Archeological Survey of the Columbia Zoological Park, Richland and Lexington Counties, South Carolina

Thomas M. Ryan

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Archeological Survey of the Columbia Zoological Park, Richland and Lexington Counties, South Carolina

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INTRODUCTION

An agreement for a preliminary archeological survey of the Columbia Zoological Park was reached on July 25, 1972 by the Riverbanks Park Commission and the Institute of Archeology and Anthropology, University of South Carolina in cooperation with the South Carolina Department of Parks, Recreation and Tourism and the South Carolina Department of Archives and History. The purpose of the survey was to locate both historic and prehistoric archeological sites, to recommend a program for the scientific recovery of these remains, and to evaluate their potential recreational and educational value. The survey was conducted from August 1 to August 8, 1972. A total of three historic and four prehistoric sites was located. Four of the seven sites were tested for evidence of in situ remains and stratigraphic position.

The survey and test excavations were conducted by myself, with the assistance of David Miller and William Monteith, laboratory assistants at the Institute of Archeology and Anthropology. Both Miller and Monteith proved to be extremely competent in excavation techniques and in recording the stratigraphic profiles. Overall supervision and administration of the survey was provided by Dr. Robert L. Stephenson, Director, Institute of Archeology and Anthropology. Mr. Richard Polhemus, Laboratory Supervisor, and his staff were responsible for the cleaning, repairing, and cataloging of all artifacts.

I would like to thank Mr. John Mehrtens, Director, Columbia Zoological Park, for his interest and cooperation during the survey. I am particularly indebted to him for the use of the park's backhoe and the personnel to operate the equipment. Alan Shoemaker, Columbia Zoological
Park, was very adept in handling heavy equipment in difficult circumstances. Shoemaker was assisted by Richard Mace and Robert James, Columbia Zoological Park. Without the backhoe and the assistance of the park personnel the entire scope of the survey would have been reduced.
METHOD OF INVESTIGATION

The survey began with a brief general reconnaissance of the area to locate features of interest showing on the surface and to examine the environmental setting of the area. All disturbed areas such as roads, building sites and ditches were examined. Based on the results of the reconnaissance, specific areas were selected for more intensive survey and testing. All sites and areas of potential interest were located on a topographic map of the Park supplied by the Riverbanks Park Commission. This map, drawn with a two foot contour interval, proved to be an invaluable aid. The sites were later located on an aerial photograph of the park (Fig. 1). Gross geomorphic features such as outcrops of crystalline rock, shoals, alluvial deposits and the residual red clay hills were also mapped at this time.

In addition to locating archeological sites apparent from surface remains, areas of potential archeological significance were selected for additional testing. There was no surface indication of archeological material in these localities but their general position indicated the possibility of sub-surface remains.

In addition to the detailed hand excavation at these sites, seven backhoe trenches were dug. Two backhoe trenches were excavated at right angles to the Saluda Canal; two trenches were dug into the elevated alluvial deposits near the Sable Site; two trenches were excavated near the Greenhouse Site; and one strata cut was dug on the bottom adjacent to the river. The profiles from all of the trenches were recorded with the exception of one trench near the Greenhouse Site. Groundwater seepage and caving of the walls prevented recording of this profile.
ARCHEOLOGICAL SITES
COLUMBIA ZOOLOGICAL PARK
AUGUST, 1972

SALLIDA DAM
SALUDA FACTORY 38LX4
PEARCY SITE 38LX41
SALUDA BRIDGE 38RD62
SALUDA CANAL 38RD59
SABLE SITE 38RD60

ZOO SITE 38RD3
GREENHOUSE SITE 38RD61

SALUDA BRIDGE
SALUDA CANAL
SABLE SITE

SOURCE: U.S. DEPT. OF AGRICULTURE II-27-70
The trenches varied in length from 3.8 to 10 meters and were 1 - 1.5 meters wide. The trenches were excavated to the maximum extension of the bucket, approximately 1.5 - 1.9 meters. At the end of the project all trenches and excavations were backfilled.
NATURAL SETTING

The park encompasses 155 acres, within which four different micro-environmental zones were recognized. These zones had a varying economic potential to the aboriginal inhabitants and directly effect the preservation of archeological remains. The microenvironmental zones are defined on the basis of overall morphology and lack more sophisticated quantitative criteria. The four recognizable zones are: 1) the valley slope which consists of granite; 2) the upland surfaces of residual clay and weathered granite; 3) the modern alluvial flood plain; and 4) the elevated alluvial deposits located between the present flood plain and the edge of the residual clay hills (Figs. 2 and 3).

On the Lexington County side of the river there is an extensive bedrock outcrop of granite. The valley slope is highly dissected by numerous streams and gullies. Relief in this area is extreme, averaging 100 feet or more in places. The scarp is heavily wooded and has never been cultivated due to the bedrock outcrops and the relief. The Saluda Factory is located at the base of the scarp near the mouth of a small branch. With the exception of the factory, no archeological sites were found in this area.

On the south side of the river the granite bedrock has weathered to produce a deep red clay soil. Mechanical weathering has produced a rolling topography with local relief usually not exceeding 10-15 feet. The upland surfaces, along with the alluvial bottoms, were cultivated during the 18th, 19th and early 20th centuries.

This surface and the outcropping granite of the valley slope has remained geologically stable since man first occupied the valley.
INTERPRETIVE GEOLOGIC CROSS SECTION A-A

COLUMBIA ZOOLOGICAL PARK
AUGUST 8, 1972
T. M. RYAN

0 4
METERS

ZOO SITE
38RD3
LATE ARCHAIC-WOODLAND
CA. 1000 B.C.-1 A.D.

SALUDA CANAL
38RD59
1820 A.D.

SABLE SITE
38RD60
EARLY WOODLAND
CA. 500 B.C.-1 A.D.

SABLE SITE
38RD60
BURIED ARCHAIC COMPONENT
CA. 1000 B.C. AND EARLIER

I RED CLAY (IN SITU WEATHERED GRANITE)

II STRATIFIED ALLUVIUM

III ALLUVIAL BOTTOMS

SALUDA RIVER
INTERPRETIVE GEOLOGIC CROSS SECTION B-B

COLUMBIA ZOOLOGICAL PARK
AUGUST 8, 1972
T. M. RYAN

0 4
METERS

I GRANITE OUTCROPPING (VALLEY SLOPE)
II STRATIFIED ALLUVIUM (MODERN FLOOD PLAIN)
III SLOPE WASH
IV RED CLAY-DECOMPOSED GRANITE (UPLANDS)
stead of periodic build-up, characteristic of the alluvial valley, these surfaces have undergone constant weathering and erosion. Since the rate of degradation is greater than the accumulation of organic debris, archaeological sites frequently lie on or near the surface. Consequently, one will find the remains of several thousand years of occupation exposed on the surface. Since these sites are shallow, plowing, road construction, logging, tree roots and animal burrows will often disturb them (Ryan 1971b: 4). Nevertheless, these sites provide valuable data on prehistoric settlement and subsistence systems even though the artifacts are not always culturally in situ. Since the cultural material inventory directly reflects the economic activities of the group, special emphasis should be placed on debitage analysis and not just the delineation of diagnostic artifact types such as projectile points.

Judging from the archeological evidence from the park and related areas, the upland surfaces were extensively utilized during the Archaic Period. During later cultural periods the settlement pattern indicates a more intensive exploitation of the riverine environment while the upland surfaces were, for the most part, neglected.

