

Chapter 8). The small quantity of charcoal recovered precluded radiocarbon dating. On the basis of the associated biface, however, the concentration was tentatively interpreted as part of a Middle or possibly Late Archaic floor.

Feature 2

Feature 2 was characterized by a cluster of four stone tools located from 20 to 23 cm in EU6 (Figure 38). The tools were found half a meter southwest of the small (50 cm diameter) cluster of fire-cracked rock and associated Palmer point found in EU7 from 17 to 23 cm, briefly described under Feature 1. The material from the two areas may be part of an Early Archaic floor, although given the shallow deposits some intrusive artifacts may be present. The tools included a quartz cobble fragment that weighed 230.0 grams and was characterized by a weathered circular depression on one face; the original tool may have served as a nutting stone, or grinding basin. Two quartz retouched flakes were also present, one with an acute functional edge (35°) and the other with a steeper edge (65°). Both specimens were on secondary decortication flakes, with the cortex opposite the working edge, probably to provide comfortable backing. The final tool found within the cluster was a steeply chipped quartz uniface (Figure 42:1) that appears to have been a combination side scraper/spokeshave. A second steeply chipped uniface (Figure 42:0), of chert, was recovered immediately below this cluster, while a slate flake with two acute working angles (Figure 42:t) was found just above it. Both of these artifacts may be associated with the main feature/concentration, but it should be emphasized again that the density of tools and other artifactual debris was relatively high in all of the units, precluding definitive period or component assignments for most specimens.

Feature 3

Feature 3 was characterized by a circular, basin shaped charcoal stain 20 cm deep and roughly 60 cm in diameter first observed at eleven centimeters below the plowzone in EU8 (Figure 39). A number of lumps of fired clay were located immediately to the east of the stain; this material was broken up to see if artifacts were present, but was not otherwise retained. None of the clay fragments appeared to have been intentionally shaped, but instead appeared to have been formed through the erosion of a fired area. No temporally diagnostic artifacts were found in the fill of the stain or within the fired clay. A moderate number of tools, fire-cracked rock fragments, and pieces of

debitage were recovered immediately around the stain from 10 to 30 cm in depth, however, and may or may not be associated. The actual fill of the stain, including the fired clay area, contained 11 pieces of fire-cracked rock weighing 104.2 grams, one quartz hammerstone fragment (68.1g), one crude quartz bifacial scraper(?), one quartz retouched flake cutting(?) tool, and 60 pieces ofdebitage, including the following raw materials; quartz (N = 24; 11.8 g), chert (N = 6, 0.7 g), slate (N = 5, 0.5 g), rhyolite (N = 2, 0.4 g), and quartzite (N = 4, 3.2 g). Six gallons of fill were retained for flotation, and the resulting charcoal, and charcoal hand-picked from the fill during excavation, were submitted for ethnobotanical analysis (Samples 19-22, 38LX64; Chapter 8). No subsistence remains were identified, but wood charcoal from pine and red oak was found. The feature is tentatively identified as a hearth; its appearance at -11 cm suggests a possible Late Archaic age. Two hammerstones (Figure 43:g, i) were plotted near the edge of the feature, but at a lower depth (-26 cm) and may not be associated; the larger specimen is a combination hammerstone/pitted cobble tool.

Feature 4

Feature 4 was characterized by a small irregular charcoal stain some 50 cm in diameter in the northwest corner of EU3 from 53 to 70 cm in depth. The fill was retained for flotation, and yielded a few flecks of wood charcoal (0.06 g) that were identified as pine and conifer (Sample 23, 38LX64; Chapter 8). Artifacts present in the fill included fire-cracked rock (N = 1, 2.5 g), ferruginous sandstone (N = 3, 0.1 g), quartzdebitage (N = 6, 8.0 g), and chertdebitage (N = 2, 0.6 g). Several tools were recovered in the floor of the unit at 53 to 55 cm, and may be associated with the stain, which is tentatively interpreted as a possible hearth area. The tools included an opalized shell (Santee River chert) blade-like uniface with distal and lateral retouch (Figure 42:g), a quartz biface scraping (?) tool, an Allendale chert side scraper (Figure 42:a), and a rhyolite graver with a pronounced, bifacially shaped spur (Figure 42:b). The number of well-made tools at this depth strongly suggests the presence of an Early Archaic floor. Two Morrow Mountain points (Figure 37:j, m) were recovered in this unit at a considerably higher depth, at 37 cm and 28 cm, respectively, so an Early Archaic date for the tool cluster is possible. The stain defining Feature 4 was first noted at 53 cm, suggesting a comparable age. The amount of charcoal recovered from the floated fill, 0.06 grams is minimal, indicating that considerable erosion and leaching of the original contents has probably occurred.



FIGURE 38 — Feature 2 at 38LX64. Several small clusters of fire-cracked rock, flakes, and occasionally tools were discovered in the levels, which may represent portions of floors, hearths, or other features.



FIGURE 39 — Feature 3 at 38LX64. This feature was characterized by fired clay fragments and a moderate amount of charcoal in the fill, and appears to have been a hearth. No temporarily diagnostic artifacts were found in direct association.

Feature 5

Feature 5 was characterized by a one meter diameter cluster of fire-cracked rock, fired clay, debitage, and stone tools located from 25 to 40 cm in EU9 (Figure 40). Much of the material was concentrated from roughly 29 to 35 cm, and the area may have been a hearth or a refuse deposit of some kind. Artifacts present in the fill included one chert steeply chipped uniface (Figure 42:f), one fragmentary weathered quartzite square stemmed dart base of unknown typological affiliation, five retouched flakes (four of quartz and one of rhyolite), 39 pieces of fire-cracked rock (860.1 g), nine pieces of ferruginous sandstone (134.8 g), 43 pieces of debitage (quartz, 26, 422.5 g; chert, 14, 5.6g; quartzite, 3, 4.2 g), five small pieces of steatite, and two fragments of sandstone. The biface fragment, which is highly weathered, is square stemmed, and may be from an Otarre or Savannah River stemmed form. This tool, and the presence of steatite fragments, suggest a possible Late Archaic age for the feature. Two two-gallon samples of fill were taken from the area of the feature and floated, yielding 11.52 grams of charcoal (Samples 24 and 25, 38LX64; Chapter 8). Plant wood species identified included pine, oak, red oak, and hickory, although no subsistence remains such as nutshells or seeds were recovered. The varied charcoal assemblage, encompassing several species of wood, suggests that Feature 5 may have been a hearth area.

