Chapter 6

CHIPPED-STONE, GROUND-STONE, AND OTHER ARTIFACTS

Archaeological excavations at the Ashe Ferry site recovered 14,323 chipped and ground stone artifacts (Table 6.1; Appendices F2 and F3). The overwhelming majority (95.6%) of the chipped stone specimens are flakes, chipped cores, and bifaces that represent the byproducts and unfinished products of stone tool manufacture. The remaining chipped stone artifacts include projectile points, hoes, drills, perforators, worked flakes, and other unifacial tools. Ground stone artifacts consist of hammerstones, celts, anvil stones, large stones used in processing plant foods, other pitted, abraded, and polished stones and polished stone fragments, a piece of a stone gorget or pendant, and two stone pipes. Other artifacts recovered or recorded at Ashe Ferry include more than 13,000 fragments of fire-cracked rock, 13 clay pipe fragments, a pottery disk, an unidentified fired-clay object, and almost 900 other fragments of daub and fired clay.

Chipped-Stone Production Debris

Most of the chipped-stone artifacts recovered from Ashe Ferry can be characterized as debris that resulted from the production of stone tools. These materials were placed into one of two categories—cores and flakes. Cores and unmodified flakes appear to be attributable largely to the production of chipped-stone arrow points, but also reflect the debris from creating ad hoc unifacial tools for cutting and scraping, bifacially worked drills and perforators, and hoes.

Eight raw material categories are recognized among the Ashe Ferry cores and flakes (Figure 6.1). The most ubiquitous material, representing 67% of cores and 85% of flakes, is metavolcanic stone classified geologically as dacite. Within this diverse material class, more than 60% of cores are made of a dark gray to black, aphyric rhyolite, and more than 80% of the flakes also appear to be of this material. Rhyolites and other metavolcanic rocks derive from the Carolina Slate Belt, which extends through the Carolinas immediately east of Ashe Ferry. These rocks were produced through various combinations of volcanism, sedimentation, and metamorphism, and they were used throughout human prehistory in the Piedmont because of their availability and fine-grained, cryptocrystalline properties (Rogers 2006). Rhyolite outcrops and quarries are documented in southern and eastern Lancaster County, approximately 35 km from Ashe Ferry (Christopher R. Moore, personal communication 2012).

Vein quartz is the only other raw material used with any regularity, and it is represented by 22% of the cores and 12% of the flakes. Quartz appears to have been acquired primarily as stream cobbles that were broken and knapped to produce usable flakes. Crystal quartz and quartzite were utilized only rarely, with each accounting for less than 1% of cores and flakes. Despite this, both quartzite and quartz stream cobbles were commonly used in hearths and, fire-broken cobbles were plentiful at the site.

Orthoquartzite appears to have been used primarily for large tools such as chipped-stone hoes. Three of the eight hoes recovered were made of this material, and most of the orthoquartzite flakes and core fragments were significantly larger than those of quartz or metavolcanic stone. Only eight orthoquartzite cores and 67 flakes were recovered. The source area for orthoquartzite is not known but presumed to be local. The one core with an exterior surface has a rough, weathered cortex rather than a water-worn cobble cortex, suggesting that orthoquartzite was obtained from an upland outcrop rather than from a stream bed.

Table 6.1. Summary of Stone Artifacts Recovered from the Ashe Ferry Site.

	Features								
Category	Late Archaic	Middle Woodland	Late Woodland	Missis-sippian	Indet.	Non-Cultural	Unit Excav.	Trench Excav.	Total
Projectile Point	1	-	95	3	-	4	265	89	457
Preform	-	-	-	-	-	-	-	1	1
Biface	3	-	4	2	-	2	26	13	50
Drill	-	-	-	-	-	-	8	5	13
Perforator	-	-	-	-	-	-	4	-	4
Chipped Hoe	-	-	4	1	-	-	1	2	8
End Scraper	-	-	-	-	-	-	1	-	1
Worked Flake	-	-	3	3	-	-	52	10	68
Core	4	-	17	-	-	1	50	31	103
Flake	2	1	2,707	259	30	211	9,589	771	13,570
Celt	-	-	3	-	-	-	2	3	8
Gorget	-	-	-	-	-	-	-	1	1
Pipe	-	-	1	-	-	-	-	-	1
Possible Milling Stone	-	-	2	-	1	-	3	-	6
Pitted Stone	-	-	-	-	-	-	1	2	3
Nutting Stone	-	-	1	-	-	-	-	-	1
Hammerstone	-	-	3	-	-	-	1	5	9
Modified Cobbles and Pebbles	-	-	3	-	-	-	6	8	17
Utilized Minerals	-	-	1	-	-	-	1	-	2
Total	10	1	2,844	268	31	218	10,010	941	14,323

Two types of non-local chert are represented within the flake sample. Thirty-two small, bifacial thinning flakes and one broken small triangular projectile point were made of gray to black, translucent, highly lustrous, fine-grained chert. This chert is similar to Knox Black Chert, derived from the Knox formation in east Tennessee, and occurs in low to moderate frequencies within late prehistoric assemblages in western North Carolina (Dickens 1976:135; Kimball 1985:41). Nine small, bifacial thinning flakes were classified as coastal plain chert. They appear, based upon macroscopic characteristics, to be attributable to the Flint River Formation of western Allendale County, South Carolina (Goodyear and Charles 1984). These specimens are lustrous, fine-grained, opaque, and have variegated color that ranges from pink to maroon. All appear to be thermally altered.

Finally, a single greenstone flake was recovered from unit excavations. It appears to be a spall from a ground-stone celt, as it shows evidence of grinding and polishing on the exterior surface. As such, it likely resulted from tool damage and not tool production. Eight greenstone celts and celt fragments were recovered, and these are discussed below under "Ground Stone Artifacts." As Gall and Steponaitis (2001:99) note, "*Greenstone* is a very general term used in geology to describe a great variety of lithologies usually formed from the low-grade (e.g., greenschist-facies) metamorphism of mafic and ultramafic igneous rocks (e.g., basalt, dunite) or their sedimentary equivalents." It is well-suited for the manufacture of axes and celts because of its "physical properties of toughness (resistance to breakage), high density (>3.0 g/cm^3), and moderate hardness (6 to 7 on the Mohs' hardness scale)." Greenstone tools at Ashe Ferry likely derive from one or more sources within the Carolina Slate Belt.

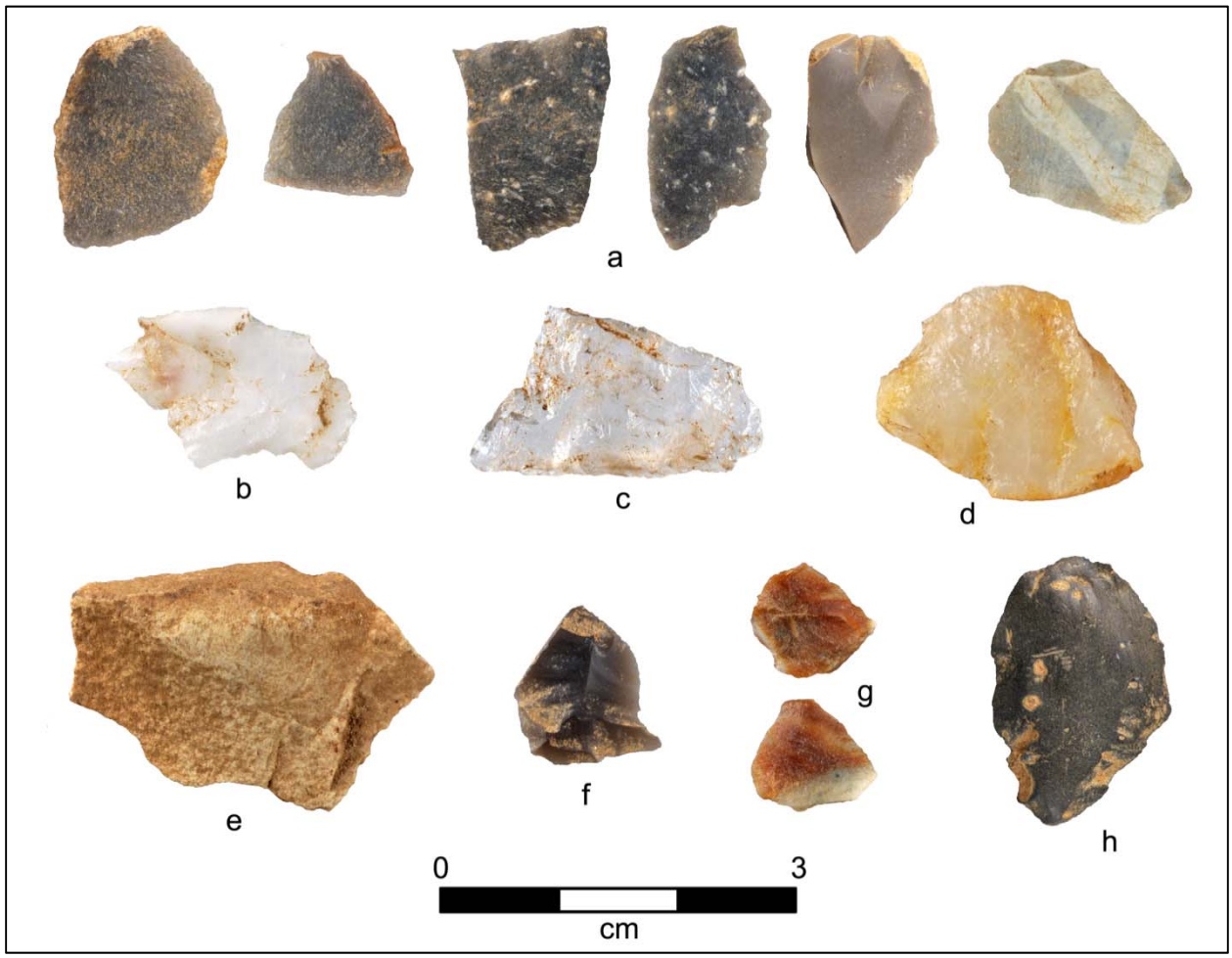

Figure 6.1. Lithic raw material types represented at the Ashe Ferry site. a: dacite; b: vein quartz; c:quartz crystal; d: quartzite; e: orthoquartzite; f: Knox chert; g: Allendale chert; h: greenstone .

Cores

A core is a mass of knappable stone that exhibits one or more scars where flakes have been intentionally removed by percussion. The flakes detached from a core represent potential blanks for creating unifacial and bifacially worked tools as well as unusable detritus. One hundred and three cores were identified from the excavated collection of lithic artifacts. Most were made of fine-grained aphyric rhyolite (n=43 or 42%), other metavolcanic stone including rhyolite variants (n=26 or 25%), and vein quartz (n=24 or 23%). Eight large cores were made of orthoquartzite, and single examples of quartzite and quartz crystal cores were found. Most of these raw materials are found both locally and to the northeast within the southern Uwharrie Mountains; however, because of the variability in metavolcanic stone that exists within the Carolina Slate Belt, it is not possible at present to determine a specific source area for the materials utilized at Ashe Ferry (see Steponaitis et al 2006 for a more detailed analysis of variability in metavolcanic stone within the Carolina Slate Belt).

Rhyolite cores were generally smaller than those of other raw material, with more than half (n=23) being less than 4 cm in diameter. Most were amorphous in shape with random flake scars; however, four were bifacially worked. Thirty-eight exhibited patches of rough, weathered cortex on the exterior surface, indicating that they were collected from above-ground outcrops. Twelve of these had only one or two flake-removal scars and appear to have been tested for usability and discarded. Two rhyolite cores had patches of smooth, water-worn cortex and apparently were collected from a stream bed; three others exhibited no remaining cortex.

Cores made of metavolcanic stone not specifically identified as aphyric rhyolite were generally larger than those just described, with all but four (85%) ranging from 4–10 cm in diameter. All possessed an amorphous shape. Seventeen of these also exhibited no cortex, suggesting that: (1) they were utilized to a greater extent than rhyolite cores; (2) they did not possess a weathered cortex when collected or mined; or (3) they were partially reduced by flaking before being brought to the site.

The 23 vein quartz cores are uniformly distributed in size from about 3 cm to 8 cm in diameter. About two-thirds are stream cobbles that were broken and then flaked randomly or in a bifacial fashion along one edge. It is presumed that most quartz cores lacking a cortex also were reduced from broken stream cobbles. One unusual specimen is a bi-directional tabular core with parallel flake scars that was used to remove blade-like flakes.

Fifty of the 103 cores were recovered from unit excavations; 31 cores were found while stripping trenches; 17 cores (including eight other metavolcanic, four rhyolite, four vein quartz, and one quartzite cores) came from features attributable to the Late Woodland period; four rhyolite cores came from a single Late Archaic feature; and one rhyolite core came from a non-cultural feature. No cores were recovered from Mississippian features.