Two sites are located in this valley slope zone, the Zoo Site (38RD3) on the north side of the river and the Pearcy Site (38LX41) located on top of the bluff above the Saluda Factory. The Zoo Site was occupied during the Middle to Late Archaic Period while the Pearcy Site should date from the terminal Archaic. Road building and related construction activities will undoubtedly produce evidence of other Archaic sites on both sides of the river.

In contrast to the uplands and valley scarp, which are subject to constant degradation, the alluvial flood plain is the product of numerous
floods that have taken place since the valley was formed. These surfaces are constantly changing as new strata are being laid down over older ones.

In the Piedmont the rivers are usually confined to a relatively broad, shallow bed. The high water velocity prevents lateral erosion, consequently, the valleys are characteristically U-shaped with steep sides. In places where the river falls rapidly, such as in a shoal area or along the fall line of the Carolina Piedmont, their beds are being cut rather than filled (Coe 1964: 11). In this situation the outcropping rocks reduce the water velocity when the river is in flood and sand and silt are deposited at a faster rate than elsewhere along the narrow flood plains. In areas where flood plains are being formed by active deposition archeological remains would be covered, thus preserving evidence of their existence. This is an extremely rapid process that covers a site and, in essence, forms the prehistoric equivalent of a "time capsule".

Excavation of living floors, covered by alluvial deposits, are often difficult due to the accumulation of many feet of overburden, but the results are most rewarding. Those sites located above the flood plain would not be subject to overflow and therefore, would not develop natural stratification (Coe 1964: 11).

Within the alluvial valley proper there are two areas of potential archeological interest formed by the accumulation of river deposited sand, silt, and clay (Figs. 2 and 3). The present alluvial bottom lies below the 146 foot contour in the vicinity of the Sable Site and below the 152 foot contour near the Saluda Bridge. This difference in elevation is due to a rapid decrease in the grade of the Saluda River between the two points. The stratified deposits were formed by the river during the periods of maximum discharge. Prior to the construction of
the Lake Murray dam, this area flooded frequently. The exploratory trench excavated near the river adjacent to the bridge shows that this surface is the result of overbank deposits of sand, silt and clay (Fig. 4). The north end of the profile suggests some scouring after initial deposition. No artifacts were recovered from this unit.

The second area of interest labeled "the elevated stratified alluvium" is situated between the flanks of the red clay uplands and the present alluvial bottom (Fig. 2). This deposit forms a flat narrow ridge measuring approximately 200 by 60 meters. The Sable Site (38RD60) is located on this surface.

38RD60 - Trench 1 and 2 demonstrate that this surface was built up by the gradual accumulation of water-born alluvium (Fig. 5). Alluvium was uncovered in the top 1.5 meters and extends down to an unknown depth. Since this is on approximately the same elevation (158 ft.) as the present bottom adjacent to the river upstream in the vicinity of the old bridge and Saluda Dam, it is assumed that localized changes in river gradient are responsible for its isolated position. An increase in the stream gradient in the immediate area would cause the river to downcut and thus lower its bed and flood plain. In this case the old flood plain would no longer be inundated during flooding and active deposition would cease.

Since man's occupation of the park is so closely aligned with the river valley it is recommended that a geomorphologist or sedimentologist serve as a consultant to any future archeological projects in the area. Knowledge of the depositional environment would be of great value in planning and conducting excavation.
COLUMBIA ZOO SURVEY
EXPLORATORY TRENCH A
ALLUVIAL BOTTOM
AUGUST 4, 1972
T. M. RYAN

0 50
CM.

I TAN SANDY ALLUVIUM
II ALLUVIUM WITH CHARCOAL FLECKS
III SANDY ALLUVIUM WITH SOME PINK CLAY
IV CHARCOAL LENS
V LIGHT TAN SANDY ALLUVIUM
VI COMPACT RED CLAY MIXED WITH SAND
VII SANDY ALLUVIUM WITH MANGANESE INCLUSION
VIII SANDY ALLUVIUM WITHOUT MANGANESE INCLUSION
SABLE SITE
38RD60
TRENCH I, WEST PROFILE
AUGUST 2, 1972
T. M. RYAN

I PLOW ZONE. ORGANICALLY STAINED ALLUVIUM
II LIGHT SANDY ALLUVIUM WITH NO APPARENT STRATIFICATION. NUMEROUS ROOTS
III LIGHT RED-PINK RED CLAY WITH WATER WORN PEBBLES
IV MOTTLED SANDY ALLUVIUM WITH PATCHES OF YELLOW SAND

SABLE SITE
38RD60
TRENCH II, WEST PROFILE
AUGUST 4, 1972
DAVID MILLER & WILLIAM MONTEITH

I PLOW ZONE. ORGANICALLY STAINED ALLUVIUM
II LIGHT SANDY ALLUVIUM WITH NO APPARENT STRATIFICATION. NUMEROUS ROOTS
III LIGHT RED-PINK RED CLAY WITH WATER WORN PEBBLES
IV MOTTLED SANDY ALLUVIUM WITH PATCHES OF YELLOW SAND
Saluda Canal (38RD59)

The Saluda Canal was part of South Carolina's efforts to improve the internal transportation system of the state. The program for internal development in South Carolina was broad and ambitious. The plan was to develop, within the State, a system of canals and navigable rivers on which commerce could pass easily and cheaply (Kohn and Glenn 1938: xiii). In 1817 South Carolina began its program of inland navigation which lasted until 1828. During this time over $2,000,000 had been expended and 2,000 miles of navigable streams attained. The irony of the canal program throughout the nation was that an entirely new means of transportation began to develop just as the canals were reaching their peak effectiveness (Kohn and Glenn 1938: xiii). The advent of the railroad marked the demise of the inland canal system.

History of the Saluda Canal

The Saluda Canal was constructed between 1818 and 1823 and was designed to pass boats around Beard and Senn's Falls on the Saluda River near Columbia. The canal originated on the upstream side of what is now known as the Saluda Rapids, paralleled the Richland County side of the river for a distance of little over two miles, and emptied into the Broad River opposite the Columbia Canal (Figs. 6 and 7). Five locks were built to lower the boats 32 feet from the falls to the Broad River.

John Wilson of the Internal Development Commission described the Saluda Canal in 1819 as follows:

After a careful investigation, it appeared to me most expedient to construct a Dam at a bend of the
Plan of Land of A. B. Starke taken by the Board of Public Works for the Saluda Canal, from Mr. Starke's corner tract.
Plat of Land of J. B. Parker
taken by the Board of Public works for
the Saluda Canal from Mr. Parker's
Upper Tract.
river above Senn's Falls [Saluda Rapids], and to conduct the navigation by a Canal running along the Eastern margin of the Saluda, and terminating in Broad river, just above the mouth of the Saluda, so as to avoid both Falls. The dam is four feet high, firmly secured to the Rocks, and extends across the river, a distance of 700 feet, with stone abutments at each extremity of it. It is built of stone and timber. The first parallel lines of square logs are secured to the Rocks by Iron Bolts; these are connected by smaller timbers or ties, dove-tailed into the front log, and fastened into the back by a notch and pin. The space between the timbers when carried to the height required, is masoned in with stone: the top is then gravelled and sheeted with good plank: the whole has been executed in a substantial manner.

The whole length of the Canal is two miles, 47 chains, and 24 links, and the height of the fall is thirty-two feet. The advantages of this dam are obvious: we obtain by it a constant supply of water, not dependant upon the fall of the river in dry seasons; it has also enabled us to fix the sites of the locks so near each other, that only one person is necessary to take the charge of them.