Feature 6

Feature 6 was a circular charcoal stain 30 cm in diameter located from 40 to 55 cm in the center of EU1. The fill was removed and floated, and identifiable plant remains were found to be exclusively pine wood charcoal (Sample 26, 38LX 64; Chapter 8). Only a few small artifacts were recovered in the fill: two chert interior flakes (0.3 g), three quartz interior flakes (0.2 g), and two fragments of fire-cracked rock (3.4 g). Given the low incidence of artifacts in the fill, and the identification of all recovered charcoal as pine, the feature is interpreted as a possible tree taproot.

Feature 7

Feature 7 was characterized by an extensive quantity of stone tools, debitage, fire-cracked rock, and ferruginous sandstone found from 74 to 115 cm in excavation Unit 14 (Figure 41). The area of the feature was discovered during bakchoe operations; cluster of lithic material was observed at -44 cm along the western cut, and a break was left in the trench (Figure 36). Subsequent excavation of this area,

as EU14, revealed the rich concentration that was designated Feature 7. The scatter of lithic artifacts originally noted in the unit, at 44 cm, proved upon excavation to be minimal in extent. The unit was continued, however, to determine the depth of the deposits in this part of the site, and consequently Feature 7 was discovered.

The artifacts comprising Feature 7 were all found in the southern half of the unit. The northern half of the unit, at the edge of the dirt farm road skirting the swamp, was characterized by a sterile, hard-packed silty clay. It was not possible to conclusively determine whether Feature 7 was aboriginal in origin. The proximity of the road and its (apparent) hard-packed base rendered the context of the cluster suspect; the artifacts, for example, may be within an old ditch or fill area. Only one small (0.02 g) fragment of charcoal was recovered from the fill of the feature (Sample 27, 38LX64; Chapter 8). The sample, identified as hickory wood, was too small to radiocarbon date. Feature 7 is interpreted as either an aboriginal raw material and tool cache, or a cluster of recently deposited materials associated with the field edge and farm road.

Artifacts present in the Feature 7 cluster included a large (5961.1 g) granite grinding basin, three hammerstone/mauls, one with a pitted face (Figure 43:a, c, f); a massive quartz core (Figure 43:b); and a quartzite Morrow Mountain II projectile point base (Figure 37:h). All of these specimens were found clustered together at about -104 cm below the ground surface. The deposits from -64 to -114 cm in EU14 contained an unusually large quantity of unmodified ferruginous sandstone (3293.7 grams). Sixty-one percent of all of the ferruginous sandstone, by weight, found on the site came from these levels. None of the ferruginous sandstone in the Feature 7 area exhibited evidence for modification or use as an abrader, although it should be noted that abraders of this material were only rarely noted in the 38LX64 site assemblage (N = 5). The only other category present in the levels near Feature 7 in quantity was steatite. Five of the 18 fragments of steatite found on the site came from 64 to 74 cm in EU14. A moderate but not unusual amount of fire-cracked rock, debitage, and other artifacts were also found in these levels, in EU14.

Feature 7 was distinguished by large quantities of ferruginous sandstone and cobble tools. The presence of a Morrow Mountain II point in the center of the cluster might suggest a tentative identification of the feature as an aboriginal, Middle to Late Archaic grinding and abrading tool cache. The proximity of the road, however, and the nearby clay lens, suggest that the deposits are disturbed, and the exact temporal designation and behavioral significance of the feature remains unknown.



FIGURE 40 — Feature 5 at 38LX64. This feature was characterized by a small cluster of fired clay and fire-cracked rock and may have been a hearth.



FIGURE 41 — Feature 7 at 38LX64. This feature contained a number of grinding tools and hammerstones, and may represent a deliberate circle of some kind. The cluster is located immediately beside a dirt farm road, however, and may have been created during grading or drainage activity.