Flakes

Chipped-stone flakes comprise 94.7% (n=13,570) of all stone artifacts recovered from Ashe Ferry. While some of these flakes were created during the reduction of stone cores to produce usable flake blanks for fashioning unificial and bifacial tools, most appear to be direct byproducts of biface production (i.e., bifacial thinning flakes). Given the predominance of small chipped-stone arrow points within the overall sample of tools from the site, it seems likely that the majority of small thinning flakes resulted from the manufacture of these tools.

During analysis, flakes were classified by raw material, size, and presence/absence of cortex. While no attempt was made to discriminate between decortication, interior, and bifacial thinning flakes, the path from initial core reduction and flake blank creation to bifacial finishing corresponds well with the reduction in overall flake size and removal of cortex. Consequently, attributes of size and presence of cortex can be regarded as general indicators of where in the reduction sequence those flakes were removed.

It should be pointed out that the size distribution of flakes, particularly very small flakes, is not directly comparable between contexts due to differing recovery methods. Artifact samples collected while stripping trenches did not result from systematic screening of soil; all artifacts from unit excavations were recovered by screening soil through a 1/4-inch screen; and all soil from excavated features was waterscreened through a 1/16-inch screen to recover artifacts. The sample bias resulting from different screen sizes can be assessed by comparing the percent of flakes in each of the size categories for unit and feature excavations. The smallest size category, 0–1 cm, contains all flakes smaller than one quarter inches (0.635 cm) as well as some flakes that would have been caught in a 1/4-inch screen (i.e., between about 0.635 cm and 1 cm in size). Flakes from unit excavations exhibit the following size distribution: 0–1cm (8.5%), 1–2 cm

(78.4%), 2–4 cm (12.4%), 4–6 cm (0.6%), and >6 cm (0.1%). Flake sizes from feature excavations are as follows: 0–1cm (18.8%), 1–2 cm (70.4%), 2–4 cm (10.1%), 4–6 cm (0.7%), and >6 cm (0.1%). As expected, the smallest flakes are under-represented by the use of a 1/4-inch screen; however, whereas the two smallest size categories display significant differences between recovery screen sizes, together they comprise roughly the same proportion of the total samples, and the larger size categories are about the same. This reflects the fact that, for both units and features, most flakes are less than 2 cm in size—the flake sizes one would expect from the production of small chipped-stone tools.

The distributions of flakes by context, raw material, size, and presence/absence of cortex are presented in Tables 6.2 and 6.3. Within all contexts where artifacts were recovered by screening (i.e, excluding artifacts from trench stripping), the overwhelming majority (71–91%) of flakes are less than 2 cm in size and 84–94% are made of metavolcanic stone, principally aphyric rhyolite. Vein quartz comprises most of the remaining debitage and has a size distribution similar to the metavolcanics, but is less well represented within Mississippian and other features (3.9–4.1%) than in Late Woodland features (12.7%). Given the small number of Mississippian contexts and the likelihood that artifact samples from these contexts also contain "contaminants" from the preceding and pervasive Late Woodland occupation, no further discussion of this potential difference is warranted. Flakes of all raw material types were recovered from unit excavations and, with the exception of greenstone, from Late Woodland features as well, though in very low numbers.

Overall, the flake assemblage illustrates that stone-tool manufacture was an important activity at the site and that this activity involved core reduction to produce flake blanks that were then crafted into unifacial and bifacial tools. While the size distribution of flakes, with relatively few flakes exceeding 6 cm in maximum dimension, does not argue for a lithic source in close proximity to the site, almost one-third (32.1%) of all flakes greater than 4 cm in size were decortication flakes. The proportion drops to 23.5% for flakes between 2 cm and 4 cm, and only 7.6% of flakes less than 2 cm in size exhibited cortex on the exterior surface.

Orthoquartzite flakes are the only exception to the patterns just described (Figure 6.2). Unlike metavolcanics, vein quartz, quartzite, quartz crystal, ridge and valley chert, and Allendale chert which all exhibit a similar size distribution peaking at 1–2 cm, orthoquartzite flakes have a much less constrained size distribution, and half of those flakes exceed 4 cm in size. As noted earlier, it is believed that orthoquartzite was used primarily for making large tools such as chipped hoes. The production of such tools would have resulted in debitage comprised mostly of larger flakes.

Chipped-Stone Projectile Points

Four hundred and fifty-seven chipped stone artifacts were classified as projectile points. A majority of these are small triangular arrow points, small pentagonal points, or probable fragments of small arrow points that are attributable to the Late Woodland and Mississippian cultural components at the site; the remaining specimens are attributable to earlier Woodland and Archaic site occupations. While some projectile points were recovered from dated Late Woodland and Mississippian feature contexts, most came from general test unit and trench excavations and thus are not directly assignable to a particular cultural component. However, the high proportion of Late Woodland pottery at the site to Mississippian and earlier Woodland pottery suggests that most of the triangular projectile points likely are attributable to the Late Woodland Ashe Ferry phase.

Table 6.2. Distribution of chipped-stone flakes by excavation context, raw material, and size class.

Context / Raw Material	<1 cm	1–2 cm	2–4 cm	4–6 cm	6–8 cm	8–10 cm	>10 cm	Total	%
Unit Excavations									
Metavolcanic	730	6,391	944	28	-	-	-	8,093	84.4
Vein Quartz	68	997	210	11	1	-	2	1,289	13.4
Quartzite	4	76	22	5	1	-	-	108	1.1
Orthoquartzite	2	8	10	18	4	-	-	42	0.4
Quartz Crystal	2	22	1	-	-	-	-	25	0.3
Ridge & Valley Chert	5	17	-	-	-	-	-	22	0.2
Allendale Chert	1	5	3	-	-	-	-	9	0.1
Greenstone	-	-	1	-	-	-	-	1	0.0
Sub-total	812	7,516	1,191	62	6	0	2	9,589	100.0
Trench Excavations									
Metavolcanic	-	261	376	49	5	-	1	692	89.8
Vein Quartz	-	21	32	3	2	-	-	58	7.5
Orthoquartzite	-	1	4	2	4	2	-	13	1.7
Quartzite	-	-	3	-	-	-	-	3	0.4
Ridge & Valley Chert	-	3	-	-	-	-	-	3	0.4
Allendale Chert	-	2	-	-	-	-	-	2	0.3
Sub-total	0	288	415	54	11	2	1	771	100.0
Late Woodland Features									
Metavolcanic	463	1,658	202	12	2	1	-	2,338	86.6
Vein Quartz	35	262	46	1	-	-	-	344	12.7
Quartzite	-	9	2	-	-	-	-	11	0.4
Orthoquartzite	-	2	2	4	-	-	-	8	0.3
Ridge & Valley Chert	-	3	-	-	-	-	-	3	0.1
Quartz Crystal	-	1	1	-	-	-	-	2	0.1
Allendale Chert	-	1	-	-	-	-	-	1	0.0
Sub-total	498	1,936	253	17	2	1	0	2,707	100.3
Mississippian Features									
Metavolcanic	45	163	35	-	-	-	-	243	93.8
Vein Quartz	-	7	3	-	-	-	-	10	3.9
Orthoquartzite	-	2	1	-	-	-	-	3	1.2
Quartzite	-	2	-	-	-	-	-	2	0.8
Ridge & Valley Chert	-	1	-	-	-	-	-	1	0.4
Sub-total	45	175	39	0	0	0	0	259	100.0
Other Features									
Metavolcanic	61	137	28	2	-	-	-	228	93.4
Vein Quartz	-	7	1	2	-	-	-	10	4.1
Ridge & Valley Chert	-	3	-	-	-	-	-	3	1.2
Allendale Chert	-	1	-	-	-	-	-	1	0.4
Quartzite	-	-	1	-	-	-	-	1	0.4
Orthoquartzite	-	-	1	-	-	-	-	1	0.4
Sub-total	61	148	31	4	0	0	0	244	100.0
Total	1,416	10,063	1,929	137	19	3	3	13,570	
%	10.4	74.2	14.2	1.0	0.1	0.0	0.0	100.0	

Table 6.3. Distribution of chipped-stone flakes by excavation context, raw material, size, and presence/absence of cortex.

	<2 cm		2–4 cm		>4 cm		
Context / Raw Material	no cortex	cortex	no cortex	cortex	no cortex	cortex	Total
Unit Excavations							
Metavolcanic	6,599	522	725	219	17	11	8,093
Vein Quartz	970	95	155	55	6	8	1,289
Quartzite	67	13	8	14	1	5	108
Orthoquartzite	10	-	10	-	21	1	42
Quartz Crystal	24	-	1	-	-	-	25
Ridge & Valley Chert	21	1	-	-	-	-	22
Allendale Chert	6	-	3	-	-	-	9
Greenstone	-	-	1	-	-	-	1
Sub-total	7,697	631	903	288	45	25	9,589
Trench Excavations							
Metavolcanic	245	16	295	81	39	16	692
Vein Quartz	18	3	25	7	4	1	58
Orthoquartzite	1	-	4	-	8	-	13
Quartzite	-	-	1	2	-	-	3
Ridge & Valley Chert	3	-	-	-	-	-	3
Allendale Chert	2	-	-	-	-	-	2
Sub-total	269	19	325	90	51	17	771
Late Woodland Features							
Metavolcanic	1,987	134	157	45	8	7	2,338
Vein Quartz	243	54	34	12	1	-	344
Quartzite	3	6	1	1	-	-	11
Orthoquartzite	2	-	2	-	2	2	8
Ridge & Valley Chert	3	-	-	-	-	-	3
Quartz Crystal	1	-	1	-	-	-	2
Allendale Chert	1	-	-	-	-	-	1
Sub-total	2,240	194	195	58	11	9	2,707
Mississippian Features							
Metavolcanic	199	9	26	9	-	-	243
Vein Quartz	6	1	2	1	-	-	10
Orthoquartzite	2	-	1	-	-	-	3
Quartzite	1	1	-	-	-	-	2
Ridge & Valley Chert	1	-	-	-	-	-	1
Sub-total	209	11	29	10	0	0	259
Other Features							
Metavolcanic	181	17	22	6	2	-	228
Vein Quartz	6	1	1	-	1	1	10
Ridge & Valley Chert	3	-	-	-	-	-	3
Allendale Chert	-	1	-	-	-	-	1
Quartzite	-	-	-	1	-	-	1
Orthoquartzite	-	-	1	-	-	-	1
Sub-total	190	19	24	7	3	1	244
Total	10,605	874	1,476	453	110	52	13,570
%	92.4	7.6	76.5	23.5	67.9	32.1	

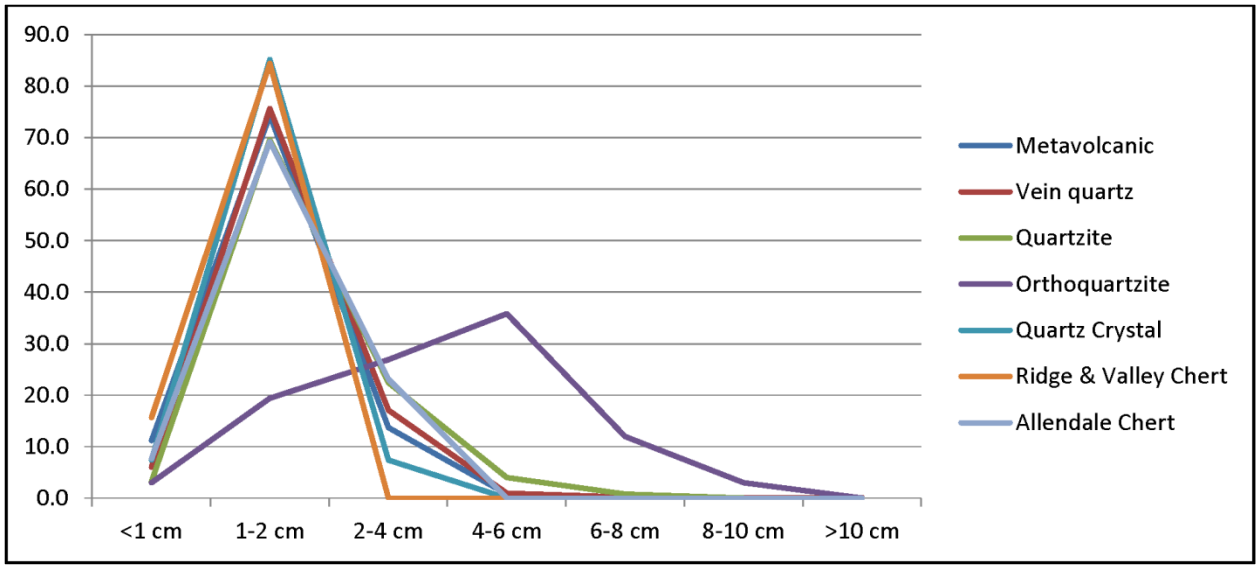

Figure 6.2. Percent distribution of flakes by raw material and flake size.