Immediately below the head of the Canal, we have a compact and solid ledge of rocks to contend with; a considerable part of the quarrying on this extensive ledge has been accomplished. From the head of the dam to the site of the first set of Locks, a distance of 2 miles and 10 chains, there has been 2500 yards of the canal dug, including in that distance different embankments which are formed; and within the same space there has been built two dry stone walls and two heavy Culverts across ravines to pass water under the canal in heavy rains. Also a substantial stone bridge across the road which leads from the Saluda ferry, through the upper districts, into North-Carolina. We have also prepared and cut about five hundred granite blocks, averaging five feet in length, for the facing or aisler work in the locks. During the months of August, September and October, there was but little work done on this canal, in consequence of the unusual sickness which prevailed on our water courses:... (Kohn and Glenn 1938: 11-12)

The Columbia Zoological Park encompasses approximately three-fourths of the old canal course including the dam constructed over Senn's Falls.
For the first 1,000 feet east of the dam, the canal bed is covered by the tracks of the Columbia, Newberry and Laurens Railroad. It was in this area that the canal bed was cut into bedrock (Fig. 8). For the remainder of its course through the park, the old bed appears as a slight depression flanked by two parallel earthen embankments, which mark the edge of the canal (Fig. 9). The present day relief is between one and three feet. Near the greenhouse the Saluda Canal turns slightly and flows from the Park Commission's property.

Excavations

Profile A is located in a well-drained section of the canal approximately 75 meters south-southwest of the present administrative building. The canal bed is marked by two parallel embankments of earth with a maximum relief of 40 cms. The canal transects the edge of the red clay hills in this area.

A backhoe trench 10 meters long and 1.0 - 1.5 meters wide was dug completely across the canal bed. The trench was dug to a maximum depth of 1.3 meters below the surface, which is considerably below the original canal excavation. The west wall was cleaned, using a shovel and trowel, then photographed and recorded.

The profile shows that the original ground surface, upon which the canal was dug, sloped toward the south (Fig. 10). On the upslope end of the profile traces of the old soil horizon could be seen but on the downslope end the soil profile had already been removed by erosion prior to the start of construction. A similar region of gradual soil erosion still exists in this area today. The canal bed, which was excavated into this surface, was 10 meters wide and had a maximum depth of 40 cms. Spoil
SALUDA CANAL
38RD59
PROFILE A - WEST
AUGUST 1, 1972
T. M. RYAN

0 50
CM.

I UNDISTURBED RED CLAY SUBSOIL
II DARK COMPACT SANDY CLAY DEPOSITED WHILE THE CANAL BED WAS STILL OPEN
III PINK-RED POST-OCCUPATIONAL WASH
IX REMNANT OF SOIL PROFILE DEVELOPED ON 1888 GROUND SURFACE
IV MOTTLED RED CLAY SOIL FROM CANAL EXCAVATION
X HUMUS AND ORGANIC DEBRIS
V CANAL EXCAVATION
VI LIMITS OF BACKHOE EXCAVATION
from this excavation was then deposited on each side of the canal forming a small protective line. By piling the spoil on the downslope bank the water level in the canal could be raised without the necessity of digging the bed deeper into the clay subsoil. The maximum water depth, measured from the crest of the downslope line to the bottom of the canal excavation, was only 90 cms. Even considering the reduction in the height of the downslope embankment by erosion it is unlikely that the water in the canal had been more than a meter deep in this section of the canal.

When originally constructed the bed of the canal was clean and smooth, although the floor and walls were not purposely packed smooth or puddled with fine clay. Water flowing through the canal kept the bed free from unwanted sedimentation. Once the canal had been abandoned, standing water had remained in the old canal bed. The layer of yellow/green clay was deposited on the floor of the canal at this time. After the deposition of this layer the canal began to fill by the gradual accumulation of small pebbles, sand, clay and organic debris. Judging from the dip of this layer the majority of this fill was in the form of sheet erosion that washed into the canal from a position farther upslope.

The only artifact recovered from this unit was a single aboriginal pot sherd that was incorporated in the fill. This sherd predates the canal and was accidently washed into the canal.

Profile B is located in a heavily wooded area immediately adjacent to the west side of the bridge approach. This unit was designed to examine the relationship of the bridge approach to the canal and to record the depositional sequence in the canal bed. There are numerous large trees growing on both the bridge approach and in the canal bed, which
added to the difficulty of excavating a straight profile. In addition, the bridge approach crossed the canal on an angle which further complicated matters. Consequently, the profile was cut parallel to the bridge approach and did not fully transect the entire canal bed.

The backhoe trench was 7.5 meters long, 1.5 meters wide, and had a maximum depth of 1.8 meters. The backhoe was unable to excavate any deeper than 1.8 meters under the existing conditions. The east wall, adjacent to the bridge fill, was cleaned, photographed and recorded (Fig. 11).

Profile B indicated a slightly different depositional sequence than Profile A. The original ground surface, upon which the canal bed was dug, had a greater slope in this area so it was necessary to artificially heighten the downslope embankment. This was done by the addition of sandy alluvium which was hauled in from the river bottom. In addition to the alluvium, spoil from the excavation of the canal bed was added to strengthen and heighten the embankment.

The mottled clay and sandy lenses exposed in the river side of the profile may represent repair to an early breach in the canal bank. On January 22, 1824 John Smith was paid $16.00 and board for twelve days' work in stopping a breach on the Saluda Canal (Kohn and Glenn 1938: 352). The location of the breach is not given but the canal bank is thinnest in this location and the breach may well have been in this location.

The canal bed had been lined or puddled with a thin layer of very fine red clay. Remains of the canal lining can be seen in Fig. 11, Strata VI. The puddling served to reduce water loss through seepage. The fragmentary nature of the lining further strengthens the interpretation that the break mentioned in 1824 occurred in this area.
SALUDA RIVER CANAL
38RD59
PROFILE B - EAST SIDE
AUGUST 4, 1972
T. M. RYAN & D. MILLER

TO RIVER & BRIDGE

I MOTTLED CLAY ROAD FILL WITH GRANITE FRAGMENTS
II DENSE GRAY CLAY
III LIGHT BROWN CLAY
IV SANDY ALLUVIUM WITH SOME ORGANIC MATTER
V LIGHT TAN ALLUVIUM WITH SOME WEAK EVIDENCE OF STRATIFICATION
VI FINE RED CLAY LINING
VII RED CLAY SUBSOIL
VIII TAN SANDY ALLUVIUM WITH SOME EVIDENCE OF STRATIFICATION
IX LIGHT BROWN SAND WITH SOME CLAY
X MOTTLED LIGHT BROWN SANDY CLAY
The profile shows that silting of the canal was a major problem in this area. The canal roughly follows the 162 ft. contour interval at both points but the river is only 50 meters from the canal here while it is over 200 meters in the vicinity of Profile A. At least 90 cms of water-deposited, light, sandy alluvium accumulated in the bed of the canal. The sandy nature of the fill and the uniform grain size suggests that it was deposited by fast-moving water while the canal was still in operation. Once deposited, subsequent flooding and scouring removed part of this deposit.

The period of abandonment is represented by two clay layers that were deposited under low velocity conditions. The canal was no longer in operation at this time but the canal bed still held water. After the last clay lens was deposited, the canal was filled in at this location when the bridge approach was constructed.

Saluda River Bridge (38RD58)

Remains of the old Saluda River bridge are located roughly one-half mile downstream from the Saluda Rapids. Stone-faced approaches are present on both banks as are two masonry support foundations located in the river. Large granite blocks were used to face the approach and the supports.

The exact construction date of the bridge is uncertain but it is probable that it is the stone bridge mentioned by John Wilson in 1819.

