 1974; and the tool inventories noted from the Taylor and Manning sites), none of these specific tools was noted from the Edenwood lithic assemblage. The inventory consists entirely of the aforementioned materials, while the debitage is composed of small thinning flakes, probably removed in the process of resharpening bifaces and end-scrapers.

The Palmers found at this site were in several different stages of manufacture or utilization: one point appears in a stage of initial manufacture; another is fractured with considerable lateral reduction resulting from resharpening, while the others are highly fractured (Fig. 6). The means by which the points became fractured is unknown, but fracture may result from any number of activities, such as cutting, butchering, or resharpening. From this known assemblage one may deduce that the occupants were involved in a specialized activity.

The large base-camp oriented sites, Taylor (38LX1) and Manning (38LX50), are situated approximately one half mile to the north and south of Edenwood (Fig. 1). These sites, containing a more diversified assemblage of Palmer related tools may have functioned as a home base from which hunters radiated outwards to hunting camps. In these hunting

camps the artifact inventory would probably require tools for maintaining weapons and butchering animals. The debitage from such an activity would probably result from resharpening dulled tools and fractured, discarded bifaces. As the faunal record from several Eastern sites indicates, white-tailed deer were heavily exploited, and their remains frequently constitute the majority mammalian fauna (DeJarnette et al. 1962; et al. 1962; Adovasio, et al. 1978; Fowler 1959; Logan 1952; and McMillan 1971). If this subsistence model can be applied to Edenwood and the larger sites within the vicinity, then the Edenwood site may have functioned as an extraction camp for the procurement of white-tailed deer, not excluding other fauna. The faunal record from the Daw's Island shell midden (Late Archaic--3,500 B.P.) also indicates a high incidence of deer, with smaller number of raccoon. The deer remains are represented by long bones, which includes associated bones of the feet (notes on file at the Institute of Archeology and Anthropology). Portions of the cranium, and postcranium are nearly absent. Based on the assemblage from Daw's Island, it appears that selective butchering was done in the field, and that people were selecting for the high yield of meat contained in the shoulder and flank. Perhaps, then, a similar pattern of behavior existed at Edenwood, whereas the site functioned as a hunting/extraction camp. This proposition would also include the butchering of deer for selected body portions.

Michie (1973) has demonstrated that Dalton points could have been used for butchering, as evidenced by wear pattern studies. Perhaps Palmers and other bifaces of the Archaic served similar uses and their occurrence with small resharpening flakes would suggest an activity involving cutting, the subsequent dulling of tools, and the resharpening of those tools. Occurring with this activity would be the maintenance of hunting weapons. Spear shafts, fore shafts, and the projectiles manufactured from perhaps antler, bone, or wood may require various forms of maintenance, and shattered shafts may require replacement. The end-scraper could easily function in the maintenance and repair of these specific items.

By looking at Edenwood as a portion of a larger cultural system relating to perhaps base camps, the site may represent some sort of specialized activity of human behavior during the Early Archaic period relating to hunting/extraction. During the occupation, people were apparently occupying the elevated sandy soils providing drainage.

Following the Early Archaic, the site was occupied by later groups of preceramic peoples. Unfortunately, the remaining lithic assemblages are without any diagnostic temporal indicators. The presence of relatively large quartz preforms and broken bifaces would tend to support the idea of a Middle or Late Archaic occupation. The additional occurrence of fire-cracked rock and slate debitage would also argue for a later Archaic utilization of the site. But without diagnostic indicators suggestions are only tenuous. A comparative analysis of other excavated sites in the area would argue for both Middle and Late Archaic, based on raw material utilization.

Recent excavations at the Manning site have indicated a high incidence of fire-cracked rock occurring above the Palmer assemblage. These levels have produced Middle Archaic materials such as Morrow Mountain (Coe 1964), Guilford (Coe 1964), and Savannah River Archaic (Coe 1964) as noted in the collections at the Institute of Archeology and Anthropology, and through conversations with Goodyear (personal communication) and observations at the site. As a general pattern, the Morrow Mountain and Guilford bifaces are manufactured almost exclusively from quartz, but the Savannah River bifaces are manufactured from quartz and slate. The excavations at the Thom's Creek site (Michie 1969) and excavations at Buycke's Bluff site (notes on file at the Institute of Archeology and Anthropology) also demonstrate a parallel utilization of quartz during the latter phases of the Archaic. But while there was utilization of quartz during later periods, quartz was also utilized heavily during the Early Archaic. This has been demonstrated by excavations at the Taylor site where both Daltons and Palmers are occasionally made from the material. Slate was also used in the manufacture of the early points. A study of Paleo-Indian points (Michie 1977) provides further evidence that quartz and slate were being used during earlier times.