Kirk Serrated Projectile Point

The oldest projectile point recovered from Ashe Ferry was an unbroken, heavily resharpened Kirk Serrated point found in the upper fill of Feature 65, a Late Woodland Ashe Ferry phase pit (Figure 6.3). This type was first recognized at the Hardaway site in piedmont North Carolina, where Kirk Serrated points were positioned stratigraphically between earlier Kirk Corner-Notched points and later Kirk Stemmed and Stanly Stemmed points. Coe (1964:70) described this type as having "a long narrow blade with deep serrations and a broad square stem," and viewed it as an intermediate form within a long stylistic continuum between the Early Archaic Palmer Corner-Notched type and the Late Archaic Savannah River Stemmed type (Coe 1964:70). The Ashe Ferry specimen is made of patinated rhyolite and has a narrow, beveled, slightly incurvate body resulting from resharpening. It is 53 mm long, 23 mm wide at the shoulder, and 8 mm thick. Its occurrence within an Ashe Ferry phase pit suggests that it perhaps was collected by one of the site's Late Woodland occupants and may not be indicative of an Early Archaic occupation at the site.

Morrow Mountain II Stemmed Projectile Points

Six projectile points from Ashe Ferry were classified as Morrow Mountain II Stemmed (Figure 6.3). Three of these are made of rhyolite, and the rest are made of vein quartz. They range from 39–41 mm in length, 19–26 mm in width, and 5–16 mm in thickness. According to Coe (1964:37), this projectile point type is defined by a long, narrow blade and a tapered stem (Coe 1964:37). The Morrow Mountain II type is associated with the Middle Archaic period (ca. 5,500–5,000 BC), and specimens of this type were recovered in stratified context at the Doerschuk site in piedmont North Carolina (Coe 1964), and at the Icehouse Bottom and Howard sites in southeast Tennessee (Chapman 1977, 1979). All of the specimens from Ashe Ferry were recovered from old plow-disturbed soils within test units or during trench stripping, and they likely indicate a site occupation during the Morrow Mountain phase of the Middle Archaic period. A significant Morrow Mountain component was documented at the nearby Ayers Town site.

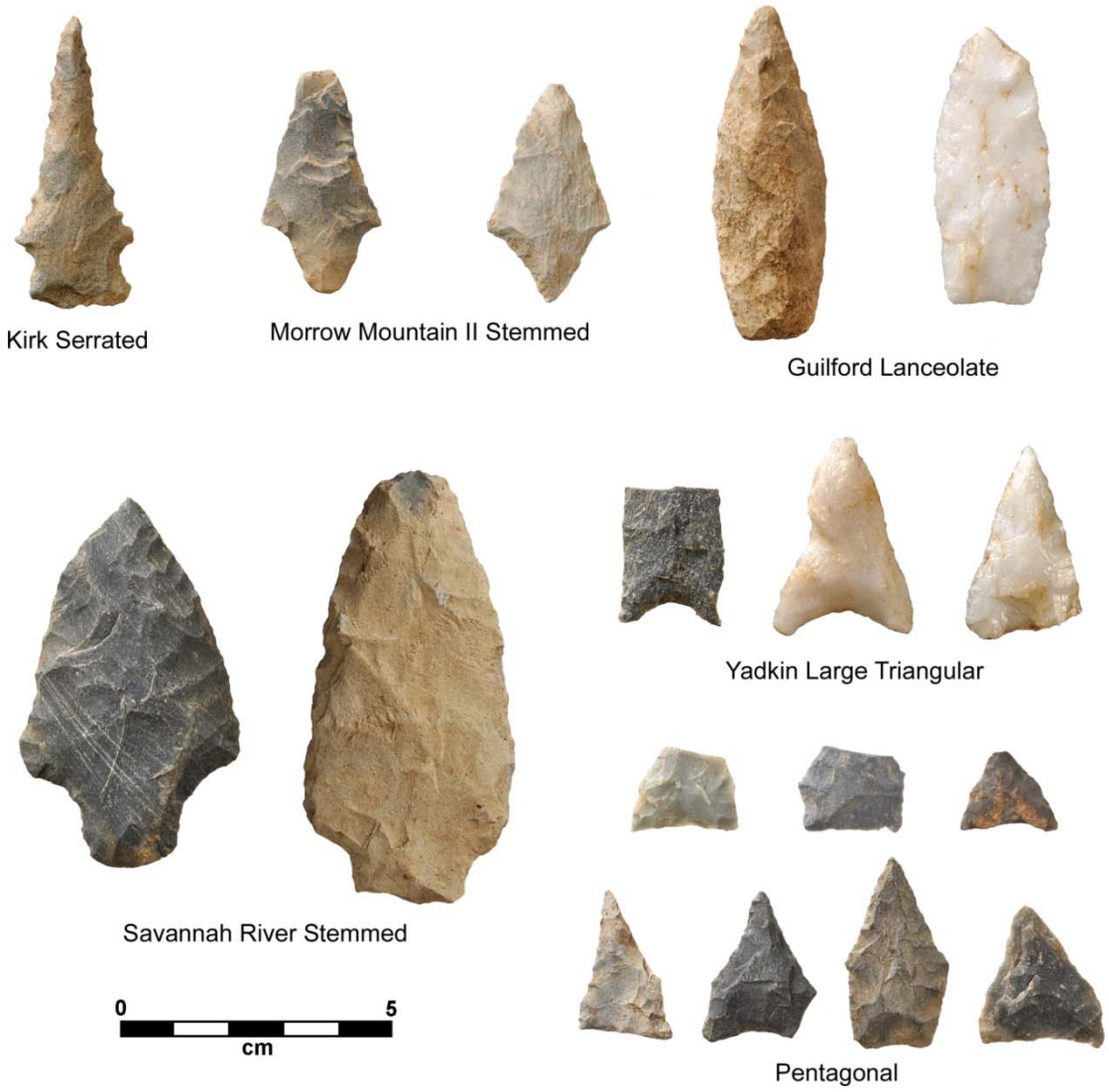

Figure 6.3. Miscellaneous Archaic, Woodland, and Mississippian projectile points recovered from Ashe Ferry.

Guilford Lanceolate Projectile Points

Two projectile points classified as Guilford Lanceolate were recovered from old plow-disturbed soil during unit excavation and while stripping trenches (Figure 6.3). These are made of rhyolite and vein quartz, and are very similar in size (width = 21 mm; thickness = 9–11 mm). The unbroken rhyolite point is 61 mm long. This type is defined by Coe (1964:43) as having "a long, slender, but thick blade with straight, rounded, or concave base," and he suggested, based on stratigraphic positioning at the Doerschuk and Gaston sites (Coe 1964:44, 118), that this projectile point type was in use during the Middle Archaic period between about 5,000 BC and 4,000 BC. Several Guilford Lanceolate points also were recovered from Ayers Town.

Savannah River Stemmed Projectile Points

The Savannah River Stemmed projectile point type was first documented by Coe (1964) at the Doerschuk, Lowder's Ferry, and Gaston sites, where points of this type were found in strata above those containing Middle Archaic Guilford Lanceolate and (at the Gaston site) Halifax Side-Notched points. This type is defined by "a large, heavy, triangular blade with a broad stem" Coe (1964:44) and is ubiquitous on archaeological sites dating to the Late Archaic period in the Carolinas. Savannah River Stemmed projectile points have been radiocarbon dated to ca. 3,000–1,800 BC at the Bacon Bend site in southeast Tennessee (Chapman 1981). Four projectile points from Ashe Ferry conform to this type (Figure 6.3). One specimen made of vein quartz was recovered during plowzone stripping in Trench 8; the other three specimens are made of rhyolite and were recovered from sand below the base of Feature 43, from the plow-disturbed top of Feature 46, and from Feature 80, a small cache of chipped-stone bifaces, cores, and flakes at the top of subsoil near the northwest edge of the site. Three of the four specimens are unbroken and range in size from 49–80 mm long, 32–41 mm wide, and 10–13 mm thick. The fourth specimen, a broken basal fragment, represents a much larger projectile point or knife, and measures 63 mm in width and 18 mm in thickness.

Legacy Research archaeologists reported a fragment of a probable Savannah River Stemmed point along with a concentration of orthoquartzite flakes at a depth of 2.1–2.3 m in their backhoe trench 2. This discovery, along with the occurrence of a Savannah River point below the base of Feature 43, indicate the presence of a buried Late Archaic cultural component along the front edge of the T-1 alluvial terrace at this location. Savannah River Stemmed points, as well as two soapstone bowl fragments of presumed Late Archaic age, also were recovered during investigations at Ayers Town.

Archaic Projectile Points (Indeterminate)

In addition to the projectile points described above, 14 other fragments of projectile point tips, mid-sections, and bases were recovered that also likely date to the Archaic period but cannot be assigned to a specific type. Nine of these are made of rhyolite or some other metavolcanic stone, four are vein quartz, and one is quartzite.

Yadkin Large Triangular Projectile Points

Only three projectile points were found that can be attributed to the Early or Middle Woodland periods (Figure 6.3). All are classified as Yadkin Large Triangular, a type defined by Coe based on his investigations at the Doerschuk site and associated with Yadkin series pottery. This type is described as "a large, symmetrical, and well-made triangular point," and it usually has a concave base (Coe 1964:45). Two of the specimens are made of vein quartz and are 36 mm long, 22–26 mm wide, and 7–9 mm thick. The third specimen, made of rhyolite, resembles a Yadkin variant described by Coe (1964:47) as "A-typical eared variety", and it is narrower with slight side notches. This broken specimen is 19 mm wide and 7 mm thick. All three Yadkin points came from Feature 67, a shallow basin that also contained Late Woodland Ashe Ferry series pottery and is assigned to the Ashe Ferry phase. This feature lies just three meters southwest of Feature 58, which contained Yadkin Check-Stamped pottery and is the only Middle Woodland feature identified at the site.

Pentagonal Projectile Points

Eight small, chipped-stone arrow points were recovered that have a pentagonal form (Figure 6.3). Except for edge configuration, all resemble the numerous triangular points from the site in

terms of size, thickness, material, and workmanship. All are made of rhyolite, and some may have originated as triangular points that were resharpened into a pentagonal form. The pentagonal projectile points from Ashe Ferry are similar to the Pee Dee Pentagonal type, which Coe (1964:49) describes as "a small asymmetrical and carelessly made point.... Pentagonal in form, usually asymmetrical. Some specimens, however, were very carefully and symetrically made." This type is associated largely with the South Appalachian Mississippian Pee Dee phase in the southern North Carolina Piedmont and South Carolina Coastal Plain (see Coe 1995:201); however, Pee Dee Pentagonal points also occur infrequently on late prehistoric and historic sites elsewhere in the Piedmont. Their cultural association at Ashe Ferry is ambiguous, though three specimens came from Late Woodland contexts in Features 44, 76, and 77. The remainder were recovered during the excavation or stripping of plow zone. Pentagonal arrow points from Ashe Ferry range from 15–35 mm in length (all but two are 22–28 mm long), 18–23 mm in width, and 3–5 mm in thickness.

Small Triangular Projectile Points

Four hundred and nineteen small triangular projectile points were recovered during archaeological investigations at Ashe Ferry. Seventy-eight of these chipped-stone arrow points came from archaeological features attributed to the Late Woodland Ashe Ferry phase, eight came from features attributed to the Mississippian Early Brown phase, and the remaining 333 points came from other contexts, such as unit excavations and plow zone stripping, that cannot be associated with a cultural component (Figures 6.4–6.6). While it often has been common practice to typologically separate small triangular projectile points based on overall size (see for example Joffre Coe's [1995:193–194, 202–206] differentiation of triangular points into Pee Dee, Caraway, and Hillsboro types), there appears to be no valid basis for taking this approach with the projectile point sample from Ashe Ferry. There also appears to be no basis for separating these points into meaningful categories based raw material, workmanship, or edge configuration.

Four hundred small triangular projectile points, comprising over 95% of the sample, are made of metavolcanic stone, principally fine-grained aphyric rhyolite. The remaining specimens are made of vein quartz (n=11), quartzite (n=7), and ridge-and-valley chert (n=1). They were produced by bifacially retouching a small flake blank, primarily by pressure flaking, and most exhibit flake scars across both faces. Seventeen specimens were created by simply chipping the flake margins to produce a triangular form; two of these came from Late Woodland features and one came from a Mississippian feature. Five triangular points from general excavations have serrated edges.

About 30% of the specimens are unbroken; the remainder are tips and broken basal fragments. Length, width, and thickness were measured to the nearest millimeter for all unbroken points; and one or more of these dimensions were measured on other specimens when appropriate. Summary statistics for these measurements are provided in Table 6.4. While the overall size range varies from 13–45 mm in length, 9–34 mm in width, and 2–10 mm in thickness, the mean measurements and associated standard deviations indicate remarkable uniformity of triangular projectile point size both within the overall sample and between feature samples attributed to Late Woodland and Mississippian occupations. Length-to-width ratios likewise indicate little overall variability between these samples.