In 1826 Abram Blanding, Superintendent of Public Works, reported that the stone masonry was in extremely poor condition. Blanding wrote:

"During last year [1825], I found that the masonry of the bridge of the public road over the Saluda canal was so defective that it had become dangerous,
and I caused it to be taken down and re-constructd. Had it not been done the traveling on one of the great leading roads of the county would have been obstructed" (Kohn and Glenn 1938: 468-469).

According to the internal improvement records, William Brown was paid $157.60 for rebuilding the bridge over the Saluda Canal and George Leaphart was paid $118.50 for rebuilding the wooden part of the bridge (Kohn and Glenn 1938: 500, 506). After 1828, records on the bridge and canal upkeep and repair are not available.

On the night of February 15, 1865 the bridge was burned by Confederate troops to slow General Sherman's advance on Columbia. If the illustration from Harper's Weekly, April 15, 1868 is accurate, the Union troops had little difficulty in crossing the river (Fig. 12). There are no indications that the bridge was rebuilt after the Civil War so 1865 may be considered as the terminal date for this site.

Since the canal is relatively close to the river at this point, it is difficult to accurately distinguish between references describing the "bridge over the Saluda Canal" and "the Saluda River bridge" since, in fact, the same bridge served both purposes. More than likely, there was a wooden continuation of the Saluda River bridge that allowed boats to pass through the canal.

After the canal had been abandoned and the clay allowed to accumulate in the canal bed, the old bed was eventually filled in to form a straight, even approach to the bridge. The earth used to fill the canal had been borrowed from both the flood plain near the river and from the red clay uplands. Included in the mottled fill were a number of angular granite fragments suggesting that the stone masonry was repaired at the same time that the canal was filled (Fig. 11).

In light of the difficulties encountered by Blanding, it is recom
“Logan's Corps Crossing The Saluda River Above Columbia, South Carolina”
From Harper's Weekly, April 15, 1865
mended that the stone masonry be carefully examined by a structural engineer before the bridge is rebuilt using the original foundation.

Saluda Factory (38LX42)

The ruins of the Saluda Factory are located on the south bank of the Saluda River at the mouth of Rob Senn Branch (Fig. 1). The site consists of the granite ruins of the spindle and loom room, the power head, and other office or storage buildings (Figs. 13 and 14). In addition to the factory proper, the site also includes the Saluda Dam which extends across the river at the Saluda Rapids, the channels for diverting the water to the factory, and the exhaust flume. A narrow road runs along the edge of the bluff to the Old Saluda Bridge (38RD62). The ruins are extensive, covering two acres or more. Due to the extent of the ruins the site was not tested during the survey.

The Saluda Factory was established for the production of cotton goods by David Ewart and Colonel Blanding who built it in 1834 (Scott, 1884: 17). The factory was four stories tall and was, at one time, the largest cotton factory in South Carolina (Fig. 15). The factory location was probably influenced by the dam constructed in connection with the Saluda Canal. The water impounded behind the dam offered a ready power source. The factory was operated largely by slave labor until the close of the Civil War (Hennig 1936: 332). During the war the Saluda Factory was enlarged and equipped with wool machinery and employed about 1,000 workers in 1862 (Hennig 1936: 36). According to Scott (1884: 174), the factory was burned by advancing Federal troops in February, 1865. The factory was rebuilt and operated for some time after the war.
During the course of the survey four prehistoric sites were located and examined. These sites generally represent the period of transition from food-collecting to incipient cultivation. This transition began during the Late Archaic (ca. 3,000 B.C.) and ended with the middle to latter part of the Woodland Period (ca. 500 A.D.). This period can best be characterized as one of gradual change which finally resulted in full scale agriculture.

Archaic people were probably organized into small related family groups who systematically hunted and collected a variety of plant and animal resources found in a number of diverse environments. The seasonally restricted nature of the wild resources made it impossible for groups to remain in a single location all year, and effectively countered any trends toward population increase (Flannery, 1968: 75). The annual cycle was regulated by the seasonality of the wild resources and scheduling, or the cultural decision as to which resources to exploit.

During the Woodland Period the subsistence base was still oriented toward the procurement of wild flora and fauna. There is indirect evidence, in the form of a change in the settlement pattern, to suggest that incipient horticulture may have been practiced on an increasingly larger scale. In the Pee Dee basin, Woodland settlements are almost exclusively oriented along the natural levees or sand ridges found within the river valley (Ryan, 1971a: 94-95). These locations all have the advantage of being naturally fertile, easily tilled and periodically renewed by seasonal floods. On the other hand, there is little direct
evidence to indicate that the river valley was extensively exploited by the earlier Archaic people.

In addition to observed changes in the settlement pattern, there are also indications that the social organization underwent a change during the Woodland Period. Archaic social organization was probably centered around the extended family (group of related families), which served as the basic social and economic unit. During the Woodland Period the sites became larger, suggesting that the basic economic unit had expanded to include larger groups of less closely related families.

Also during this period, conical earthen mounds were constructed for burial purposes. These mounds appear to have been built for the interment of only a select, privileged class of the society and provide early direct archeological indication of social stratification. These mounds are the earliest earthen mounds constructed in South Carolina.

The general cultural chronology has already been established for most of the Carolina Piedmont and adjacent areas. The Archaic culture sequence, established by Coe (1964) in North Carolina, has been successfully applied to the South Carolina portion of the Piedmont and Coastal Plain. Coe's excavation of stratified Archaic sites in the Yadkin River basin has demonstrated the temporal position of a number of diagnostic projectile point types. Some of the types defined by Coe have been found in the park area and the dates for these points should be approximately contemporaneous with the North Carolina material. Coe not only defined the general evolutionary sequence, but was able to provide both relative and absolute dates on the various components. Excavation in the park may be expected to refine this sequence and new C14 dates will help to
more accurately determine the temporal span.

At least some of the sites in Columbia Zoological Park have been located and tentatively identified by specific artifact types and a general chronological sequence has been established. These are the basic elements of an archeological site survey. This survey, though, is only the introduction to the archeological research. It only points out what needs to be done. These sites represent localities where real people lived and had their social and economic developments, not merely places where artifacts can be found. The purpose of archeology is to understand these people and their ways of life. Archeological excavations, then, must follow the survey using the best available techniques of field work and analyses to determine settlement patterns, length of occupation, demography, ecological relationships, social systems, economic base and all of the other aspects of life ways that are determinable.

**Sable Site (38RD60)**

The Sable Site is situated on the edge of a narrow sand ridge between the edge of the red clay hills and the Saluda River flood plain. The site was partially disturbed during construction of one of the animal barns. Lithic debris, projectile points, and pottery were collected from the surface. The projectile points were all of the stemmed variety which can generally be attributed to the Late Archaic Period, while the pottery was manufactured during the Early Woodland Period.

On the west side of the barn the contractor had scraped approximately 4 cm of top soil from the surface. A number of large sherds with fresh breaks were collected from this area. A small area was cleaned with a shovel and immediately produced evidence of undisturbed
material. At this point, the surface was cleared of all construction debris and the area was gridded using the metric system. The exact horizontal position of each artifact was recorded on a master plot of the site. These ceramics were plotted according to surface treatment while lithic artifacts were recorded as to type and raw material. All artifacts were bagged according to the nearest meter square.

The horizontal position of each artifact was recorded in hopes of distinguishing various functional differences within the site. The scatter diagram shows that the occupation was relatively short and scattered over a wide area (Fig. 16). There was no midden accumulation or vertical stratigraphy—to suggest a long, continuous occupation.