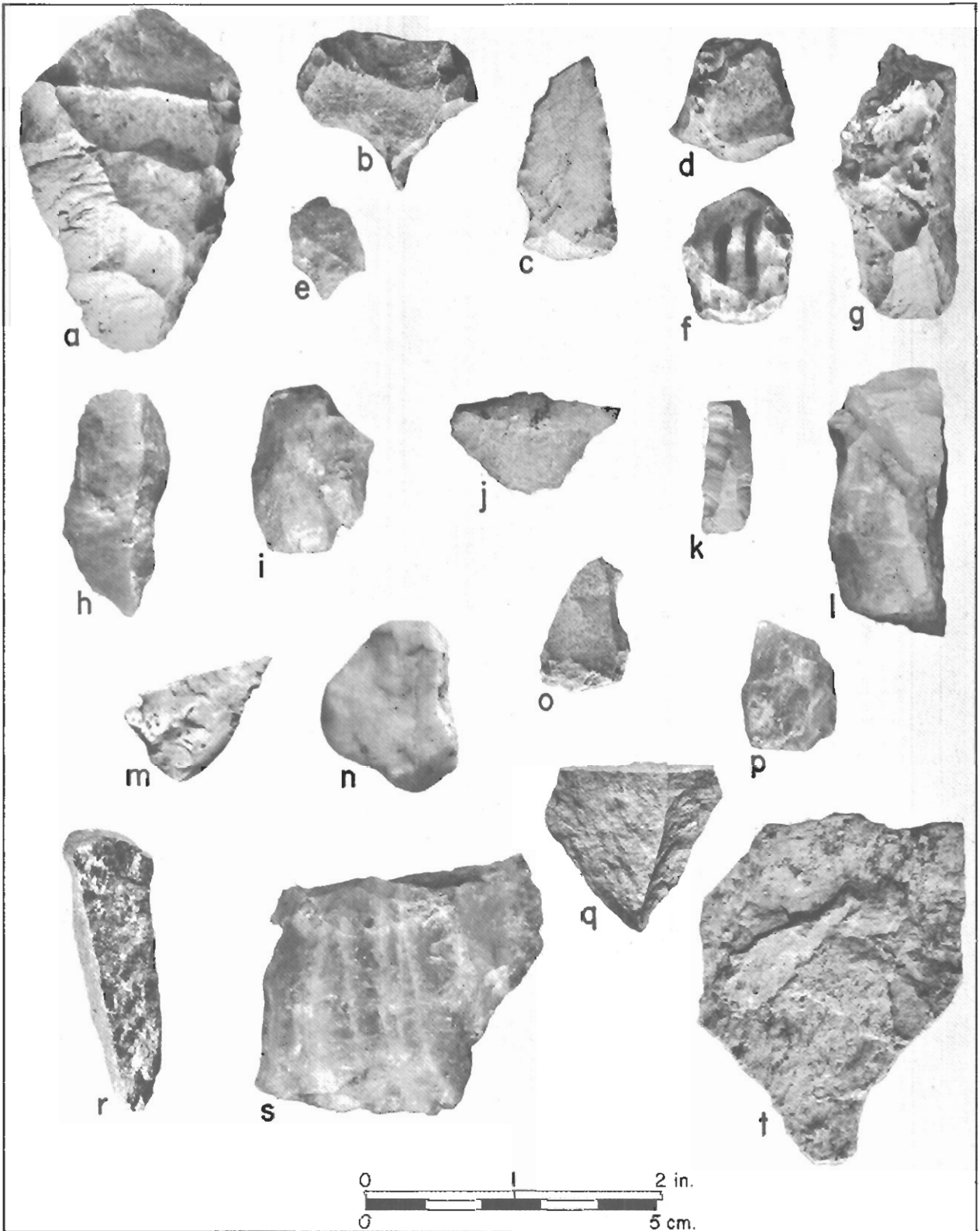


FIGURE 42 — Retouched unifacial tools, and miscellaneous artifacts, from 38LX64. a steeply chipped unifacial sidescraper; c, d, f steeply chipped unifacial endscrapers; b, e unifacial graters; g, h, j, l, o, s flakes exhibiting steep angled unifacial wear retouch; i pièce esquillée; k blade; m, p, q, t flakes exhibiting acute angled (under 50 degrees) unifacial wear retouch; n pebble with spokeshave-like concavity; r steatite rim sherd.

Proveniences: (a) EU3, -53cm (b) EU8, 30-40cm (c) EU5, 10-20cm (d) EU7, 20-30cm (e) EU3, 50-60cm (f) F5 (g) EU3, -54cm (h) general surface (i) EU1, 40-63cm (j) EU15, 55-65cm (k) EU8, 20-30cm (l) F2 (m) EU1, 40-63cm (n) EU3, 60-70cm (o) EU6, 22-33cm (p) EU6, 43-53cm (q) EU5, 0-10cm (r) EU8, 0-20cm (s) EU5, 10-20cm (t) EU6, 22-33cm.

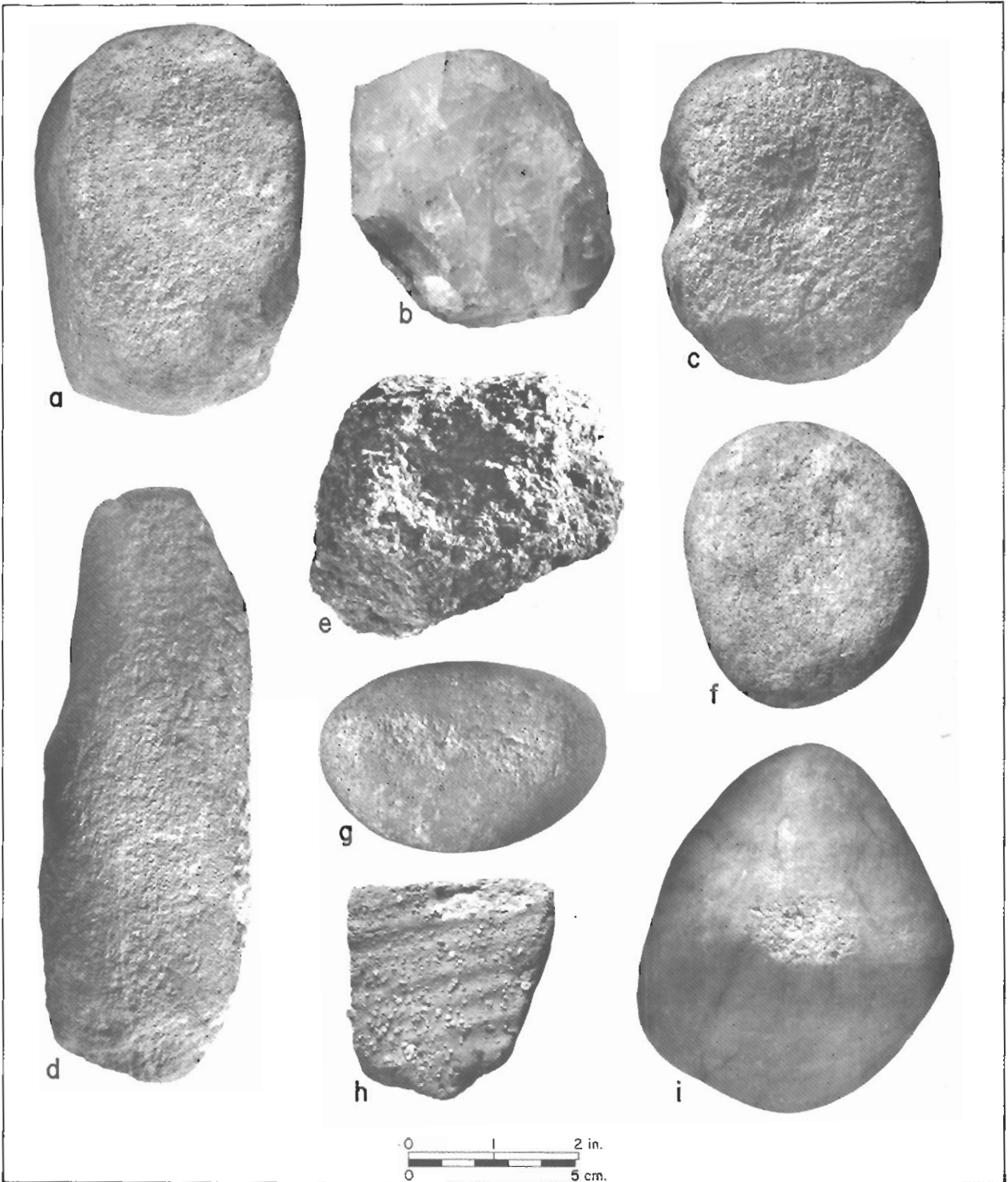


FIGURE 43 – Cobble tools and other artifacts from 38LX64. a hammerstone/maul grinding tool; b vein quartz core; c pitted cobble/maul; d hammerstone/pestle; e weathered pitted cobble; f hammerstone; g hammer/anvil stone; h simple stamped sand paste sherd (Thom's Creek?); i hammer/anvil stone.

Proveniences: (a) F7 (b) F7 (c) F7 (d) EU10, -15cm (e) EU1, 40-63cm (f) F7 (g) F3 (h) EU14, 44-64cm (i) F3.

FIRE-CRACKED ROCK AND UNMODIFIED FERRUGINOUS SANDSTONE

A total of 1927 fragments of fire-cracked rock weighing 15,270.7 g were recovered at 38LX64, the vast majority from the 1978 excavation units and features (N = 1719, 89.2 percent). Almost all of the material was composed of quartz, with small quantities of sandstone and other unidentifiable materials present. The amount of fire-cracked rock recovered, almost a kilogram per unit, on the average, indicated extensive aboriginal use of fire on the site. The presence of hearths was also suggested by the quantity of fired clay recovered in the excavation units (over 1800 grams) and the discovery of several charcoal stains and/or fire-cracked rock clusters.