Basal and lateral edge shape also was examined in order to characterize projectile point edge configuration and symmetry (Table 6.5). Most have either concave or straight bases; only a few have convex bases. Lateral edge shape was more varied, perhaps due to resharpening. While a majority of the points have straight edges, several exhibited an asymmetry created by a straight

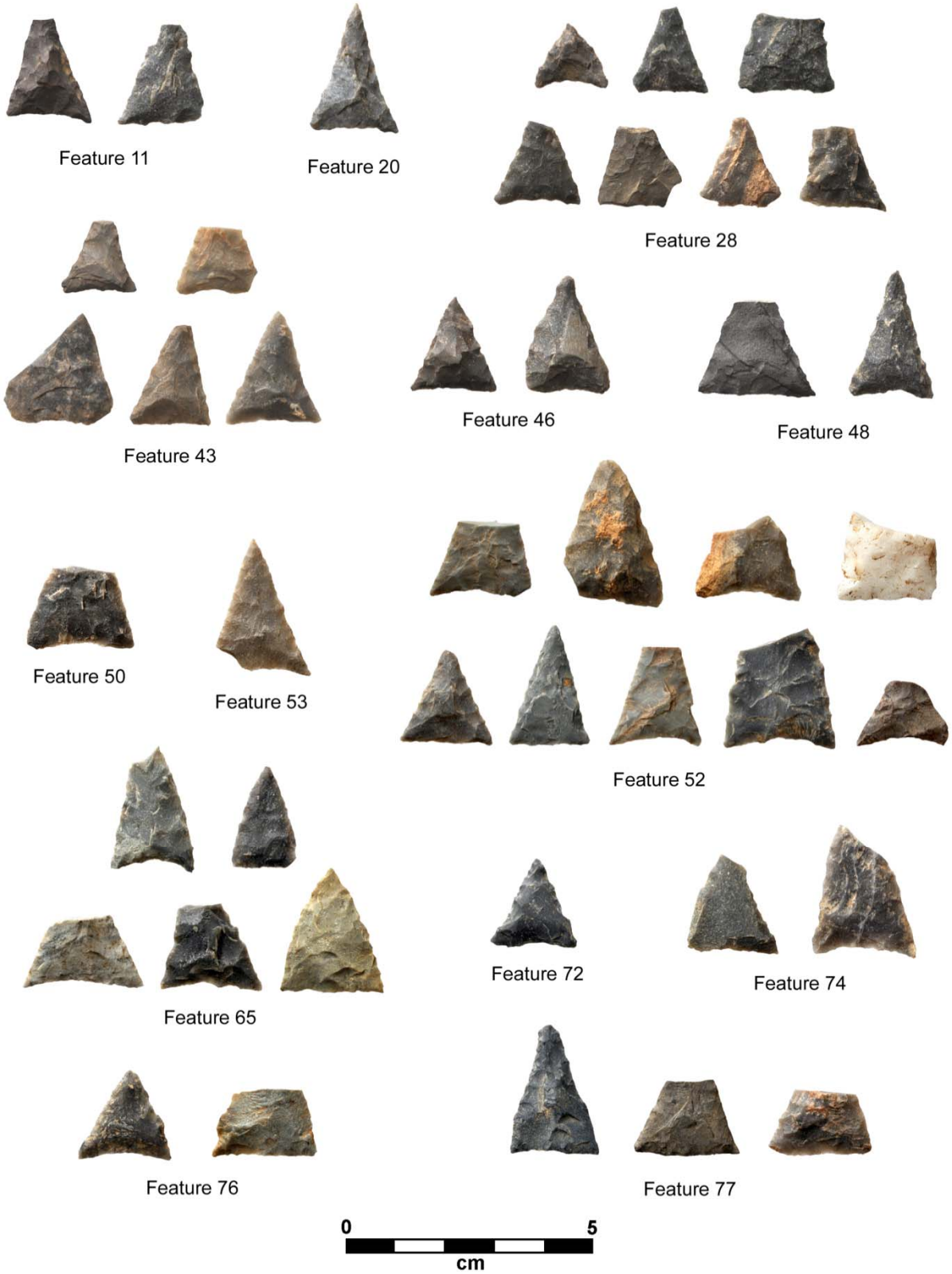

Figure 6.4. Small triangular projectile points from features attributed to the Late Woodland Ashe Ferry phase

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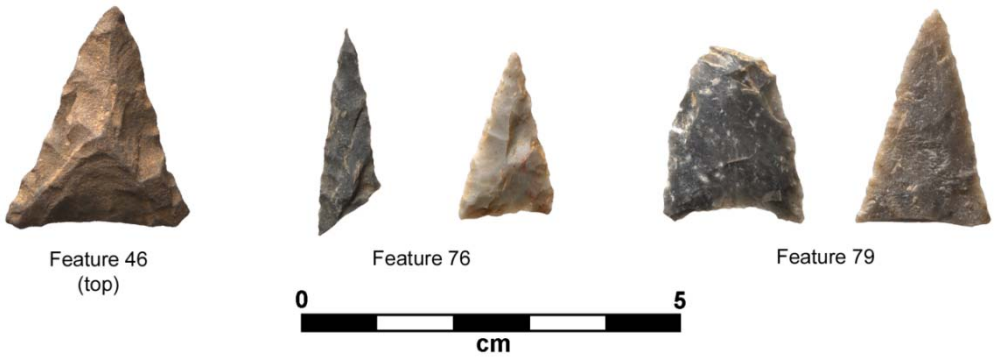

Figure 6.5. Small triangular projectile points from features attributed to the Mississippian period.

edge and an opposing concave or convex edge. Points with only concave or convex lateral edges account for only 30% of the sample.

Because only a small number of projectile points were recovered from Mississippian features, and some if not most of these could date to the preceding Late Woodland occupation, it is not possible to draw any conclusions about possible point assemblage differences; however, given the large proportion of Late Woodland pottery to Mississippian pottery found at the site, the overwhelming majority of the triangular points likely are attributable to the Late Woodland Ashe Ferry phase. Typologically, these points as a group conform best to Coe's (1964:49) Caraway Triangular type, which he characterized as "a straight-sided isosceles triangle that measured about 20 mm wide and 30 mm long. The bases were either straight or slightly concave, but the extreme concavity and deep serrations that were characteristic of the Pee Dee Triangular form did not occur on these points." While Coe (1964:49) originally attributed this type to the Keyauwee and Saponi Indians of the early eighteenth century, it is now clear that it is associated with various Late Woodland groups who occupied the Carolina and Virginia Piedmont after about AD 1000 (Davis et al. 1997c; Eastman 1993; McManus 1985).

Other Chipped Stone Tools

Preform

One artifact recovered while stripping plowed soil from Trench #2 was classified as a broken triangular preform, representing the final stage of bifacial projectile point manufacture (Figure 6.7). It is made of rhyolite and is heavily patinated except along one edge where it exhibits more recent flaking. The specimen is 38 mm wide and before being broken probably exceeded 80 mm in length. Given its large size, this preform likely predates the Woodland period.

Bifaces

A biface is defined as a chipped-stone blank that exhibits flake-removal scars on both surfaces. Fifty chipped-stone artifacts were classified as bifaces or biface fragments (Figure 6.7). All but three are made of rhyolite or other metavolcanic stone; the remainder are of vein quartz (n=2) or quartzite (n=1). Five appear to represent early stages in the production of Archaic notched or stemmed projectile points, and another likely represents an unfinished Yadkin Large

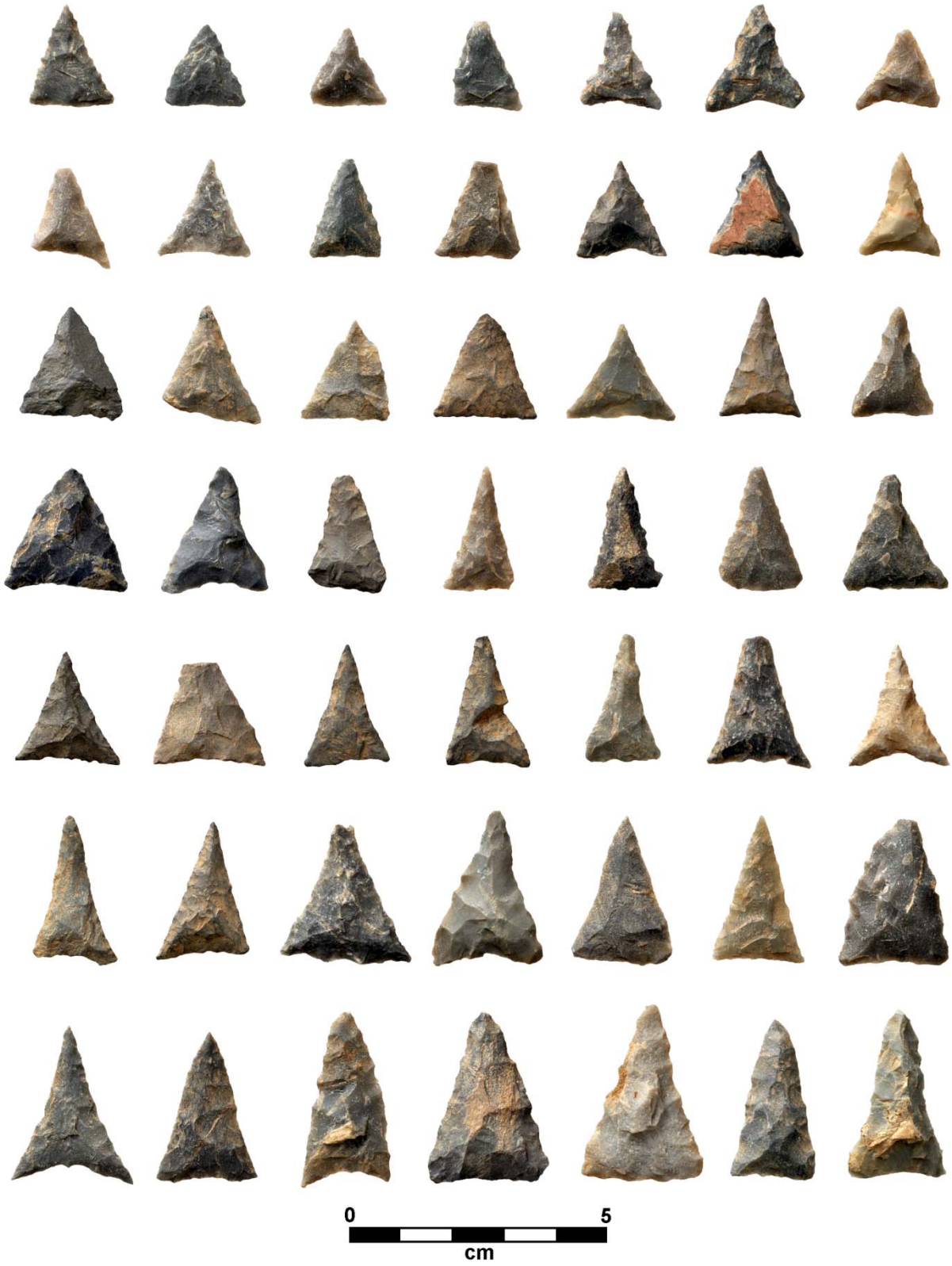

Figure 6.6. Small triangular projectile points from general excavation contexts at the Ashe Ferry site.

Table 6.4. Measurement Statistics for Small Triangular Projectile Points from the Ashe Ferry Site.

Context and Statistic	Length (mm)	Width (mm)	Thickness (mm)	Length-to-Width Ratio
Late Woodland Features				
mean	25.1	19.4	4.2	1.32
standard deviation	5.4	3.2	1.2	0.27
minimum	13	13	2	0.87
maximum	38	30	9	2.38
sample size	39	44	78	38
Mississippian Features				
mean	24.8	19.6	4.5	1.35
standard deviation	3.1	3.7	1.1	0.25
minimum	22	13	3	1.05
maximum	29	24	6	1.69
sample size	5	5	8	4
Other Contexts				
mean	24.5	19.2	4.3	1.29
standard deviation	5.6	3.4	1.2	0.24
minimum	13	9	2	0.76
maximum	45	34	10	2.17
sample size	209	232	333	198
Total Sample				
mean	24.6	19.2	4.3	1.29
standard deviation	5.5	3.4	1.2	0.25
minimum	13	9	2	0.76
maximum	45	34	10	2.38
sample size	253	281	419	240

Table 6.5. Summary of Basal and Lateral Edge Shape for Small Triangular Projectile Points from Late Woodland, Mississippian, and Other Contexts at the Ashe Ferry Site.