The artifacts are widely scattered but there are small localized concentrations or clusters to suggest a more intense occupation. There is a well defined cluster of sherds associated with Feature 1. Feature 1 was a shallow pit or hearth containing organically stained alluvium. The feature fill contained fired clay fragments, sherds and some charcoal flecks. There was no ash deposit or burning of the pit wall which would indicate a fire of intense heat or long duration. Deptford Linear Check Stamped, Deptford Simple Stamped and Dunlap Fabric Marked ceramics were found associated with this feature. There also appear to be sub-clusters of artifacts in squares N110/E110 and N110/E100 but they were not associated with any recognizable features.

Feature 3 was a very thin organic stain that may not be a man-made feature. There were no artifacts found in the fill. Features 2 and 4 were shallow post holes filled with dark organically stained alluvium. The dark fill could be from decay of the wooden posts or it could represent occupational debris that filtered into the open holes. These
features were cross sectioned and completely excavated. The only artifact recovered was one small quartz chip from the fill of Feature 2. There was no apparent post hole pattern to suggest a dwelling.

The excavation profile showed that the entire area had once been plowed to a depth of 20 cms. The Woodland component was situated on top of the tan sandy alluvium directly below the plow zone. Since the plow distributed the uppermost 20 cms, it is not certain if the site was occupied during the deposition of the tan sandy alluvium or after the formation of this stratum. After this stratum was formed, flood waters no longer regularly reached this elevation and deposition ceased. The Woodland component at the Sable Site represents the last identified aboriginal occupation on the ridge.

**Sable Site Ceramics**

The ceramics from the Sable Site can be divided into three separate types. The surface treatments of these types include check stamped, simple stamped, and fabric impressed. These, and other attributes of the pottery suggest the widespread Woodland ceramic complex. This pottery is among the earliest of granular tempered wares throughout a large part of the Eastern United States.

**Deptford Linear Check Stamped (Fig. 17A)**

(Previously described: Caldwell and Waring 1939: 8; Caldwell and McCann 1941: 50; Willey 1949: 354-356; Griffin and Sears 1950; Goggin 1952: 105; Wimberly 1960: 86)

This pottery is grit-tempered and is distinguished by a very sandy paste that ranges in color from buff to light gray. The paste has a sandy feel to the touch and contains occasional quartz inclusions.
It is estimated that sand and quartz inclusions comprise over fifty percent of the paste.

The interior and exterior surfaces were smoothed before the exterior surface was stamped with a carved wooden paddle. Judging from the rim sherds the vessel forms were cylindrical with straight rims that tapered to a conoidal base. Tetrapod legs, commonly found on Deptford Period ceramics from northern Georgia and Florida, were absent.

The exterior surface of the vessel was possibly decorated by a roulette or rocker stamp technique resulting in linear checks. The stamp was applied up to the edge of the vessel and then the lip was formed by smoothing. **Deptford Linear Check Stamped** comprised 70.7 percent of all sherds from the Sable Site.

Dunlap Fabric Marked. (Fig. 17B;)

(Previously described: Jennings and Fairbanks 1939: 7; Wauchope 1948: 201-209; Griffin and Sears 1950; Wimberly 1960: 80-82; Wauchope 1966: 46.)

This type is grit-tempered with numerous quartz inclusions. The quartz particles have sharp angular edges suggesting that it was purposely crushed and then mixed with the paste. The paste generally ranges in color from buff to light brown. The interior is smoothed with many of the quartz particles protruding through the surface. The rims are straight suggesting a vessel form similar to **Deptford Linear Check Stamped**.

The entire exterior surface was impressed with a plain plaited fabric composed of a large closely spaced, stiff warp and a pliable, small, rather widely spaced weft (Griffin and Sears 1950). The finer weft is often irregularly arranged suggesting a loosely knit fabric. The paddle was applied at right angles or, in some cases, parallel to the rim.
Dunlap Fabric Marked pottery comprised 15.2 percent of all sherds from the excavation and represents the second most numerous type.

Deptford Simple Stamped (Fig. 17C)

(Previously described: Caldwell and Waring 1939: 4; Willey 1949: 357-358; Griffin and Sears 1950; Goggin 1952: 105; Wauchope 1966: 47-48.)

Only two sherds of Deptford Simple Stamped pottery were uncovered at the site. Both sherds were found in association with Deptford Linear Check Stamped and Dunlap Fabric Marked in the vicinity of Feature 1. The two examples, both rim sherds, are probably from the same vessel. The paste contains angular quartz inclusions and fine particles of fired clay, as well as varying amounts of course sand. The interior and exterior surfaces were smoothed prior to the application of the stamp. Sand and quartz particles intrude through the interior surface. The lip is rounded and suggests a large open-mouth vessel with straight sides.

The exterior surface is covered with the impression of a simple stamp with raised lands and grooves. The impressed lands and grooves were produced through the use of a grooved paddle which produced a number of parallel impressions simultaneously. The design was applied at an oblique angle to the rim. Deptford Simple Stamped pottery comprised 1.1 percent of all sherds recorded.

Unidentified Pottery

In addition to the stamped wares, plain undecorated pottery was also found. The plain sherds account for 5.4 percent of the total sample and all have a sandy paste similar to the Deptford wares. The inferred vessel shape is also similar to Deptford.
Thirteen sherds with worn or obscure surface treatment were placed in the unidentified decorated category. These sherds show evidence of having been decorated but the exact nature of the design could not be determined. One small sherd with a folded rim was also found.

TABLE 1

SABLE SITE
(38RD60)

In Situ Ceramics
Woodland Component

<table>
<thead>
<tr>
<th>Type</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEPTFORD LINEAR CHECK STAMPED</td>
<td>130</td>
<td>70.7%</td>
</tr>
<tr>
<td>DUNLAP FABRIC MARKED</td>
<td>28</td>
<td>15.2%</td>
</tr>
<tr>
<td>DEPTFORD SIMPLE STAMPED</td>
<td>2</td>
<td>1.1%</td>
</tr>
<tr>
<td>UNIDENTIFIED DECORATED</td>
<td>13</td>
<td>7.1%</td>
</tr>
<tr>
<td>FOLDED RIM</td>
<td>1</td>
<td>0.5%</td>
</tr>
<tr>
<td>PLAIN</td>
<td>10</td>
<td>5.4%</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>184</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Chronological Position

The Sable Site ceramics appear to belong within the Early Woodland Period. Simple stamped and fabric marked pottery suggests an Early Woodland complex.

Deptford ceramics can be tentatively dated between 500 B.C. and 1 A.D. This estimate is based on a number of radiocarbon dates from a wide range of Deptford sites in the Southeast. At the Lum Mose Site in north Georgia, a date of 2050 ± 90 or 100 B.C. (Sample I-4868) was determined from charred post remains in a house pattern associated with
Deptford Simple Stamped ceramics (Baker 1971: 115). The late Deptford village midden at the Mandeville Site produced a radiocarbon date of 1960 ± 150 B.P. or 10 B.C. (Sample M-1042 from Kellar, Kelly and McMichael, 1962: 354). The Mahan Site, near Calhoun, Georgia, produced two dates of 2580 ± 100 B.P. or 630 B.C. (M-1116) and 2490 ± 100 B.P. or 540 B.C. (M-1117) from charred wood (Crane and Griffin, 1963: 240). Both samples are from an Early Woodland occupation of the site and are associated with grit-tempered and fabric-impressed pottery.

The occurrence of fabric-impressed pottery along with Deptford Linear Check Stamped and Deptford Simple Stamped pottery at the Sable Site suggests an early date for the site. Considering the radiocarbon dates listed above, ranging from 630 B.C. to 10 B.C. it might be suggested that the Woodland component at the Sable Site would fit within the earlier half of this range. This Woodland component also provides a terminal date for the occupation of the ridge.