A considerable quantity (N = 362, 5393.1 g) of unmodified ferruginous sandstone was also recovered on the site. This material was not found evenly distributed in the units, but tended to occur in clusters, usually with other artifacts, suggesting aboriginal utilization of some kind. The largest concentration of this material came from the Feature 7 area, and may reflect an intentional cache. The presence of ferruginous sandstone in Feature 7, with obvious cobble/grinding tools, reinforces an interpretation of probable use in abrading functions.

UNMODIFIED DEBITAGE

A total of 2537 pieces of unmodified debitage, including 50 cores, were recovered from 38LX64, and were sorted by both raw material and decortication/reduction stage (Table 12). By count (N = 1693, 66.7 percent), and particularly by weight (3753.9 g, 87.4 percent), quartz is the most common unmodified material found on the site. Lesser quantities of chert, rhyolite, slate, and quartzite are also present, with chert the second most common material, by count, in the assemblage. The relatively high incidence of chert (N = 432, 17.0 percent) is somewhat surprising, since most of the material appears to come from the Allendale Quarry over 80 miles away. More chert, by count, is present in the assemblage than the total for rhyolite, slate, and quartzite combined. This would suggest that chert was a preferred material, selected over other, possibly more easily obtainable material for certain tools or functions. Considering the probable proximity of slate and rhyolite sources in the Piedmont, the observed pattern of selection for chert over these other, local materials bears examination.

TABLE 12
 UNMODIFIED CORES AND DEBITAGE
 BY RAW MATERIAL
 SITE 38LX64 1974-1978

	<u>Cores</u>	<u>Chunks</u>	<u>PDC</u>	<u>SDC</u>	<u>INT</u>	<u>FBR's</u>	<u>Total Count</u>	<u>Total Weight</u>
Quartz	45	292	102	107	1033	113	1692 (66.7)	3,753.9 (87.4)
Chert	2	1	1	25	301	102	432 (17.0)	184.2 (4.3)
Rhyolite	1	1	1	2	53	11	69 (2.7)	76.8 (1.8)
Quartzite	2	8	4	7	125	6	152 (6.0)	163.5 (3.8)
Slate	-	4	2	1	177	8	192 (7.6)	118.7 (2.8)
Totals	50 (2.0)	306 (12.0)	110 (4.3)	142 (5.6)	1689 (66.6)	240 (9.5)	2537 (100.0)	4,297.1g (100.0)

() = percent of each category.

The average size of the unmodified debitage, and its proportional occurrence by reduction stage, indicates major differences in the use of each raw material on the site. Unmodified chert artifacts were appreciably smaller ($\bar{x} = 0.43$ g) than unmodified slate ($\bar{x} = 0.62$ g), rhyolite ($\bar{x} = 1.1$ g), quartzite ($\bar{x} = 1.08$ g), and particularly quartz ($\bar{x} = 2.22$ g). Furthermore, a much higher percentage of the chert assemblage consisted of FBRs (N = 102, 23.6 percent) than was evident for the other materials (quartz, 6.7 percent; slate, 4.2 percent; rhyolite, 15.9 percent, and quartzite, 3.9 percent). This would strongly suggest that chert use at 38LX64 was related to late stage manufacturing/reduction activity, possibly associated with tool repair or resharpening. The low incidence of initial stage chert reduction debris would also be expected, given the distance to the source. That is, since most of the chert found at 38LX64 came from the lower Savannah River and reflects transport over 80 miles, aboriginal procurement would in all probability stress efficiency. Transportation of cortical material, useless in reduction/manufacturing, would be unlikely.

The average size of the quartz unmodified debitage at 38LX64 was considerably larger than the debitage of the other lithic raw materials. The incidence of later stage quartz reduction debris, as measured by the percent of interior flakes and FBRs (67.7 percent), was also appreciably lower than the figures observed over the other raw material categories: (chert, 93.3 percent; slate, 96.4 percent; rhyolite, 92.8 percent; and quartzite, 86.2 percent). These figures suggest that proportionally more initial stage reduction of quartz was occurring on the site than of other materials. The overall debitage pattern suggests the manufacture of quartz tools, and the maintenance of tools of other raw material categories, on the site.

BIFACIAL TOOLS

The 38LX64 assemblage included two arrow fragments, 36 darts and dart fragments, and 37 bifacially worked artifacts and fragments that may have served as preforms, cutting/multitask tools or possibly finished tool fragments. Detailed measurements and inferred typological affiliations of all of the specimens recovered in 1978, and most of the earlier forms, are included in the appendix volume.

Only two possible arrow fragments were recovered on the site, one base from the surface (CSC Circle 31), and a tip in the first subplowzone level of EU10. These may be dart fragments, especially the tip; the low number of these

items is consistent with the minimal evidence for Woodland period site use. The number of darts and fragments was far greater, at 36, with 13 specimens intact. The base to tip incidence on the site was highly skewed, with almost four times as many dart bases (N = 18) recovered as tips (N = 5). This suggests tool breakage and tip loss away from the site, with the haft elements (including the broken biface base presumably still in place) brought back to the site. Discard of the broken biface bases during rehafting would result in a tip to base ratio like that observed at 38LX64. If the collected site assemblage can be assumed to be representative, than the evidence suggests that the site area was a rehafting locus.

Examination of the typologically identifiable 38LX64 biface assemblage, including all surface materials, suggested that raw material selection for dart manufacture followed different patterns in different time periods. Of a total of seven Late Archaic Savannah River Stemmed-like points found on the site (including one Otarre Stemmed form), five were of a greenish slate or rhyolite, with only one each made from quartz and quartzite. Middle Archaic Morrow Mountain-like forms (N = 11), in contrast, showed a strong preference for quartz (N = 6) and quartzite (N = 31), with only one specimen each composed of chert and slate. The Early Archaic forms also differed somewhat from the later eras in terms of raw material selection. The two Kirk forms recovered were both made of rhyolite, while all three Palmer points found on the site (two in excavation units and a third, not illustrated, from the surface) were made from Allendale County chert.