Edge Shape	Late Woodland Contexts	Mississippian Contexts	Other Contexts	Total Sample
Basal Edge				
concave	25	3	141	169
convex	1	0	8	9
straight	19	1	90	110
Total	45	4	239	288
Lateral Edges				
concave	2	1	24	27
convex	3	2	17	22
straight	26	2	127	155
concave / convex	2		5	7
straight / concave	3		21	24
straight / convex	5	1	23	29
straight / indet.			2	2
Total	41	6	219	266

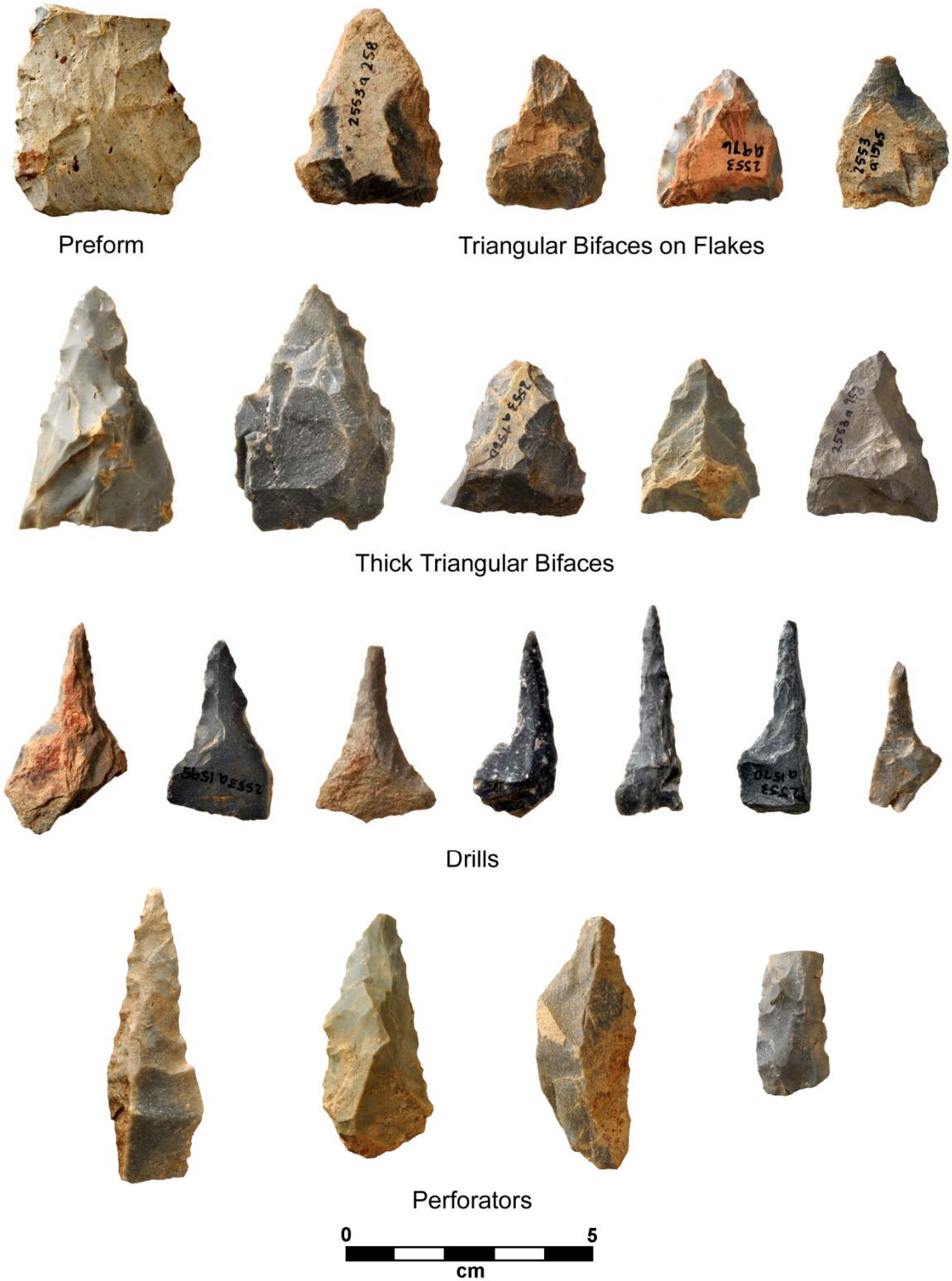

Figure 6.7. Chipped-stone preform, triangular bifaces, drills, and perforators from the Ashe Ferry site.

Triangular point. Seven specimens are thick, roughly chipped triangular bifaces representing unfinished or aborted attempts to produce small arrow points; another specimen exhibits similar workmanship but has a pentagonal form. Six other specimens likely representing unfinished arrow points are flakes, often patinated, that have been shaped by bifacial retouch to create a roughly triangular form. Four large triangular or oval bifaces also may represent unfinished projectile points. The remaining 26 specimens include bifacially worked blanks with an amorphous shape, flakes (both patinated and unpatinated) that have been bifacially chipped along one or more edges, and small edge fragments of bifaces. Only four specimens came from Late Woodland features, and two of these are interpreted as fragments of unfinished Archaic projectile points. The two specimens from Mississippian features likely represent unfinished arrow points.

Drills

Thirteen specimens are interpreted as chipped-stone drills (Figure 6.7). All were recovered from general excavations and represent bifacially worked tools with a triangular or oval base and an elongated, nearly parallel-sided projection. These are interpreted as hafted, perforating implements used on dense material such as wood, antler, or soft stone. Eight of the drills are complete or nearly complete. These range from 31–43 mm in basal width and have maximum lengths of 14–24 mm. Another specimen is a drill base with a broken bit, and the remainder are drill bit fragments. All are made of rhyolite or other metavolcanic stone.

Perforators

Four artifacts were classified as perforators (Figure 6.7). Perforators are interpreted as hand-held tools probably used to punch holes in soft materials. The specimens from Ashe Ferry are made on thick, elongate flakes that have been bifacially chipped to a tapered point at one end. One perforator is unbroken, and the other three have broken tips. All exhibit a curvature that would have made them unsuitable as hafted drills. These artifacts are made of rhyolite or other metavolcanic stone and were recovered from general excavation contexts.

Chipped Hoes

Chipped hoes are large, chipped-stone tools that are thought to have been hafted onto a long wood handle and used for digging as well as crop cultivation. Their exact use at Ashe Ferry is not known. Eight hoes representing two size classes were recovered (Figure 6.8). All are thick, triangular bifaces that have been roughly chipped and are plano-convex in cross section. Five of these, including two complete specimens from Feature 59 and unit excavations, represent large hoes up to 140 mm long and 60 mm wide at the bit edge. The other three specimens are proximal end fragments and were recovered from Feature 28 (n=2) and Trench 18. The complete hoe from Feature 59 exhibits haft polish along the proximal margins and soil polish along the distal edge, and both specimens from Feature 28 exhibit haft polish along the lateral margins at the proximal end. Three specimens from Trench 10, Feature 75, and Feature 78 are much smaller, with lengths of about 90 mm and widths of about 40 mm. One of these exhibits haft polish along almost the entire length of the lateral margins, suggesting that these smaller specimens may simply be exhausted hoes that have been heavily reduced by resharpening. The size range of the Ashe Ferry hoes is similar to that reported for hoes from the Town Creek site (Coe 1995:210–211). Unlike other chipped-stone tools, hoes were made of a variety of materials, including rhyolite (n=2), porphyritic rhyolite (n=2), orthoquartzite (n=3), and greenstone (n=1). Four hoes came from Late Woodland features (Features 28, 59, and 75) and one came from Feature 78, a Mississippian feature.

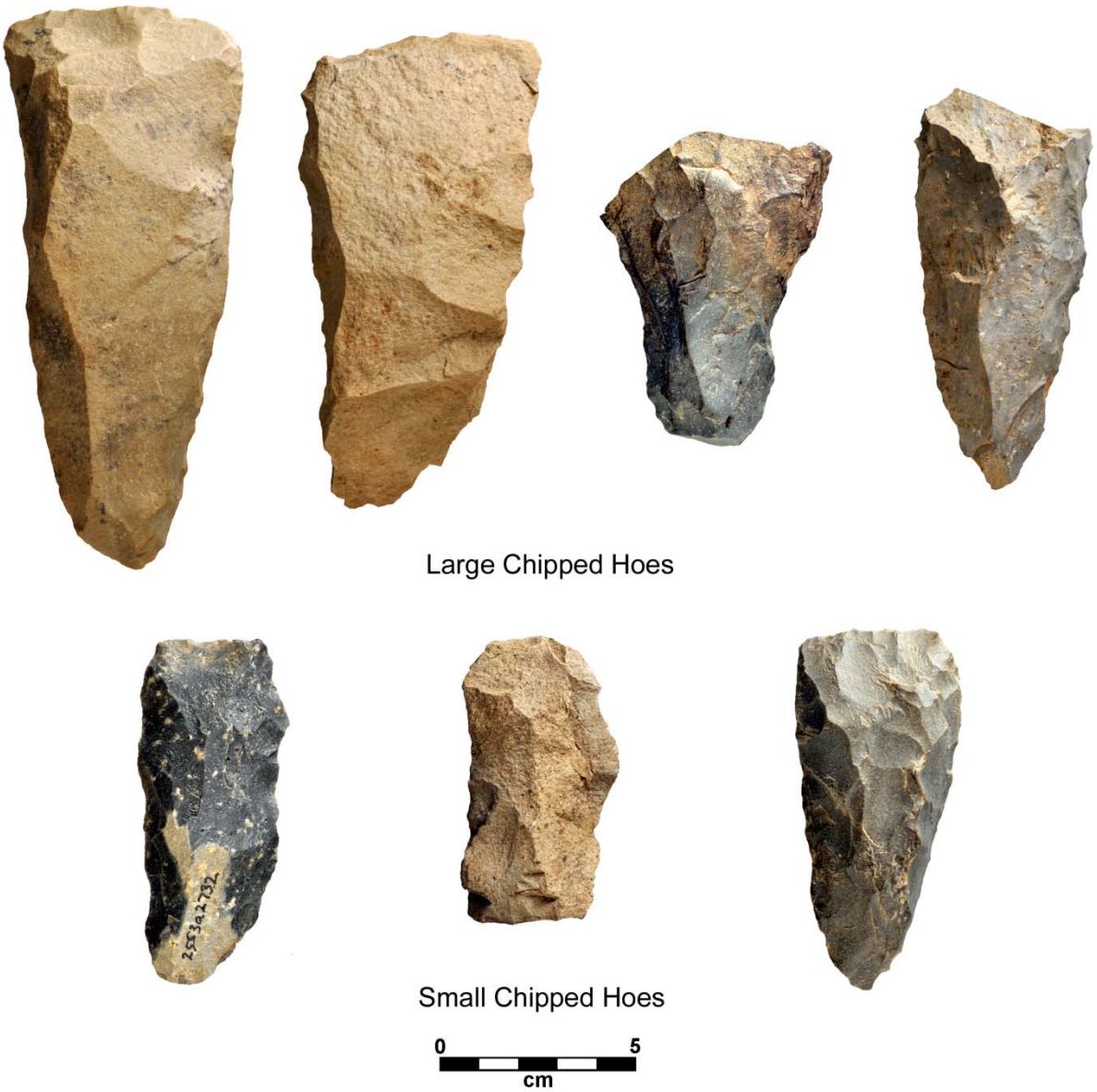

Figure 6.8. Chipped hoes from the Ashe Ferry site. They were recovered from the following contexts: top (l-r) – Feature 59, Square 873R856, Feature 28, and Feature 28; bottom (l-r) – Feature 75, Feature 78, and Trench 10.

End Scraper

One end scraper was recovered from old plow zone in Square 832R875. It is a thick, blade-like, vein-quartz flake that has been steeply retouched along the distal edge. It also has been steeply retouched along one lateral edge. Tools of this type are interpreted as hide-working implements and usually are attributed to the early end of the Archaic period. Several similar end scrapers were recovered at the nearby Ayers Town site, where they appear to be associated with occupations represented by Kirk Corner-Notched and Hardaway-Dalton projectile points.

Worked Flakes

Of the more than 13,500 fragments of lithic debitage recovered from Ashe Ferry, only 68 flakes showed evidence of edge retouching or use resulting in edge damage. These were classified as worked flakes. Sixty-two specimens were recovered from unit and trench excavations; the other six came equally from Late Woodland and Mississippian features. Several different types of activities, ranging from cutting and scraping to tool manufacture, are likely represented by these specimens, and six categories of worked flakes were identified, based upon the type and extent of edge modification.