Sable Site (38RD60) - Archaic Component

Two deep strata cuts were excavated by machine adjacent to the Sable Site. These trenches were excavated into the surface of the ridge at right angles to the river (Fig. 5). Trench 1 was 5.3 meters long, 1 meter wide, and 1.5 meters deep. Trench 2 was 4.9 meters long, 1 meter wide and 1.65 meters deep. The back dirt from the trenches was carefully examined for artifacts.

The profile demonstrates that the sand ridge is alluvial in origin and was built-up by the repeated deposition of fine sand and clay particles. Directly below the plow zone was a stratum of light sandy alluvium with numerous roots (Zone II). There was no apparent stratification to suggest repeated deposition within the zone.
Directly below the sandy alluvium was a layer of pink-red clay with a few water-worn pebbles (Zone III). The fine clay particles indicate that the depositional environment was one of very low velocity and may represent a back swamp flanking the main channel. The clay, in turn, rested on top of a mottled sandy alluvium. The inferred depositional environment is similar to Zone II. Stratified alluvium continues for an unknown depth below Zone IV.

In the lower levels of both trenches several Archaic stone artifacts were found. The exact position of the artifacts is uncertain but they are probably associated with the clay stratum, Zone III. The artifacts recovered from this level include broken and cracked quartz cobbles, quartz chips and flakes, and one biface. The biface is of quartz and may have served as a scraping tool or as a pre-form for further modification (Fig. 18e,f). Based on the artifacts recovered from the two trenches, the component can be tentatively dated to the Middle or Late Archaic Period, ca. 5000 B.C. to 500 B.C.

The stratigraphic position of the Archaic component demonstrates that the geomorphic processes responsible for the formation of the ridge were active before, during and after the occupation of the site. Since the stratified alluvial deposits continue for an unknown depth, it is, therefore, possible that even earlier material will be found below Zone IV. The stemmed Archaic projectile points, found by the contractor during the construction of the barn, are probably associated with this component.

Further testing and more extensive excavation is recommended.
GREENHOUSE SITE

38RD61

TRENCH II SOUTH
AUGUST 8, 1972
T. M. RYAN

50 CM.

I PLOW ZONE, ORGANICALLY STAINED ALLUVIUM

II LIGHT TAN SANDY ALLUVIUM WITH SOME WATER WORN PEBBLES, STRATIFICATION PRESENT IN THE FORM OF THIN CLAY LINES

III WEATHERED IN SITU GRANITE, COARSE GRANULAR TEXTURE, SOME DECOMPOSED GRANITE ON WEST SIDE
Conclusions

The Woodland component at the Sable Site reflects the activities of a small population living at the site for relatively short periods of time. This is indicated by the thin scattering of artifacts and the lack of vertical stratigraphy. The occurrence of two post holes at the site may reflect semi-permanent seasonal shelters. It is, at this time, difficult to draw any definite conclusions based solely on two post holes. The cluster of broken ceramics and a few lithic artifacts around Feature 1 may reflect an unknown domestic task. The artifact scatter pattern failed to locate any definite activity areas other than to note the three small ceramic clusters.

The settlement pattern as reflected by the Sable Site excavations coincides with the known Early Woodland pattern for other areas. Small seasonally occupied sites seem to be the general rule. Milanich's excavation of a Deptford site on Cumberland Island, Georgia, uncovered small piles of shell midden. Excavation suggests that these piles were associated with individual house sites. The Early Woodland people on Cumberland Island were shell-fish collectors who relied heavily on fishing and hunting for subsistence (Milanich, 1971: 57).

Based on ceramic similarities, the Early Woodland component at the Sable Site can be tentatively dated between 500 B.C. and 1 A.D. The presence of Dunlap Fabric Marked ceramics may indicate that the site was occupied during the earlier part of this range.

The Archaic component uncovered in the two strata cuts is represented by only a few artifacts. This occupation can be tentatively assigned to the Middle or Late Archaic which predates the Woodland occupation at the site.
GREENHOUSE SITE (38RD61)

The Greenhouse Site (38RD61) is located on a small isolated erosional knoll on the eastern margin of the park (Fig. 1). The site is bordered by the Saluda River flood plain on the south and east, the canal on the west, and a small unnamed creek on the north. During the construction of the park greenhouse, the top 50 cms of the knoll was leveled exposing projectile points, pottery and lithic debitage. Many of the projectile points were collected by the construction workers and were unavailable for detailed analysis.

Two backhoe trenches were excavated on the knoll in hopes of locating in situ material. Trench 1, located on the south flank of the knoll adjacent to the Saluda River, is 4 meters long, 1 meter wide, and was excavated to a maximum depth of 1 meter. Light tan sandy alluvium was found in all levels. The only artifacts found in this trench were 4 quartz chips and a large number of broken and cracked quartz pebbles. The profile was not recorded due to water seepage and slumping of the wall.

Trench 2 was excavated on top of the knoll near the South Carolina Gas and Electric transmission line. The trench was 3.85 meters long, 1 meter wide, and was excavated to a maximum depth of 1.35 meters (Fig. 19).

The profile shows that there is one meter of waterborne sand and clay, deposited directly over weathered bedrock. In this case, bedrock consists of highly decomposed granite which still retains some of the original rock structure. The fine clay lenses contained within the alluvium demonstrates that it was deposited by at least three separate floods. The sandy alluvium also contained small, water-worn granite
and quartz pebbles. At the bottom of the alluvium, near the top of the weathered granite, several quartz cobbles were found which may represent the pre-alluvium surface. It is possible that the Archaic and Woodland people were using large pebbles from this area for manufacturing stone artifacts. The only artifacts recovered from this trench consist of 1 plain sherd, 1 cord-marked sherd, 3 quartz flakes and 2 quartz chips. The stratigraphic position of the artifacts could not be determined.

The lack of stratigraphy and the distribution of surface remains suggests that the occupation was confined to the south flank of the knoll and has, for the most part, been destroyed by construction of the greenhouse. No further work is recommended other than salvage excavation in advance of any future construction.

Analysis of the surface debitage indicates two separate cultural components. The earliest component is represented by a number of Middle to Late Archaic projectile points, including Morrow Mountain, Guilford, and Savannah River. All points were made from smokey gray to white quartz which was probably procured locally. The points conform to the type description by Coe (1964) and should date between 4,000 B.C. and 500 B.C. A large number of quartz chips, flakes and cores were found on the surface but they could not be accurately assigned to a specific component (Fig. 18h).

The second component is represented by pottery and projectile points associated with the Woodland Period (ca. 500 B.C. - 1 A.D.). The pottery is grit-tempered and consists of 5 checked stamped, 1 punctate and 11 plain sherds. The pottery is similar in temper and decorative technique to the ceramics from the Sable Site (38RD60). In addition to the pottery, the chert and argillite debitage can tentatively be assigned to this component.
The Woodland Component at the Greenhouse Site is typologically similar to the Sable Site and the two sites may have been occupied by the same people.