Although Smith (1977) reported finding quartz Morrow Mountain and Otarre points at Edenwood, the above data should provide sufficient reason for caution while attempting to correlate debitage with specific time periods. The overlapping clusters of quartz and fire-cracked rock could suggest a Middle or a Late Archaic occupation, but, conversely, it could also suggest an earlier occupation. The same problem exists with the slate cluster.

The quartz preforms, chunks, and large number of flakes indicate that the reduction of quartz cobbles and manufacturing tools took place at this site. Following manufacture, the tools were probably resharpened, as indicated by the occurrence of relatively small flakes. If other activities took place, the excavation was not able to monitor them. The total absence of grinding stones, nutting stones, chipped axes, and grooved axes would tend to support a proposition that site activities were continuing along the lines of specialization. But while the absence of specific items may indicate certain activities, the presence of fire-cracked rock may argue for longer periods of occupation, and possibly more diverse activities. If fire-cracked rock indicates the cooking and preparation of certain foods (House and Ballenger 1976) then such evidence may indicate a more intense occupation than would be indicated for just hunting activities, especially if the cobbles were transported into the site. The function of these shattered cobbles is not thoroughly understood. Fractures may result from direct impaction to obtain raw materials, or it could result from exposure to heat and immersion in water. Experiments performed by House and Smith (1975) indicate a refinement in fire-cracked rock typology, but the authors acknowledge that "much better control over variations in behavior, raw material, and resultant physical changes" (1975: 80) are needed.

The quartz, slate, and fire-cracked rock exist as entries within the site, and as the clusters have indicated, the users of these materials were selecting the elevated portions of the site, while they were avoiding the damp depressed areas.

Following the above occupations, a group of people during the Woodland had moved into the site utilizing plain, sand-tempered pottery. Unfortunately, this particular ceramic may span practically any time period of the Woodland, and as South (1976) has noted, plain, sand tempered sherds may occur with impressive frequency at many different sites.

The small number of sherds suggests a single occupation of one area within the site. The large and apparently dense cluster occurring at provenience 18 is not a prehistoric feature. This area was highly disturbed and the soil and sherds here had been moved during the clearing of the area by the power company. Nevertheless, a distribution of sherds occurs in the southern portion of the site, adjacent to the marshy depression of the ancient river channel. The area is sandy and well drained. Occupation by Woodland people in this area is similar to the pattern established earlier by other groups of people.

In summary, the site demonstrates that prehistoric people were selecting dry, well drained soils for occupation, and during the Archaic period, site activities may have been oriented toward the extraction and processing of fauna, perhaps white-tailed deer. During the various occupations, people were selecting different areas of the site, and during the Early Archaic at least one occupation was selecting an area isolated in the eastern portion of the site.

Although the material culture recovered by the earlier investigators is a partial representation of the material recovered through excavation, the excavation did disclose the presence of other artifacts: pottery and steatite.

MANAGEMENT SUGGESTIONS AND ALTERNATIVES

The excavations at the Edenwood site have demonstrated that discrete occupational clusters exist beneath the present power lines, and outside of those lines in the path of the proposed transmission lines. The artifact clusters affected by construction involve proveniences 50, 51, 10, 11, 18, 19, 27, 35, and 43. These specific areas not only represent artifact clusters, but they demonstrate that artifacts occur below the presently disturbed ground surface.

These artifact clusters representing various time periods have a significant research potential. Through controlled excavations of a large contiguous block, perhaps 100 by 200 feet, the archeologist can test the hypotheses set forth in this paper, and formulate new hypotheses pertaining to a rather large portion of the Archaic and the Woodland. Such questions would involve: 1) what is the actual size of hunting camps; 2) how are tools spatially located within the site; 3) is it possible to determine the area of butchering; 4) what do the spatial locations of tools mean in human behavior; 5) does intra-site structure change through time; 6) what is the significance of fire-cracked rock and how does it relate to human activities; and 7) was the site occupied by earlier people representing Dalton and Clovis?

Because of its unique nature, the site has a potential of yielding this sort of information. The data should be preserved at all costs through the mitigation of adverse affects involving line location and construction. It is our opinion that South Carolina Electric and Gas Company move the proposed transmission line to the west to avoid the site, and that during construction, all construction remain west of the site. A second alternative would involve the placement of transmission towers so as not to impact the artifact clusters, while remaining on the presently proposed route. During this operation all construction equipment should avoid contact with the mentioned area. A third alternative would involve total excavation of the endangered area.

The importance of this site cannot be overstated, and its cultural resources should be preserved through thoughtful resource management.

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