The largest category contained 28 specimens that possessed only limited retouch or damage along the flake margins. Most were less than 4 cm in size and likely represent ad hoc, hand-held cutting tools. These were made of quartz, rhyolite, and other metavolcanic stone in nearly equal proportions. Seventeen flakes exhibited continuous, uniform retouch along one or more margins and may represent cutting or scraping tools. All but three were less than 4 cm in size and were made of vein quartz (n=7), rhyolite (n=6), other metavolcanic stone (n=2), and orthoquartzite (n=2). Six other flakes, made of metavolcanic stone or quartzite, were retouched along one or more margins to produce a denticulate, or serrated, edge. Three exceeded 4 cm in size. These almost certainly represent cutting tools. As with other retouched flakes, several of these presumed cutting or scraping tools were heavily patinated flakes of presumed Archaic age that exhibited more recent retouching.

Six flakes exhibited steep, continuous retouch along one or two margins. Four are made of vein quartz, and the other two are made of orthoquartzite and rhyolite. Three specimens with steeply retouched distal edges are interpreted as small end scrapers; two of them are made from split quartz pebbles. The other three specimens have steeply retouched lateral edges. All are interpreted as probable hide scrapers.

Three small (2–4 cm) metavolcanic stone flakes had been roughly fashioned into a triangle by retouching two edges. These are interpreted as aborted attempts to manufacture triangular arrow points. Finally, eight large, thick flakes ranging from 4-10 cm in size exhibited heavy retouch along the lateral edges. Seven of these were made of orthoquartzite and the other was made of metavolcanic stone. While these may represent heavy butchering or chopping implements, they also may be detritus from manufacturing chipped-stone hoes or unidentifiable hoe fragments.

Ground-Stone Tools

Celts

Celts are ground-stone axes that have a teardrop or roughly sub-rectangular shape and lack surface modification for hafting. Three unbroken celts, four celt fragments, and one large celt blank were recovered from the site area north of the highway (Figure 6.9). All are made of greenstone by a process of direct percussion, pecking, grinding, and polishing to produce a sharp, bi-convex working edge or bit (present on five of the eight specimens). Several exhibit water-worn surface irregularities that indicate they were incompletely fashioned from stream cobbles.

The complete specimens came from Features 59 and 75—both Late Woodland features—and old plowzone within Trench 10e. The Feature 59 celt has a long, slightly irregular shape due to its being manufactured by pecking and grinding from an elongate stream cobble. It measures 153 mm long x 39 mm wide x 34 mm thick, and has a rounded bit, a tapered poll, and a roughly

Figure 6.9. Celts, celt fragments, and celt blank from the Ashe Ferry site.

triangular cross section. The celt from Feature 75 is much smaller, measuring 104 mm long x 39 mm wide x 20 mm thick, and it has a teardrop shape with a rounded bit, tapered poll, and a bi-convex cross section. The specimen found while stripping Trench 10e is a large, tapered-poll celt that has been uniformly ground and polished. It has a slightly convex bit and measures 141 mm long x 60 mm wide x 37 mm thick.

Two of the four celt fragments are broken bits, one is a poll end, and the fourth is a small, polished fragment from the edge of a celt. One of the broken bits came from Feature 77, a Late Woodland feature. It has a rounded, irregular bit and flat faces with ground, faceted edges. The poll-end fragment, recovered from Trench 5, has a similar cross section. Another broken bit from Trench 10w appears to have a sub-rectangular configuration, though the poll end is

missing. Both this specimen and the one from Feature 77 were utilized, perhaps as wedges, after they broke, as they both have short step fractures extending from the mid-section break down the celt face. One also has a heavily battered bit. The small, celt-edge fragment came from a trench test unit adjacent to Feature 19, a Late Woodland feature.

Lastly, a large greenstone celt blank was recovered from Square 869R853 within the Trench 2 excavation block. This elongate, roughly teardrop-shaped river cobble measures 205 mm long x 71 mm wide x 60 mm thick, and it illustrates the process by which most celts at Ashe Ferry may have been manufactured. With a natural shape conforming to the shape of a finished celt, its edges were heavily pecked and ground to produce the proper size and approximate shape. This particular specimen apparently was discarded after about half of the original cobble cortex had been ground away, and substantially more pecking, grinding, and polishing would have been required to produce a finished, functional celt.

Hammerstones

Nine artifacts were classified as hammerstones (Figure 6.10). Seven of these are spherical or oval stream cobbles that have heavily battered and abraded surfaces resulting from use as hand-held hammers or grinding stones; the other two are elongate cobbles with battering confined to the end or edge. The spherical and oval hammerstones are made of quartzite (n=3), orthoquartzite (n=1), metasandstone (n=1), diabase (n=1), and granite (n=1). The spherical hammerstones measure 51–66 mm in diameter while the oval hammerstone is somewhat larger at 110 mm by 69 mm. The two elongate hammerstones are made of phyllite and measure 122–145 mm long by 43–46 mm wide. Hammerstones were recovered from Trenches 1, 9, 18, 24, and 26, Square 829R911, and Features 46, 48, and 65.

Large stone hammers, milling stones, nutting stones, and pitted stone anvils are regarded as site furniture (see Binford 1979:263–264) and, as such, likely were cached at the site during periods of abandonment. While these items may be attributable largely to the Late Woodland occupations, both earlier and later uses cannot be ruled out, particularly given the potential of prehistoric ground-disturbing activities to expose items left by preceding occupants.

Possible Milling Stones

Six possible milling stone fragments were recovered. Three of these came from unit excavations, and the others came from Features 11, 55, and 60. All are fragments of tabular stream cobbles or tabular stone that show abrasion or polish on one face. In most cases abrasion has resulted in a slight, shallow concavity; however, the specimen from Feature 55 is the only one that appears to be clearly the product of intentional and extensive grinding. These specimens represent a variety of igneous and metamorphic rock types, including: granite, andesite, diorite, metasandstone (n=2), and gneiss.

Pitted Stones

Three cobbles from trench and unit excavations have a shallow pit or hemispherical depression on one or both faces (Figure 6.10). They measure between 95 mm and 120 mm in diameter, and the depressions are 20–25 mm in diameter and less than 5 mm deep. They are made of a coarse-grained granite, diorite, and diabase. All three specimens are interpreted as anvils that probably were used in nut processing or perhaps in flintknapping for bipolar reduction of cores or to split alluvial cobbles.

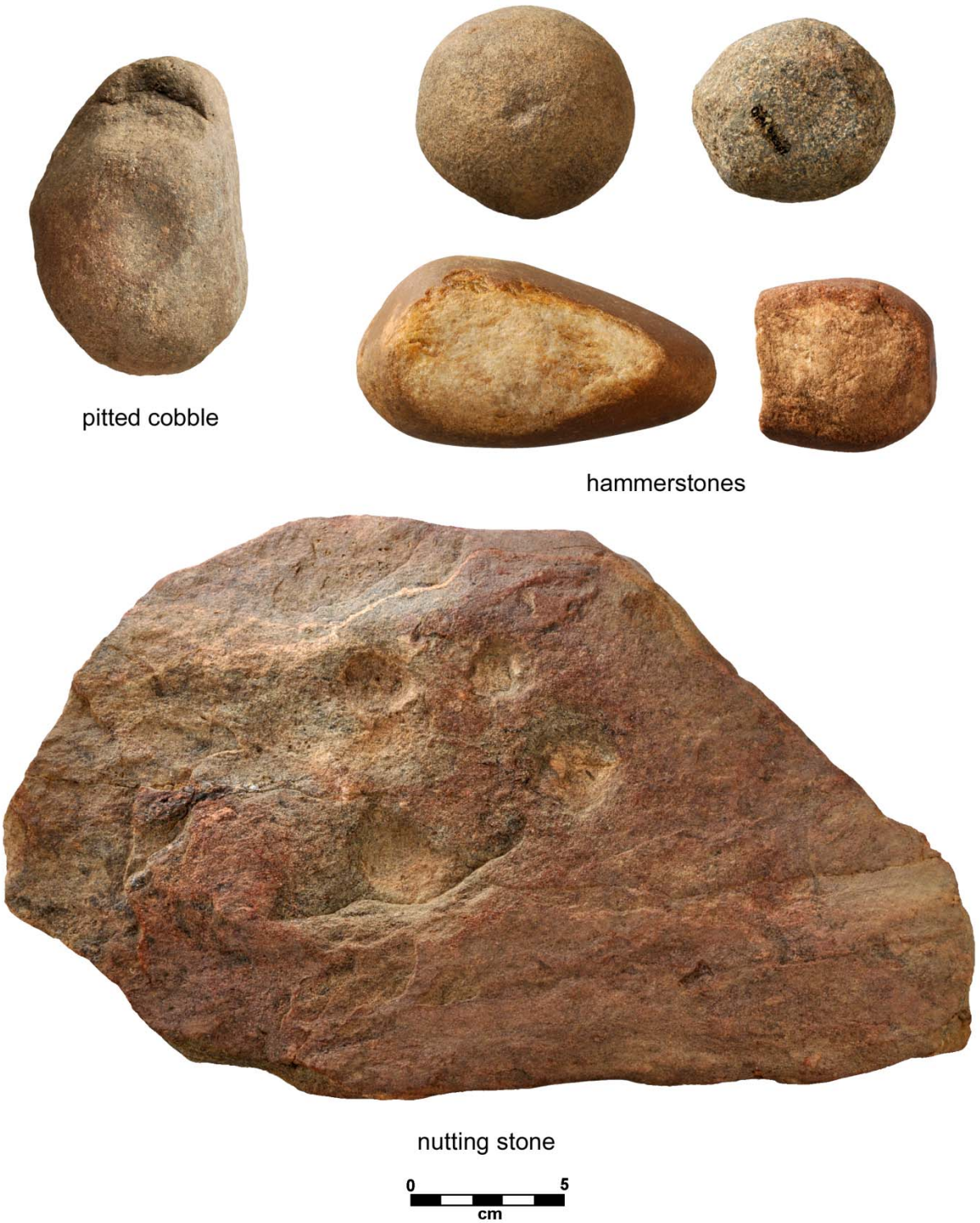

Figure 6.10. Hammerstones, pitted cobble, and nutting stone from the Ashe Ferry site.

Early English explorers in the Carolinas reported that the native inhabitants used stones to crack nuts. In writing about the availability of stone to the Indians who lived along the coast and sounds of North Carolina, Thomas Hariot observed:

> Upon inquirie wee heard that a little further up into the Countrey were of all sortes verie many, although of Quarries they are ignorant, neither have they use of any stone whereupon they should have occasion to seeke any. For if everie householde have one or two to cracke Nuttes, grinde shells, whet copper, and sometimes other stones for hatchets, they have enough…. [de Bry 1590:23]

Travelling through the Piedmont more than a century later, John Lawson noted that the region's inhabitants made great use of a variety of nuts, including acorns and hickory nuts, and that hickory nuts, because of their thick, dense shell, were cracked open with stones:

> Hiccory Nuts have very hard Shells, but excellent sweet Kernels, with which, in a plentiful Year, the old Hogs, that can crack them, fatten themselves, and make excellent Pork. These Nuts are gotten, in great Quantities, by the Savages, and laid up for Stores, of which they make several Dishes and Banquets. One of these I cannot forbear mentioning; it is this: They take these Nuts, and break them very small betwixt two Stones, till the Shells and Kernels are indifferent small; And this Powder you are presented withal in their Cabins, in little wooden Dishes; the Kernel dissolves in your Mouth, and the Shell is spit out. [Lawson 1709:98]

Nutting Stone

One large stone slab with multiple depressions or pits on both surfaces was classified as a nutting stone. It was recovered from the lower levels of Feature 28, a large Late Woodland storage facility located at the south edge of the site (Figure 6.11). This feature also contained substantial quantities of parched acorns. This tabular, metasandstone rock measures 325 mm long x 188 mm wide x 54 mm thick, and it has four shallow (<5 mm deep), cup-like depressions on one face that are 20–25 mm in diameter and a single, 25-mm diameter circular depression on the opposing face that is about 8 mm deep. The similarity in size, shape, and depth between the cup-shaped depressions on this specimen and those on the pitted stones just described argues for a similar function.

Other Modified Cobbles and Pebbles

Seventeen other cobbles, cobble fragments, and pebbles were recovered that show evidence of being modified through grinding (n=8), abrading (n=2), or polishing (n=7). None appears to represent a formal tool or an early stage in tool manufacture, and, with one exception, their specific function(s) is uncertain. This specimen is a tabular piece of sandstone from Feature 74 has been ground smooth on both faces and also has a groove along one edge. It likely represents an abrader. Many of the polished pebbles and cobbles may have been used as rubbing stones. As a class, these artifacts range from about 4 cm to 14 cm in diameter and are made of a variety of mostly igneous and metamorphic rock types, including diabase, quartzite, metasandstone, granite, and slate.