**TABLE 2**

GREENHOUSE SITE
38RD61
SURFACE COLLECTION

**Ceramics**

<table>
<thead>
<tr>
<th>Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grit Tempered Pottery</td>
<td></td>
</tr>
<tr>
<td>checked stamped.</td>
<td>5</td>
</tr>
<tr>
<td>punctate</td>
<td>1</td>
</tr>
<tr>
<td>plain rim.</td>
<td>1</td>
</tr>
<tr>
<td>plain.</td>
<td>10</td>
</tr>
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**Lithics**

<table>
<thead>
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</thead>
<tbody>
<tr>
<td>Debitage</td>
<td></td>
</tr>
<tr>
<td>quartz chips</td>
<td>.25</td>
</tr>
<tr>
<td>quartz flakes</td>
<td>.43</td>
</tr>
<tr>
<td>primary quartz flakes</td>
<td>.3</td>
</tr>
<tr>
<td>argillite flakes</td>
<td>1</td>
</tr>
<tr>
<td>argillite chips</td>
<td>4</td>
</tr>
<tr>
<td>chert chips</td>
<td>1</td>
</tr>
<tr>
<td>chunks</td>
<td>.40</td>
</tr>
<tr>
<td>cracked rock</td>
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<table>
<thead>
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<tbody>
<tr>
<td>Cores</td>
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</tr>
<tr>
<td>multiplatform quartz core</td>
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</tr>
<tr>
<td>exhausted multiplatform quartz core</td>
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</tbody>
</table>

**Worked Pieces**

<table>
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<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projectile Points</td>
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</tr>
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<td>Marrow Mountain (quartz)</td>
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</tr>
<tr>
<td>triangular quartz</td>
<td>2</td>
</tr>
<tr>
<td>broken quartz tip.</td>
<td>1</td>
</tr>
<tr>
<td>broken triangular base (quartz)</td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bifaces</td>
<td></td>
</tr>
<tr>
<td>small quartz biface fragments</td>
<td>3</td>
</tr>
<tr>
<td>blanks (or preforms)</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tools (?)</td>
<td></td>
</tr>
<tr>
<td>bifacially thinned argillite</td>
<td>1</td>
</tr>
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</table>
PEARCY SITE (38LX41)

The Pearcy Site (38LX41) is located on the top of the bluff, directly above the Saluda Factory (38LX42). The site is situated on the 262 foot contour and was exposed in the bed of a dirt road (Fig. 1).

In June, 1972 English Pearcy, a local resident, found a number of steatite vessel fragments at the site. The discovery was reported to the Institute of Archeology and Anthropology and the site was investigated in July, 1972. The section of the road where the vessel fragments were found was cleaned and examined. Additional fragments of the same vessel were found in a small pit or depression in the ground approximately 10 cms below the present ground surface. The surrounding area was examined, but no additional artifacts were found.

The fragments discovered by Pearcy were cleaned, cataloged, and restored using glue and wooden braces (Fig. 21). Approximately one-third of the vessel is represented. It is manufactured from a single piece of soft steatite. Judging from similar finds in other parts of the state the vessel was carved directly from a steatite mass, cut free from the outcrop, and then finished by carving and grinding (Overton 1969; Lowman and Wheatley 1970; Bushnell 1940). The interior of the vessel was ground smooth while the exterior was covered by a number of rough gouges (Figs. 21 A and B). Steatite quarries have been reported from a number of locations in the vicinity of Greenville, South Carolina (Lowman and Wheatley 1970; Overton 1969). It is possible that the steatite vessel found in the park was quarried at one of the South Carolina locations.
Temporally the vessel can be assigned to the Late Archaic Period. Coe (1964) found a number of steatite vessel fragments at the Gaston Site in North Carolina which are regarded by him to be no younger than 2,000 B.C. The Pearcy Site should be contemporaneous with the North Carolina date. The lack of any associated artifacts such as lithic debitage, tools or projectile points suggests that this locality is more of an isolated location of a specimen than the site of a prehistoric camp or village.
The Zoo Site (38RD3) is located on the edge of the red clay hills adjacent to the Saluda River bottom (Fig. 1). A small unnamed creek forms the eastern boundary. A large number of lithic artifacts have been found in the parking lot adjacent to the temporary administration building. The available evidence suggests that this area was cultivated prior to World War II.

Artifacts found on the surface include: 3 plain sherds, 3 triangular quartz bifaces, 1 preform blank, 1 unfinished triangular point, and an unidentified broken quartz point (Fig. 18a,b,c). In addition to the triangular point, large stemmed points were also reported from the site. Large numbers of quartz and argillite chips and flakes are also present. The artifacts point to a Late Archaic or Woodland occupation.

The site is not recommended for extensive excavation, although a small stratigraphic test is warranted. Additional sites, similar to the Zoo Site, may be uncovered along the edge of the red clay uplands.
SUMMARY AND RECOMMENDATIONS

An archeological survey of one full week by three men from the Institute of Archeology and Anthropology was conducted on the property of the Columbia Zoological Park during August 1 - 8, 1972. The survey team was assisted by three men from the Park staff who provided the use and operation of a backhoe for heavy excavation. The 155 acres of the Park property, on both the Richland and Lexington County sides of the Saluda River was searched for indications of archeological sites. Areas where surface indications were found were recorded and test excavations were conducted there. Some areas where no surface indications were apparent, but where sites might be expected, were carefully examined. The survey was extensive in the whole area and intensive in some locations. It is not presumed, however, in so brief a survey, that all of the sites in the Park were found.

The survey resulted in the locating, recording, and testing of three historic sites and four prehistoric sites. The specimen materials from these sites were cataloged and analyzed in the Institute laboratory during the two weeks following the survey.

Historic Sites

The three historic sites recorded pertain to the 19th century development of Columbia and the transportation system in the central part of the state. They include the Saluda Factory and Dam (38LX42), the Saluda Canal (38RD59), and the state bridge over the Saluda River (38RD58).

The Saluda Factory and Dam (38LX42) is located on the Lexington County side of the river and consists of the masonry ruins of the dam on the river, the power wheel, spindle room, and the storage and office
facilities. Much of the masonry of these ruins remains above ground. The factory was built in 1834 and operated as a cotton factory until after the Civil War.

The Saluda Canal (38RD59) was built in 1818 - 1823 to pass boats around Beard and Senn's Falls on the Saluda River. Traces of the canal bed can be seen in several places in the Park. Trenches, excavated at right angles to the canal bed, indicate that the canal was shallow and did not hold more than 3 to 3 1/2 feet of water. After the canal was abandoned, the bed held standing water for a number of years before it was gradually filled in by sheet wash erosion.

The Saluda River Bridge was constructed in the early 1820's as a means of passing traffic across the river just downstream from the Saluda Rapids, then known as Beard and Senn's Falls. Remains of the stone and earth bridge approaches and the granite supports for the bridge can still be seen today. Test excavations showed that after the Saluda Canal was abandoned, the canal bed was filled when the bridge approach was constructed. The bridge was burned in 1865 by Confederate troops in an attempt to slow Sherman's advance on Columbia and was never rebuilt.

Prehistoric Sites

The four prehistoric sites recorded provide data on the human occupation of the Park area from the Middle and Late Archaic Periods through the early part of the Woodland Period. This is a range of approximately 5,000 years of periodic camps and small villages ending almost 2,000 years ago.

Evidence for the earliest occupations is seen in the lower levels of the Sable Site (38RD60) and the Greenhouse Site (38RD61). The remains of
these campsites are of the Middle Archaic Period dating from 5,000–3,000 B.C. At both these sites and at the Zoo Site (38RD3) occupation continued into the Late Woodland Period of 2,000 to 500 B.C. These were small, sporadically occupied campsites of hunting, fishing, and gathering people who occupied this particular area from time to time in their systematic, seasonal movements. These Archaic people derived their subsistence from extensive exploitation of the Saluda River Valley and the valley slopes and uplands. One group of these people left a carved stone bowl at the Pearcy Site (38LX41).