Over the entire assemblage of darts and dart fragments, quartzite (N = 6, 16.6 percent) and rhyolite (N = 6, 16.6 percent) forms were more prevalent than the relative proportions of unmodified debitage recovered for these materials, while chert (N = 5, 13.9 percent) and quartz (N = 17, 47.2 percent) darts were underrepresented. The relative proportions of slate darts and debitage were roughly similar. This suggests that the quartzite and rhyolite specimens were (possibly) imported onto the site in more or less finished form, and that comparatively more manufacture and/or maintenance of chert and quartz cherts was occurring on the site, with (possibly) finished products carried elsewhere. Alternatively, it may indicate that manufacture and/or use of quartz and chert darts results in proportionally more debitage than use of darts of the other materials. This may, in fact, be part of the answer for the observed raw material patterning at 38LX64. The small size of the unmodified chert flakes,

for example, suggests that more flakes were detached in reduction/maintenance activity than if other materials were used, probably due to the fine knapping quality of local cherts, and the resulting greater ease of control. Resharpener a chert tool probably resulted in considerably less mass wastage than resharpener tools of other raw materials. Hence, proportionally fewer exhausted chert tools, and more maintenance debris, might be expected. This is the pattern observed at 38LX64, at least for the chert artifacts.

The low proportional incidence of quartz darts to debitage, in contrast, appears to reflect greater initial reduction/manufacturing activity at the site, and probably the manufacture and use of other tool forms. The problem of relating site debitage assemblages to observed finished tool debris is complex, and involves the study of tool use, life, breakage and discard patterns, and, particularly, resolving manufacturing and maintenance byproducts. All of the darts recovered at 38LX64 appear to have been hafted knives, in addition to possible projectiles; edge angles ranged from 25 to 70 degrees, with a mean of 46.9 degrees, suggesting use in multiple tasks, with an emphasis on cutting functions.

The other biface assemblage (N = 37) included a variety of forms that appear to include dart fragments or preforms, as well as multitask cutting/scraping tools. Of 30 specimens for which detailed measurements were recorded, 26 were on quartz. This high incidence suggests a selection for local materials for less formal (more expedient?) bifacial tools. The range of working edge angles observed (30 to 80 degrees, with a mean of 48.1 degrees) is similar to that observed over the dart assemblage, indicating a probable similar functional orientation.

RETOUCHED FLAKES AND OTHER UNIFACIAL TOOLS

Eighty-three unifacial tools were recovered from 38LX64, including 65 retouched flakes, 11 steeply chipped unifactes, three gravers, one pièce esquillée, one burin, one spokeshave, and two denticulates. The retouched flake assemblage (for which detailed measurements are available for 64 specimens) is, to a large extent, composed of quartz (N = 45, 70.3 percent), with other materials in descending order of importance: chert (N = 10, 15.6 percent), slate (N = 5, 7.8 percent), rhyolite (N = 3, 4.7 percent), and an unknown igneous(?) material (N = 1, 1.6 percent). The proportion of retouched flakes by each raw material category is

similar to the proportional occurrence of the nonretouched debitage for that material (Table 12). This suggests the opportunistic use of readily available materials or debitage in the production and/or use of the retouched flake tools found on the site.

Table 13 summarizes the relationship of retouched flake size and edge angle by raw material category. It is apparent that in the manufacture and use of retouched flakes on the site, some selection linkage occurred between raw material and intended function. Chert and rhyolite appear to have been selected when low edge angles were desired, with quartz and slate chosen for tools with higher functional edge angles. This selection practice appears directly related to the physical (flaking) properties of each particular raw material, and not to idiosyncratic preferences. Chert and rhyolite are both fine-grained, isotropic materials that yield sharp cutting edges when flaked, while slate and quartz are more resistant materials, that yield steeper edges. This tendency was also discussed in relation to the 38LX5 retouched flake assemblage in Chapter 4. The overall orientation of the 38LX64 retouched flake assemblage appears towards low functional edge angles. Deliberate selection for cortical flakes or chunks also characterizes the 38LX64 retouched flake assemblage. Twenty-seven of 64 measured retouched flakes, or 42.2 percent, are on chunks or decortication flakes, as opposed to an only 21.9 percent incidence of these reduction stages in the unmodified assemblage. The selection of these early stage pieces appears to be for backing, to facilitate hand-held use; many of the tools exhibit functional edges opposite cortex or broad flat surfaces.

Detailed measurements were recorded for eight of the 11 steeply chipped unifaces recovered on 38LX64; three of these artifacts exhibit only wear retouch and were summarized with the retouched flake assemblage (Figure 42). Half of these tools are on quartz and the remainder on chert (N = 3) or rhyolite (N = 1), suggesting some selection for fine-grained, extralocal materials in the manufacture of steeply chipped unifaces. All four of the quartz unifaces displayed only one functional edge; the chert and rhyolite steeply chipped unifaces, in contrast, all had two or three working edges. This would suggest that quartz was an opportunistically employed material; the unifaces of quartz are less elaborate and less carefully prepared than the others, supporting this inference. The average functional angles of the eight steeply chipped specimens, 57.7 degrees, suggests a multitask, predominantly scraping orientation (cf. Wilmsen 1970:20).

TABLE 13
SUMMARY DATA ON THE 38LX64 RETOUCED FLAKE ASSEMBLAGE

<u>Raw Material</u>	<u>Frequency</u>	<u>Total Weight</u>	<u>Average Weight</u>	<u>Average Edge Angle</u>	<u>Average # of Edges</u>
Quartz	44	294.4	6.7	45°	1.2
Chert	10	23.7	2.4	37°	1.9
Slate	4	37.9	9.5	54°	1.8
Rhyolite	3	32.4	10.8	34°	1.7
Other	1	6.5	6.5	63°	2
Total	62	394.9	6.4	44°	1.8

A single chert blade (bladelet) was recovered from 38LX64 (Figure 42:k). It was 2.3 cm long, .8 cm wide, .2 cm thick, and weighed 0.5 grams. Two previous flake scars run longitudinally down the dorsal surface, and there is evidence for lateral (wear) damage which may be accidental. The distal end has bifacial flaking which produced a working surface 7 mm wide. Probable use appears to have been in cutting functions. One quartz *pièce esquillée* was found at 38LX64, measuring 2.8 cm long, 1.9 cm wide, 1.0 cm thick, and weighing 7.2 grams (Figure 42:i). It is wedge-shaped with a blunt battered cortical surface on its proximal end. Following Binford and Quimby's (1963) terminology, the distal end is the point of percussion which has been formed by the convergence of several cleavage faces. Chapman (1975:148-149) has recognized similar artifacts which he refers to as "Ridge Area *Pièces Esquillées*" at Rose Island. The function of this tool at 38LX64 may have been for splitting wood or bone.