Stone Gorget

One ground-stone gorget fragment was recovered while stripping Trench 30 at the north edge of the site (Figure 6.11). It is made of gray slate and tapers to a flat, notched edge at one end. This notching extends down one of the lateral edges. It appears to be from either a sub-triangular pendant with a single drill hole at one end, or from a gorget with an expanded center and drill holes at each end. The fragment measures 39 mm from the notched end to the broken edge, 33 mm in maximum width (at the break), and 9 mm in thickness. The bi-conical drill hole is located 23 mm from the end and has a maximum diameter of 6 mm. Similar ground-stone artifacts identified as pendants or gorgets are widely distributed throughout the Eastern

Woodlands and usually are attributed to the Woodland period. Single-hole pendants have been reported from Late Woodland contexts within the upper Dan River drainage of southern Virginia (Davis et al. 1997a:70, 1997b:77)

Coe (1995:Figure 10.20a, b, c, g, and k) illustrates five similar specimens from Town Creek which he erroneously interprets as "Pee Dee celts with drilled and notched poll ends." Three of these are remarkably similar in dimensions, form, and workmanship to the Ashe Ferry fragment, and likely represent gorget or pendant fragments associated with the terminal Woodland period occupation at Town Creek. Boudreaux's analysis (2007:46–55) indicates Late Woodland and Mississippian period components at Town Creek contemporaneous with Ashe Ferry occupations.

Stone Pipes

One complete stone pipe and one re-worked stone pipe bowl were found (Figure 6:11). The complete pipe came from Feature 45, a Late Woodland grave, and was a funerary object associated with the burial in that pit. It is a small platform pipe made of soapstone that measures 66 mm long by 29 mm wide by 7–10 mm thick at the base. The straight bowl, roughly sub-rectangular in shape and placed near the center of the platform, is 22 mm tall and 26–28 mm in diameter. The stem end (shown at right in Figure 6.11) is damaged. Two similar small platform

Figure 6.11. Stone pipe bowl from Feature 20 (top row), stone platform pipe from Feature 45 (bottom left and center), and stone gorget fragment from Trench 30 (bottom right).

pipes were recovered from culturally indeterminate contexts at Town Creek (Coe 1995:Figure 11.1c and e). A third platform pipe closely resembling the one from Ashe Ferry is also illustrated by Coe (1995:Figure 11.1f) and identified as being from the surface at Town Creek; however, other records in the Research Laboratories of Archaeology indicate that it was surface collected at site St 6, located below Falls Dam near the Doerschuk site. Both platform pipes and alate-stemmed pipes were reported by MacCord (1966; also see Irwin et al. 1999) from the McLean Mound (31Cd7) near Fayetteville, North Carolina (Figure 6.12). MacCord (1966:44) obtained a single radiocarbon date of A.D. 1030 $\pm$ 130 for the mound but ascribed it to the Middle Woodland period. A pipe very similar in form to the Ashe Ferry specimen was recovered from the Late Woodland Gaston Site (31Hx7) on Roanoke River (South 2005:81–82). Unfortunately, it was recovered from an unknown context during mechanical stripping of the site.

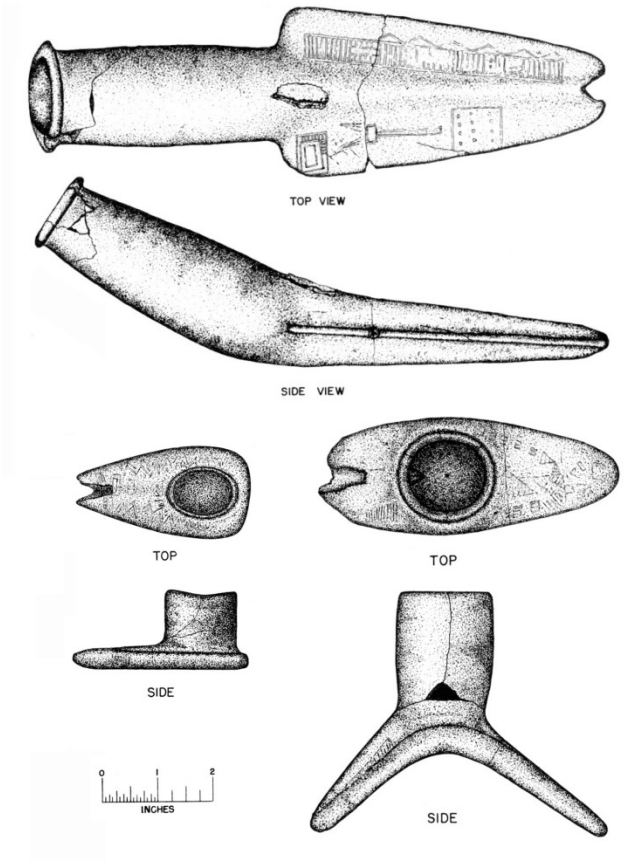

Figure 6.12. Examples of alate-stemmed (top) and monitor-style (bottom) platform pipes from the McLean Mound (from MacCord 1966:22-24).

The other specimen from Ashe Ferry came from Feature 20 and is a re-worked soapstone pipe bowl. The circular bowl has a heavy, rectangular flange around the lip, and it was cut from the rest of the pipe by scoring, snapping, and grinding about 10 mm below the base of the flange. The bowl exterior below the flange also has been extensively ground. The flange edge measures 52x38 mm and has rounded corners. The interior pipe bowl is 21.5 mm in diameter, and the remaining portion of the bowl exterior is nearly square (31x30 mm). As illustrated by West (1934), such rectangular flanged pipe bowls are typically found on alate-stemmed pipes, in which the winged stems form flattened lenticular or diamond shaped platforms. The purpose for which this pipe fragment was reworked is unclear. The presence of this pipebowl fragment in an Ashe Ferry phase pit is consistent with the documented occurrence of alate-stemmed pipes in Late Woodland period contexts at the McLean Mound and Gaston sites.

Utilized Minerals

Two examples of utilized minerals were recovered. The first is a fragment of worked talc that was found in the old plow zone of Square 874R849, located just east of Feature 22 within Trench 2. It is the mid-section of a ground and polished, tabular object with flat surfaces and squared edges. It measures 13 mm wide by 5 mm in thickness, and is 20 mm long between broken ends. Given its sharp edges and uniformly flat surfaces, this specimen appears to be

machine-manufactured and not crafted by hand. It is similar in both size and shape to engineers' or welders' pencils and thus is attributed to the period of original highway bridge construction in the late 1950s.

The other utilized mineral came from a cache of chipped-stone, ground-stone, and antler artifacts at the top of Feature 75. It is an irregular lump of a unidentified micaceous mineral that appears to been heavily burned. It measures about 20–25 mm in diameter and may have been used as a source of black paint pigment; however, this specimen does not have any ground or faceted edges.

Fire-Cracked Rocks

During the course of fieldwork, all fire-cracked rocks retrieved from dry-screening test unit and block excavation fill and from waterscreening feature fill was temporarily saved so it could be size-sorted, counted, and weighed. Size categories used to quantify fire-cracked rocks were as follows: 1/4 to 1/2 inches (6.35–12.7 mm), 1/2 to 1 inch (12.7–25.4 mm), 1 to 2 inches (25.4–50.8 mm), and >2 inches (>50.8 mm) in diameter. Specimens within the 1/4–1/2-inch category were counted and weighed from unit contexts and only weighed from feature contexts. Fire-cracked rocks observed during mechanized stripping of plowed soil were not collected. A total of 13,566 fire-cracked rocks and unbroken hearth stones weighing 243.643 kg were recovered from the site.

Fire-cracked rocks were ubiquitous at the Ashe Ferry site, but they were not uniformly distributed across the site (Tables 6.6 and 6.7). As indicated by their occurrence *in situ* within several archaeological features, they were used primarily to line the bottoms of large, shallow basins, interpreted as cooking/processing facilities, where they served as hearth stones to retain and radiate heat. Most of the fire-cracked rocks recovered from Ashe Ferry derive from these features, with the remainder representing scattered debris likely resulting from the aboriginal cleaning of those facilities and from their more recent disturbance by plowing.

Of the 51 archaeological features identified as being of cultural origin, all but two contained fire-cracked rock. The 16 features interpreted as cooking/processing facilities each contained 1.8–31.9 kg (mean = 11,986 g; s.d. = 10,584 g) of fire-cracked rock, while the remaining features contained significantly fewer specimens (8 g–9.4 kg; mean = 1,571 g; s.d. = 2,321 g). Half of the excavation units contained fewer than 270 g of fire-cracked rock, and more than 90% contained less than one kilogram of rock. Units containing the most fire-cracked rock were located either above or adjacent to rock-filled basins, concentrations of fire-cracked rock, or shallow basins interpreted as cooking/processing facilities (i.e., Features 15, 17, and 21). Substantial quantities of fire-broken rock also were recovered from the northern and eastern units in the Trench 2 Block, the western units within the Trench 10 Blocks, and from units overlying Features 76 and 81.

Most fire-cracked rocks represent water-worn, alluvial cobbles of quartzite and occasionally quartz, and the few unbroken specimens found range from about 50 mm to 75 mm in diameter (i.e., fist-sized) (Figure 6.13). Cobbles of similar size and composition were encountered in bedded deposits along the front edge of the pre-Holocene terrace where the Ayers Town site is situated, about 500–600 meters west of Ashe Ferry. These deposits represent a relict stream channel or gravel bar, and any soil erosion along the terrace edge would have exposed massive quantities of cobbles that could be readily collected.

Table 6.6. Distribution of Fire-Cracked Rock by Feature and Size Category.

Context	1/4–1/2"		1/2–1"		1–2"		>2"		Total	
	N	Wt (g)	N	Wt (g)	N	Wt (g)	N	Wt (g)	N	Wt (g)
Feature 1	-	-	1	4	2	55	1	165	4	224
Feature 11	-	47	21	145	24	1,379	10	2,628	55	4,199
Feature 12	-	17	20	117	26	1,811	22	5,473	68	7,418
Feature 13	-	1	1	5	7	476	17	5,118	25	5,600
Feature 15	-	37	17	111	30	1,933	32	5,659	79	7,740
Feature 16	-	88	66	374	28	1,398	5	751	99	2,611
Feature 17	-	118	58	297	44	1,910	11	1,487	113	3,812
Feature 19	-	5	7	45	5	219	-	-	12	269
Feature 20	-	23	15	88	9	476	1	173	25	760
Feature 21	-	258	104	555	146	8,742	101	22,059	351	31,614
Feature 22	-	9	24	112	23	1,024	3	611	50	1,756
Feature 25	-	206	126	724	107	6,127	39	10,661	272	17,718
Feature 28	-	101	30	170	17	506	6	654	53	1,431
Feature 32	-	6	2	5	2	117	-	-	4	128
Feature 35	-	20	4	16	-	-	-	-	4	36
Feature 40	-	56	-	-	-	-	-	-	-	56
Feature 41	-	-	-	-	1	75	-	-	1	75
Feature 42	-	6	-	-	1	23	-	-	1	29
Feature 43	-	20	7	38	2	38	-	-	9	96
Feature 44	-	23	4	15	2	45	3	1,025	9	1,108
Feature 45	-	35	14	59	6	237	1	493	21	824
Feature 46	-	241	124	694	40	2,338	20	3,100	184	6,373
Feature 47	-	54	33	161	68	5,022	30	5,718	131	10,955
Feature 48	-	51	12	53	7	478	4	551	23	1,133
Feature 49	-	-	3	26	-	-	-	-	3	26
Feature 50	-	127	10	53	2	89	7	3,766	19	4,035
Feature 51	-	9	3	37	11	716	11	2,723	25	3,485
Feature 52	-	122	25	121	10	520	7	2,429	42	3,192
Feature 53	-	72	34	221	67	4,965	25	4,256	126	9,514
Feature 55	-	2	-	-	-	-	7	2,013	7	2,015
Feature 56	-	12	-	-	1	23	14	9,342	15	9,377
Feature 57	-	5	1	18	4	335	12	4,949	17	5,307
Feature 58	-	9	2	5	-	-	-	-	2	14
Feature 59	-	2	-	-	1	28	10	6,260	11	6,290
Feature 60	-	8	2	8	-	-	-	-	2	16
Feature 61	-	41	7	35	11	273	8	1,546	26	1,895
Feature 63	-	12	1	8	-	-	-	-	1	20
Feature 65	-	38	15	215	10	266	1	337	26	856
Feature 66	-	8	4	21	3	61	-	-	7	90
Feature 67	-	15	1	6	2	56	8	3,287	11	3,364
Feature 69	-	16	-	-	2	153	1	867	3	1,036
Feature 72	-	5	-	-	1	31	-	-	1	36
Feature 73	-	9	-	-	-	-	-	-	-	9
Feature 74	-	132	96	583	367	26,808	20	4,344	483	31,867
Feature 75	-	8	-	-	1	55	-	-	1	63
Feature 76	-	89	22	122	14	497	9	2,815	45	3,523
Feature 77	-	354	226	1,486	263	17,426	44	9,307	533	28,573
Feature 78	-	128	56	272	152	9,854	49	12,813	257	23,067
Feature 79	-	8	-	-	-	-	-	-	-	8

Table 6.6 continued.