At the end of the Archaic Period, about 500 B.C., the Woodland people began to exploit the Saluda River Valley and left evidence of their presence in the form of broken projectile points, stone chips, and pottery. These Woodland remains were found in the upper levels of the Sable Site (38RD60), the Greenhouse Site (38RD61), and the Zoo Site (38RD3). Excavations at the Sable Site suggest that these Indian people had lived in small groups of but a few families each, being only slightly larger than their Archaic predecessors but that they had developed a somewhat more elaborate way of life. The Woodland people, too, had oriented their economy toward the exploitation of wild flora and fauna of the valley. In addition, though, they had developed the use of pottery vessels and probably also practiced some incipient agriculture. They were thus tied to specific places somewhat more than their Archaic predecessors and the temporary camps of the latter became semi-permanent villages in Woodland times. Based upon the survey results, it appears that the latest aboriginal occupation of the Park area was shortly after the advent of the Christian Era, almost 2,000 years ago.
Recommendations for Archeological Research

This brief survey has located the most obvious archeological sites in the area. Others may exist that have been covered by soil deposition or heavy vegetation. There may be earlier sites than those of the Middle Archaic Period and there may be later sites than those of the early part of the Woodland Period. It is also possible that additional historic ruins might be discovered in the neighborhood of the Saluda River Bridge approaches.

It is recommended that, during the course of future archeological work in the Park, intensive efforts be devoted to searching for additional sites. The alluvial deposits along the river should be intensively tested for evidence of in situ living floors of the Archaic and Woodland Periods. This would include the use of power equipment to trench the alluvium and, if such living floors are found, to strip off the overburden to within a few inches of the site floor. Likewise the heavily wooded areas should be intensively searched and test excavations conducted there in an effort to locate additional sites.

The test excavations conducted at the sites recorded in the present survey have provided but brief glimpses into the ways of life of the prehistoric Indian people who lived there. Full archeological excavation remains to be done. Also the recording and sampling of the historic sites during the course of this survey necessarily has left the major excavation for the future.

It is recommended that a multidiscipline archeological project be undertaken for this area. This project would include an archeologist and an excavation crew as well as an historian, and consultation services of a geomorphologist, a paleobotonist, and perhaps others of related
disciplines. The excavations would include as full as possible an excavation of the Sable Site (38RD60) with detailed treatment of both the Archaic and the Woodland Components. It must be of sufficient size and comprehension to include a major portion of the site at both levels including architectural features, if any, living floors, and use areas as well as the artifacts and living refuse. The area of the Greenhouse Site (38RD61) would be treated more as a salvage excavation in areas that would be damaged by proposed construction. The Zoo Site (38RD3) would involve but limited additional testing and a detailed, controlled surface collection. No additional work would be anticipated at the Pearcy Site but the areas nearby would be explored for additional sites.

The areas of the three historic sites would be explored in depth with numerous slot trenches to determine outlines of buildings and structures not now apparent on the surface. This would be especially extensive around the Saluda Factory (38LX42). At the Saluda Canal (38RD59) a search would be made for locks, the lock-keeper's house and other related features. This work would be done in close coordination with an historian who would conduct a thorough search of the documents on these sites to coordinate the written record with the archeological record.

Recommendations for Interpretive Exhibits

The integrated program of historic and prehistoric archeological research combined with a well-planned program of interpretive exhibits would be one of the outstanding assets of the Columbia Zoological Park. The archeological excavations, themselves, would serve as living exhibits for public understanding while the excavation is in progress. Exhibits designed to interpret the archeological results of the
excavations could then be constructed as permanent interpretations of the several thousands of years of human utilization of the area. All such exhibits would be based upon the data actually derived from the ground and the analyses of these data in the laboratory. They would reflect the scientific and historical integrity of the actual data derived from the ground and be exhibited in the actual place where the events of history occurred.

The Saluda Canal could be interpreted by on-site exhibits showing, by graphics and/or diagrams, the use of the canal and briefly outlining its history. This could be done in two or three small exhibit shelters along the canal course.

It may or may not be feasible to restore the Saluda River Bridge. If it is restored extreme caution would be used in assuring stability of the existing piers and other parts of the old structure. If it were not restored it could be interpreted with the same kinds of exhibit shelters as would be used to interpret the canal.

The Saluda Factory could best be interpreted by the stabilization of the above-ground ruins and the tops of the foundations so that the plan of the factory could be seen, but as a ruin. Due to the size and complexity of the various features of the site, it is not recommended that the Saluda Factory be restored or reconstructed. The standing walls are deteriorating and measures should soon be taken to strengthen and reinforce these. All such stabilization should be done in close coordination with the documented details of the factory so as to preserve the basic integrity of the site. As with the canal and the bridge, this could be interpreted in several small exhibit shelters at the site.
The Sable Site offers excellent potential for a full reconstruction of a prehistoric site. Based upon the results of the excavations and the analyses of the artifacts, a life-size reconstruction could be prepared portraying archeologically observed features as they might have been while in use by the aboriginal inhabitants. Either the Archaic or the Woodland component could be used to depict a real camp or village in use at that period of prehistory with life size models of people going about their daily tasks of living in this prehistoric situation. Such a reconstruction would not be large nor expensive but could well be the first of its kind so depicted. Restorations of prehistoric settlements of later periods have been done and done well. I know of none of this period and it would be a tremendous asset to the Park as well as of immense educational value to the visiting public.

The other three sites located in the survey could well be interpreted merely by proper signs calling attention to their presence and briefly explaining their position within the historical framework of the Park.
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SUMMARY OF RECOMMENDATIONS
Archeological Sites
Columbia Zoological Park

<table>
<thead>
<tr>
<th>HISTORIC SITES</th>
<th>CULTURAL AFFILIATION</th>
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<tr>
<td>Saluda Canal (38RD59)</td>
<td>Historic canal built 1819 - 1823</td>
<td>Establish interpretive exhibits and possibly exploratory excavation and locate specific features such as locks, lockkeeper's house, etc.</td>
</tr>
<tr>
<td>Saluda River Bridge (38RD58)</td>
<td>Historic bridge ca. 1820 - 1865</td>
<td>Stabilization. Careful examination before the bridge is open to the public.</td>
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<tr>
<td>Saluda Factory (38LX42)</td>
<td>Historic cotton and wool factory, ca. 1834 - post Civil War</td>
<td>Stabilization and landscaping. Exploratory archeology to locate specific features. Explanatory site exhibits.</td>
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<tr>
<th>PREHISTORIC SITES</th>
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<tr>
<td>Pearcy Site (38LX41)</td>
<td>Late Archaic, ca. 2000 - 1000 B.C.</td>
<td>None at this time except additional survey.</td>
</tr>
<tr>
<td>Zoo Site (38RD3)</td>
<td>Late Archaic - Woodland, ca. 2000 B.C. - 1 A.D. (possibly later)</td>
<td>Additional surface collecting and limited test excavation.</td>
</tr>
<tr>
<td>Greenhouse Site (38RD61)</td>
<td>Middle Archaic - Woodland ca. 4000 B.C. - 1 A.D.</td>
<td>Salvage excavation in those areas that will be disturbed by future construction.</td>
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<tr>
<td>Sable Site (38RD60)</td>
<td>Early Woodland, 500 B.C. - 1 A.D.</td>
<td>Extensive horizontal testing for additional artifact clusters.</td>
</tr>
<tr>
<td>Sable Site (38RD60) Archaic component</td>
<td>Middle - Late Archaic (possibly earlier)</td>
<td>Additional testing and extensive horizontal excavation. Future excavation should include geomorphologists, paleobotanists, sedimentologists, etc. in addition to the archeologists.</td>
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