A single well-defined spokeshave tool (Figure 42:n) was recovered at 38LX64, in EU3 below the Feature 4 concentration. The tool is on a 9.9 gram quartz pebble, with a long (1.5 cm) and shallow (0.1 cm) semicircular concavity. Several other flakes exhibit evidence for spokeshave surfaces (e.g. Figure 42:l), and the tool form is probably more prevalent than currently recognized in this general area. Three graters were also recovered on the site, and exhibit careful, intentional workmanship (Figure 42:b, e). All were found at considerable depths, and may be of Early Archaic age. These tools probably served an engraving or piercing function. A single technological burin (accidentally produced?) was observed on a flake from the Feature 7 area; two irregular serrated flakes were also recovered from these levels and appear to be denticulate forms, although possibly accidentally produced.

COBBLE TOOLS AND ABRADERS

A total of 62 cobble tools and abraders were recovered at 38LX64, including 45 hammerstones and hammerstone fragments, six possible abrader faceted cobbles, four pitted cobbles, two possible grinding basins, and five possible ferruginous sandstone abraders. Only 11 hammerstones were recovered intact. The remainder were broken fragments, some of which may have been recycled for hearth stones. All but six of the 45 are made of quartz. The remainder are sandstone (N = 4), quartzite (N = 1), and granite (?) (N = 1). The average weight of the intact specimens was 383.4 grams, and most were characterized by moderate to extensive battering. The massive battering and crushing evidence on a number of

these specimens suggests use in a variety of functions. One sandstone specimen (Figure 43:d) appears to be a combination hammerstone, abrader, and pestle. Several other specimens exhibit evidence for multiple functions, including combination hammerstone/anvils/pitted cobbles (Figure 43:e, j), or hammerstone/abraders/mauls (Figure 43:a).

Six abrader faceted cobbles were recovered in the assemblage, including a possible grinding slab recovered at a depth of 75 cm in the western trench, near the swamp edge. This slab, which weighed 2765.7 grams, was found in the silt-sands defining the swamp deposits proper, and may have been tossed there by one of the aboriginal visitors to the site. No evidence for deliberate modification or abrasion is present, but the specimen is highly weathered, rendering such judgments tenuous. The remaining abrader faceted cobbles included one hammerstone/maul combination tool from Feature 7 (Figure 43:a) and four fragmentary specimens with suspicious flattened areas. All but one of the objects are composed of unidentifiable igneous or metamorphic materials, the exception is made of quartz. These materials may have been chosen for their resistant textures, although function remains unclear.

Two probable grinding basins were recovered in the units, one of quartz in Feature 2, and the other, a massive (5961.1 g) basin, in Feature 7. The quartz specimen is small and fragmentary, weighting 230.0 grams; it may be more appropriately a pitted cobble/anvil stone. The other, massive grinding basin, in contrast, has a large (14.9 cm diameter) circular depression 0.6 cm deep that exhibits crushing and pecking, suggesting use in milling rather than strictly grinding tasks.

Five ferruginous sandstone abraders were recovered at 38LX64, two near the Feature 2 scatter and the remaining three in subplowzone excavation unit levels. All of the specimens exhibit either flattened areas or slightly U-shaped grooves suggesting abrasion. One specimen, found in the level above Feature 2, exhibited extensive smoothing and was almost certainly used as a source of pigment, or for abrading some other material. The number of possible abraders, five, is somewhat low considering the moderate amounts of this material that occur in an unmodified state on the site (5393.1 g).

MISCELLANEOUS LITHIC ARTIFACTS

A number of unusual lithic artifacts were recovered in the deposits at 38LX64, including 18 fragments of steatite, 36 pieces of apparently unmodified sandstone, 19 pieces of gneiss, 10 pieces of slate that may have been part of carved gorgets, 10 pieces of a fine-grained ferruginous sandstone or hematite, and 37 fragments of split gravel. All of the steatite fragments were recovered in the excavation units, and 13 of the fragments (72.2 percent) came from the fill of Features 1, 5 and 7. Most of these steatite artifacts were small, weathered fragments, of uncertain use. One well-carved vessel rimsherd was recovered, however, in the first subplowzone land of EU8, just above the Feature 3 area (Figure 42:r). The sherd exhibits a pronounced lip and strongly resembles Late Archaic and Woodland period ceramic rimsherds found in the South Carolina area. A Middle to Late Archaic age is suggested for the steatite, inferred primarily by its subplowzone and feature associations.

The sandstone, split gravel, hematite, and schist specimens collected from 38LX64 do not exhibit unusual or clustered distributions. Most were found within the excavation units, and are thus probably aboriginal imports, but origin and function remain obscure. As noted in the discussion of the 38LX82 materials, the split gravel category could easily obtain from shovel or plow damage to gravel naturally occurring in the units. The final category consisted of ten fragments of a thin, slate-like material. Eight pieces were recovered in EU8, one in EU9, and one in EU14, in the Feature 7 levels. The fragments are all flat and may be portions of carved gorgets, but no evidence for intentional modification (carved or incised lines, or striations) was observed.

CERAMIC ARTIFACTS

Sixteen potsherds characterized by a sand paste were recovered at 38LX64, together with 1822.8 grams of fired clay. None of the fired clay was clearly identifiable as daub. The material occurred predominantly in or near features, however, suggesting an origin in or near hearth areas for much of the assemblage. The pottery finishes present included nondiagnostic (N = 6), plain (N = 4), linear separate punctate (N = 2), cord marked (N = 2), linear check stamped (N = 1) and simple stamped (N = 1). Nine of the 16 sherds came from the excavation units, and seven from the site surface, but no logical stratification was apparent. The paste/finish combinations indicate Late Archaic and Woodland site use; specific wares present included