Context	1/4–1/2" N	1/4–1/2" Wt (g)	1/2–1" N	1/2–1" Wt (g)	1–2" N	1–2" Wt (g)	>2" N	>2" Wt (g)	Total N	Total Wt (g)
Units	5,958	5,188	2,868	15,225	1,326	52,908	276	48,793	10,428	122,114
Natural	-	44	6	29	20	1,009	4	1,804	30	2,886
Disturbances										
Total	5,958	7,885	4,072	22,279	2,865	150,502	819	187,977	13,714	368,643

Table 6.7. Fire-Cracked Rock Counts and Weights by Size Category for All Cultural Features.

Quantity	Size Category 1/4–1/2"	1/2–1"	1–2"	>2"	Total
Count					
Total	-	1,198	1,519	539	3,256
Percent	-	36.8	46.7	16.6	100.0
Weight (g)					
Total	2,653	7,025	96,585	137,380	243,643
Percent	1.1	2.9	39.6	56.4	100.0

Figure 6.13. Sample of fire-broken quartz and quartzite cobbles recovered from Feature 47, a Late Woodland cooking/processing facility.

Clay Artifacts

Thirteen clay pipe fragments, a pottery disk, and an unidentified fired-clay object were recovered during the 2010 investigations at 38YK533 (Figure 6.14). All but one of the clay pipe fragments and the fired-clay object are made of coarse potter's clay similar to that used to produce Late Woodland Ashe Ferry phase pottery. Three conjoining pipe rim fragments from stripping Trench 9 and rim fragments from Feature 19, Feature 43, and Square 830R911 represent crudely formed, thick, conical pipe bowls; another fragment from Square 770R932 may also be part of a conical pipe bowl. Unfortunately, none of these specimens is large enough to determine overall pipe form. One pipe stem fragment from Square 850R870, made with finer-grained clay and fired to reddish brown, has a squared cross-section reminiscent of mid-eighteenth-century Catawba-made pipes found at Nassaw-Weyapee (Fitts et al. 2007:22); however, it also is too small to ascertain overall pipe form. Five conjoining ceramic pipe fragments from Square 769R931 within the Trench 15 Block form a pipe bowl displaying the zoomorphic representation of an animal face, with eyes and mouth, on the distal edge of the bowl rim. The snout area is abraded and worn away. These fragments appears to derive from a thick-walled, conical or obtuse-angled elbow pipe.

An unidentified fired-clay object, recovered from Square 770R950, may also be an effigy fragment, but is too incomplete for positive identification. Square 752R956 yielded a roughly circular disk made from a burnished Mississippian potsherd with abraded edges. It measures 30 mm by 33 mm in diameter and is 9 mm thick. Pottery disks are common on Mississippian sites in the Carolina Piedmont, including Town Creek where more than 1,100, interpreted as gaming pieces, were recovered (Coe 1995:227).

Daub and Fired Clay

Eight hundred and eighty-two fragments of fired clay were recovered (Figure 6.15). Most of these exhibit stick or twig impressions and are interpreted as architectural daub; however, seven specimens lack these characteristics and may represent remnants of clay hearths or simply burned clay. A single fragment from a fired mud dauber's nest also was recovered.

Two hundred and sixty-seven specimens were recovered from 81 test excavation units. Because of the method of recovery (i.e., dry-screening through 1/4-inch mesh), specimens from units were larger, with an average weight of 0.7 g, than those recovered from 1/16-inch waterscreened feature fill. Slightly higher concentrations of daub were observed in several units within the Trench 2 Block and the Trench 10 Block; other units containing small quantities of daub were widely distributed across the remainder of the site.

A total of 610 pieces of daub, four fired clay fragments, and a mud dauber's nest were recovered from 33 features representing Middle Woodland (n=1), Late Woodland (n=25), Mississippian (n=3), and indeterminate occupations (n=4). These specimens, on average, were half the size of those from unit excavations; however, they were better preserved and provide the best evidence, in terms of clearly visible stick impressions, that they represent architectural remains. While daub was recovered from all classes of features, almost 80% (by count and weight) came from four Late Woodland pits (Features 20, 28, 52, and 76), a Late Woodland fire-cracked rock concentration (Feature 77), a Late Woodland basin (Feature 19), and a Mississippian basin (Feature 41). Feature 41 produced the most daub (n=244, 78.8 g) as well as the single preserved mud dauber's nest.

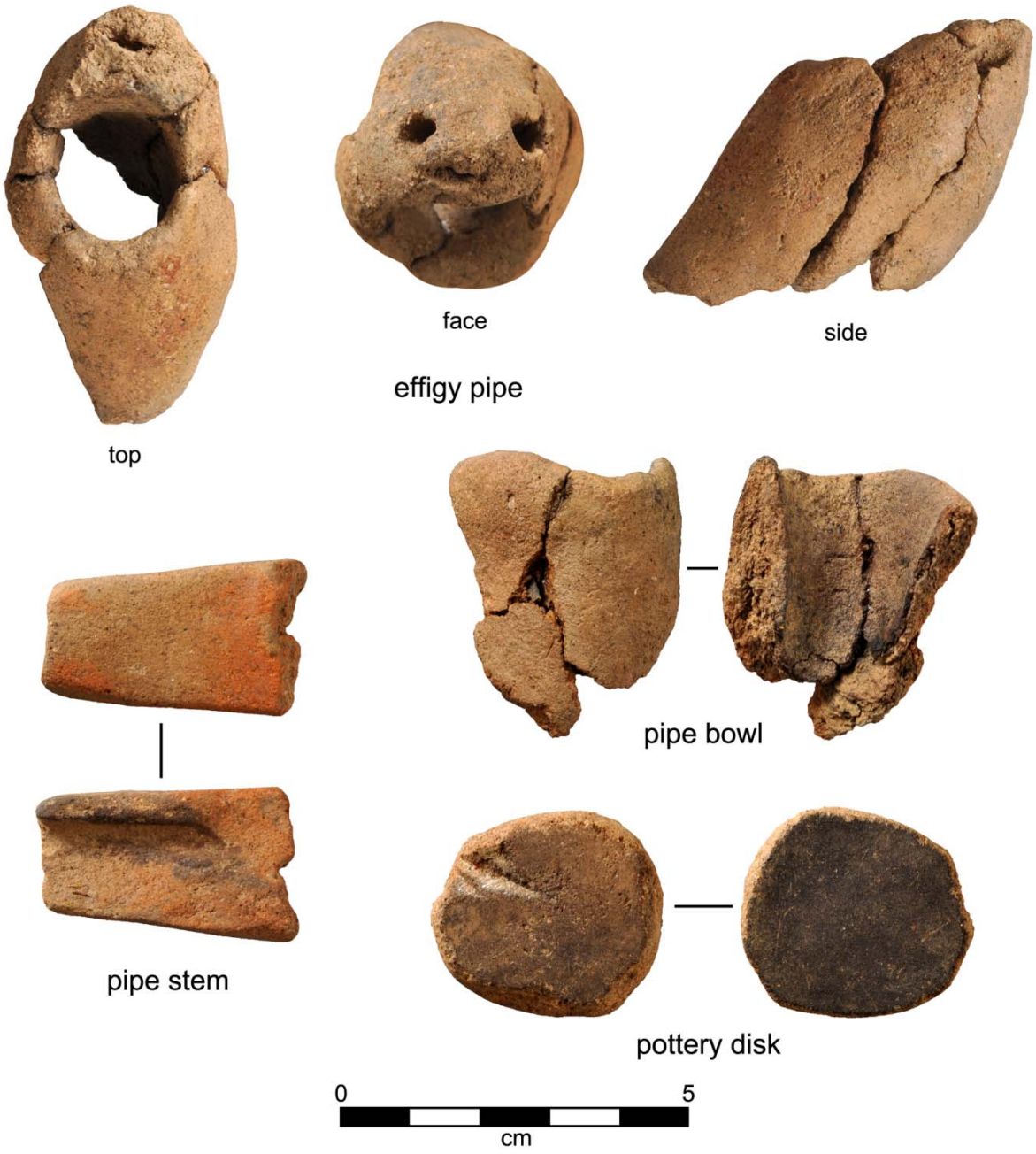

Figure 6.14. Clay pipe fragments and pottery disk from the Ashe Ferry site.

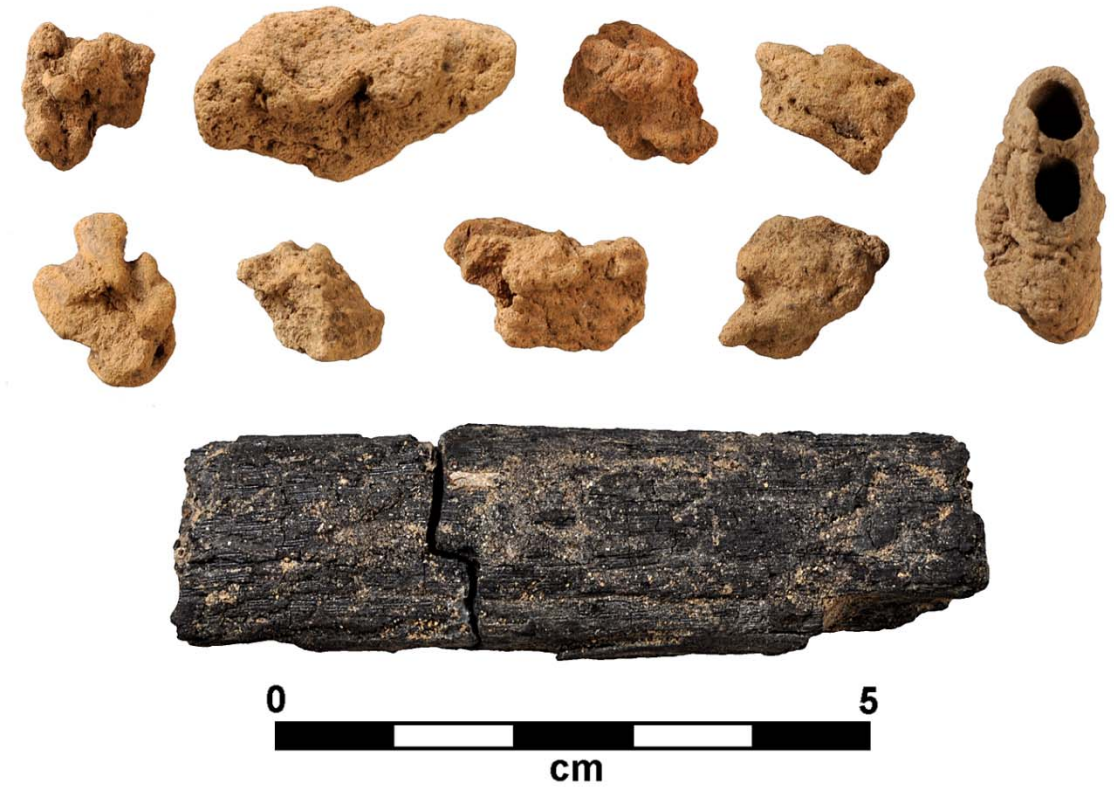

Figure 6.15. Fragments of architectural daub and mud dauber's nest from Feature 41 (top), and section of a charred wooden shaft from Feature 28 (bottom).

Wooden Artifact

Feature 28, an Ashe Ferry phase pit at the south edge of the site, yielded a single charred wooden artifact. This completely carbonized wooden shaft (consisting of two conjoining fragments) measures 67 mm in length and approximately 19 mm by 16 mm in diameter, and it is oval in cross section (Figure 6.15). Fine, longitudinal striations are evident on the exterior surface, indicating that it was intentionally modified and not simply a charred stick. Although native Carolinians undoubtedly made extensive use of wood, cane, bark, and fibers in constructing tools and shelters, such artifacts are rarely preserved on archaeological sites in the southeastern United States. The function of this particular artifact is not known.

Modern Artifacts

In addition to the talc object described above and interpreted as a probable marking pencil, 50 other objects were recovered that can be attributed to historic and modern times (i.e., nineteenth century and more recent). These artifacts are the products of various activities, including hunting, bridge and road construction, highway littering, and perhaps limited domestic activity. It is somewhat surprising that more modern artifacts were not recovered during systematic excavation, as several objects were tossed onto the site by passing cars and trucks during the course of fieldwork. All historic and modern artifacts were recovered from the humus or plowed soil and include: an aluminum pull tab (discarded); a lead wheel weight (discarded); two fragments of lead solder; a .22 cal. steel cartridge shell; an impacted .22 cal. lead bullet; a

small caliber lead ball; a small brass button; a small iron disk; an iron nut; seven wire nails (discarded); five cut nails; three iron strap fragments; three iron wire fragments; five other iron fragments; a Coca-Cola bottle fragment (discarded); 12 other bottle glass fragments; three alkaline-glazed potsherds; and a piece of coal.