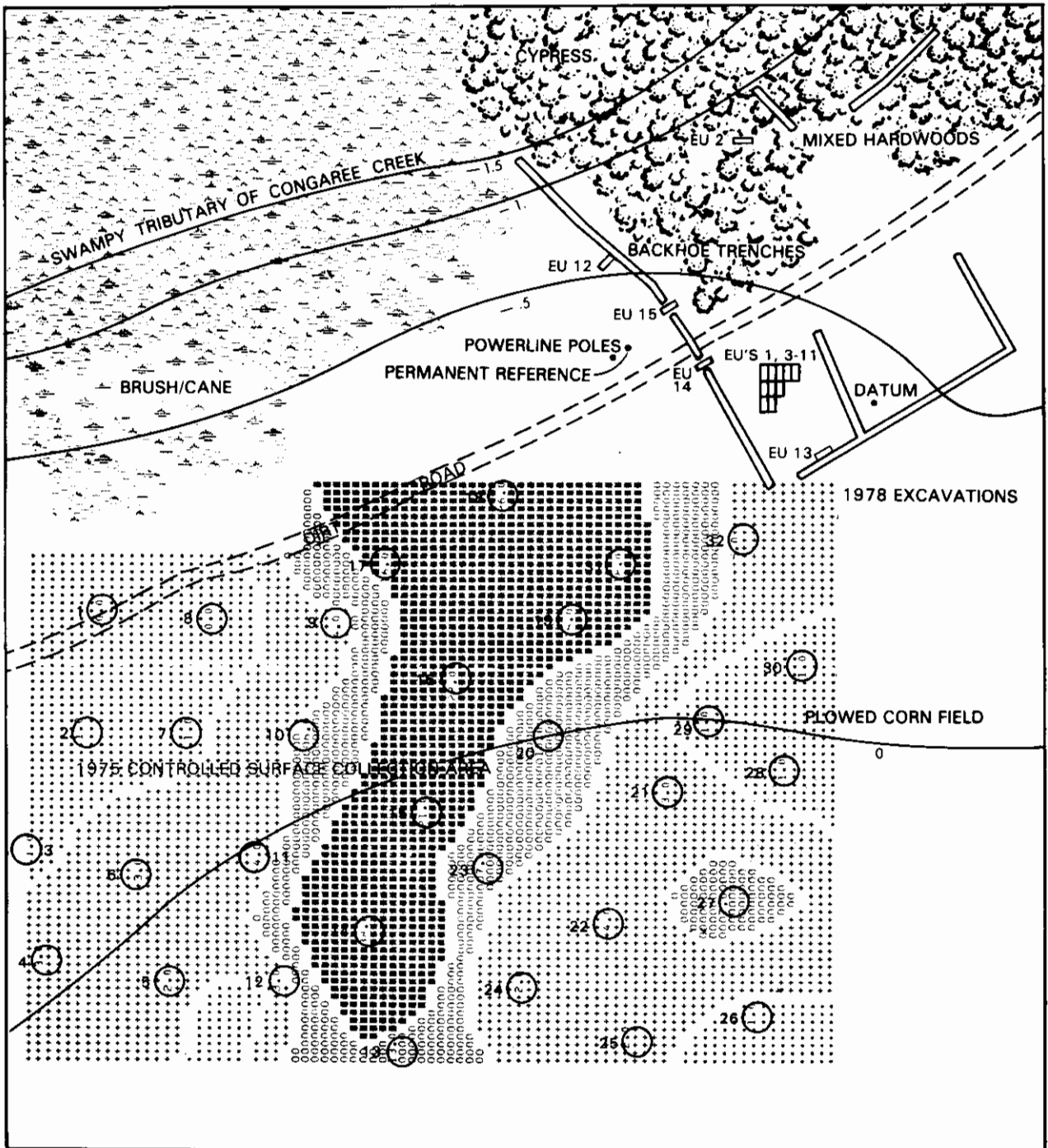
Thom's Creek punctate (N = 2), Deptford linear check stamped (N = 1), and Cape Fear cord marked (N = 2). The plain pottery is unclassifiable, although Thom's Creek or Deptford (Woodland) affiliation is probable. The single simple stamped sherd (Figure 43:h) had an unusual amount of coarse sand in its paste and may be either a Thom's Creek or Deptford ware. The presence of considerable quantities of fine and medium sand warranted retention in the original paste category, however, rather than classifying the sherd as coarse sand/grit tempered. The latter category, observed at 38LX5, consisted of a temperless (pure clay) matrix, to which (only) coarse sand inclusions were added. The low incidence of pottery at 38LX64 suggests minimal post-Late Archaic use of the immediate area.

CONCLUSIONS: THE 38LX64 SITE ASSEMBLAGE IN RETROSPECT

Site 38LX64 was found to contain components dating from the Early Archaic through Early Woodland periods. The main period of site use appears to have been during the preceramic Archaic, and a series of separate occupations dating to this period are inferred by diagnostic biface forms, including Palmer, Kirk, Morrow Mountain I and II, and Savannah River Stemmed. Woodland period site was minor, and was inferred by the presence of Thom's Creek, Deptford, and Cape Fear ceramics.

Through analysis of the 1975 controlled surface collection data (Figure 44), it is apparent that the richest part of the 38LX64 scatter is located from 30 to 80 meters to the southwest of the area examined in 1978. The excavations were hardly fruitless, however. Large quantities of artifacts and a number of features were detected in the units, and the data assemblage provides a needed first view of Archaic period use of the floodplain/tributary margin environment.

The artifact and feature assemblage from 38LX64 included evidence for hearth areas, for the manufacture, use, and maintenance of a variety of stone tools, and for the presence of a cobble tool industry oriented towards both stone working and plant processing. Extended habitation of the site area, or at least repeated reuse, is indicated by the quantity of material recovered, particularly fire-cracked rock, and the diversity of functions implied by the stone tool assemblage (cf. Ferguson 1976, House and Wogaman 1978).



MAP SOURCE: C.A.I. Field Survey, 1978.

MINIMUM LEVEL	1	2	3	4
MINIMUM	0.0	1.62	5.6	13.74
MAXIMUM	1.62	5.6	13.74	30.00
SYMBOLS	.....	+++++	ooooo	ooooo
	.....	+++++	ooooo	ooooo
	.....	+++++	ooooo	ooooo
	.....	+++++	ooooo	ooooo
	.....	+++++	ooooo	ooooo



SOUTH CAROLINA



0 20 METERS

50 CM. Contour Interval

SOUTHEAST COLUMBIA BELTWAY PROJECT
SOUTH CAROLINA DEPARTMENT OF HIGHWAYS AND PUBLIC TRANSPORTATION

SITE 38LX64 BASE MAP
CONTROLLED SURFACE COLLECTION
ALL PREHISTORIC ARTIFACTS — COUNT DATA

FIGURE 44

CHAPTER 8

ETHNOBOTANICAL ANALYSIS OF CARBONIZED PLANT REMAINS FROM TWO FALL LINE SITES, LEXINGTON COUNTY, SOUTH CAROLINA

INTRODUCTION

Carbonized plant remains recovered from two of the project sites, 38LX5 and 38LX64, were submitted to Suzanne E. Harris of the Southeast Missouri State University Center for Archaeological Research, for ethnobotanical analysis. The Southeastern Columbia Beltway project marked the first extensive effort to recover and analyze ethnobotanical remains from the central South Carolina area, and a major research objective was determining whether carbonized plant material of value to subsistence and paleoenvironmental reconstruction studies could be recovered from Fall Line area sites. The ethnobotanical analysis results presented here, coupled with the five viable radiocarbon dates reported in Chapter 4, indicate that carbonized plant remains of value to archeological analyses are to be found on sites in this area, and that these remains can be quickly and efficiently recovered during field excavations.

METHODOLOGY

Site 38LX5 is located on a sandy knoll about 1/2 mile south of Congaree Creek, in the upland/sandhills area, a region presently dominated by pines and scrub hardwoods. Twenty-two ethnobotanical samples were examined from 38LX5, (Table 14) encompassing fill from three possible Middle Archaic features (six samples), two possible Early Woodland hearths (seven samples), one Archaic or Early Woodland feature (seven samples), and at least two probable tree roots (two samples). Site 38LX64, in contrast, is located at the edge of a broad swampy tributary of Congaree Creek, in an area that at the present is grown up in hardwoods. Ten ethnobotanical samples were examined from 38LX64, encompassing fill from one possible Early-to-Middle Archaic feature (one sample), one possible Middle Archaic feature (one sample), and two possible Late Archaic features (six samples) (Table 14). The remaining two ethnobotanical samples from 38LX64 came from apparent disturbances, which may be either Archaic or recent in origin.

TABLE 14

ETHNOBOTANICAL SAMPLES: PROVENIENCE, CULTURAL AFFILIATION,
RECOVERY TECHNIQUES, INITIAL SAMPLE VOLUME, AND WEIGHTS
OF CARBONIZED PLANT MATERIAL
SITE 38LX5

Provenience	Cultural Affiliation	Sample No.	Recovery Technique	Soil Sample Volume	Weight Carbonized Plant Material
Feature 1	Early Woodland	1	Flotation	2 gallon	.95
Feature 1	Early Woodland	2	Handpicked		8.17
Near Feat. 1	Possible root?	3	Handpicked		152.45
Feature 2	Possible Archaic/Early Woodland	4	Flotation	2 gallon	4.06
Feature 2	Possible Archaic/Early Woodland	5	Flotation	2 gallon	1.83
Feature 2	Possible Archaic/Early Woodland	6	Flotation	2 gallon	1.15
Feature 2	Possible Archaic/Early Woodland	7	Handpicked	2 gallon	1.04
Feature 2	Possible Archaic/Early Woodland	28	Flotation	2 gallon	.12
Feature 2	Possible Archaic/Early Woodland	29	Flotation	2 gallon	.68
Feature 2	Possible Archaic/Early Woodland	30	Flotation	2 gallon	10.92
Feature 4	Possible Middle Archaic	8	Flotation	2 gallon	1.83
Feature 5	Possible Middle Archaic	9	Flotation	2 gallon	1.44
Feature 5	Possible Middle Archaic	10	Flotation	2 gallon	1.25
Feature 5	Possible Middle Archaic	11	Flotation	2 gallon	.26
Feature 6	Possible Middle Archaic	31	Flotation	2 gallon	.1
Feature 6	Possible Middle Archaic	32	Flotation	2 gallon	.1
Feature 9	Possible Early Woodland	12	Flotation	2 gallon	11.74
Feature 9	Possible Early Woodland	13	Handpicked	10 gallon	8.95
Feature 9	Possible Early Woodland	14	Flotation	10 gallon	5.94
Feature 9	Possible Early Woodland	15	Handpicked		19.62
Feature 9	Possible Early Woodland	16	Handpicked		1.54
EU35	Tree root	17	Flotation	2 gallon	50.65
SITE 38LX64					
Feature 1	Middle Archaic	18	Flotation	2 gallon	.18
Feature 3	Possible Late Archaic	19	Flotation	2 gallon	9.24
Feature 3	Possible Late Archaic	20	Flotation	2 gallon	43.63
Feature 3	Possible Late Archaic	21	Handpicked		11.31
Feature 3	Possible Late Archaic	22	Flotation	2 gallon	12.16
Feature 4	Possible Early/Middle Archaic	23	Flotation	2 gallon	.06
Feature 5	Possible Late Archaic	24	Flotation	2 gallon	.28
Feature 5	Possible Late Archaic	25	Flotation	2 gallon	11.24
Feature 6	Possible Archaic or Root	26	Flotation	2 gallon	13.35
Feature 7	Possible Middle Archaic	27	Flotation	2 gallon	.02

Fifteen samples from 38LX5 and eight samples from 38LX64 were recovered through flotation of two gallon soil samples; one ten gallon soil sample (14) was also floated from 38LX5 (Table 14). The remaining samples, six from 38LX5 and one from 38LX64, represent relatively large wood charcoal fragments that were handpicked from the fill using a trowel and/or surgical tongs.

All fill samples were placed in plastic trash sacks in the field, and were floated the last week of the excavations, in mid-August 1978. The flotation process was accomplished in the waters of a dammed stream located north-east of Site 38LX5. Fill was poured into a partially submerged wooden frame lined with window screen, and then agitated until all of the smaller soil particles washed through the bottom. Once the water in the frame cleared, it was an easy matter to scoop up visible charcoal using a rice strainer lined with finely woven cloth. Gentle agitation of the water caused the lighter charcoal fragments to rise above the heavier artifacts trapped in the screen bottom; by careful use of the rice strainer it was possible to recover all of the charcoal in the screen.

The samples were initially dry screened and rough sorted in the laboratory. Since the samples were strained through closely woven cloth, minute particles and seeds were recovered, as well as larger chunks of charcoal and recent organic debris. The samples were passed through 1/4" and 1/16" mesh and the major recent contaminants (principally roots) were removed. The material caught by these two screens was then sorted for subsistence remains (nutshell and seeds) (Table 15). The material which passed through the 1/16" mesh was sorted only for seeds since attempts at identifying minute fragments of wood or resin charcoal are extremely time-consuming and yield little additional information. Although numerous small seeds were recovered, all appear to be naturally carbonized, and relatively recent in age.

The ethnobotanical samples from the two sites consisted almost entirely of wood charcoal. Two other categories of material, a black shiny substance, probably pine resin, and a very thin flat material, possibly small leaf fragments, were noted, but an attempt to sort these out and quantify them was abandoned given time limitations and the lack of obvious significant information which this endeavor would yield. Wood charcoal was identified from each sample (Tables 16 and 17). A standard 20 pieces per sample were

TABLE 15
 ETHNOBOTANICAL SAMPLES CONTAINING CARBONIZED
 SUBSISTENCE MATERIAL (NUTSHELL)
 SITE 38LX5

<u>Feature</u>	<u>Cultural Affiliation</u>	<u>Sample No.</u>	<u>Wt. Acorn</u>	<u>Hickory</u>
2	Possible Archaic/Early Woodland	4	.02	.06
2	Possible Archaic/Early Woodland	5	.05	-
2	Possible Archaic/Early Woodland	6	.02	-
2	Possible Archaic/Early Woodland	29	<u>.03</u>	<u>.09</u>
Subtotal			.12	.15
4	Possible Middle Archaic	8	2.01	.13
9	Early Woodland	12	-	.04

Note: No subsistence material was recorded from Site 38LX64.