

The McDonnell Douglas Site (23SC1006)

A “Lost Site” in St. Charles

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A small, but rich site was discovered on a terrace of the Missouri River in November 1968. Thereafter, archaeological material was collected from this site for several years. The site was under cultivation during the collecting period, but it has since been destroyed and replaced with part of the McDonnell Douglas (now Boeing) missile facility. Collected artifacts indicate that the site was occupied from Early Woodland through Middle Mississippian times.

This somewhat belated article is being written to more fully document the site, to provide educational material for interested adults and students, and to encourage other avocational archaeologists to document their finds. The archaeological resources of Missouri, particularly those in rapidly expanding metropolitan areas, have been destroyed at an unbelievable rate over the last 40+ years. Fortunately, many amateurs have collected and segregated artifacts from sites now lost. Reporting these lost sites and documenting their artifacts will provide extremely valuable information that would otherwise be lost to Missouri’s archaeological database.

The site was located on locally high ground on the edge of a terrace of the Missouri River. It occurred at an elevation of about 440 feet east of State Highway 94 to the northeast of St. Charles City limits. An intermittent stream below the approximately 2.5-acre site would have offered a readily accessible water supply, at least during wetter times of the year. The rich soil provided good yields of soybeans in the 1960s, and probably the same high yields for a variety of crops, including maize, during Woodland and Missis-

sippian times. The proximity to the floodplain and the Missouri River itself would have offered excellent hunting and fishing opportunities for its residents.

The preservation of shell and bone was poor, indicating that the local soil was probably somewhat acidic. In fact, the shell was leached out of most of the shell-tempered pottery sherds found at the site. Based on the number of projectile points recovered from this small site (N=103), it is probable that no one else actively collected it.

The artifacts and their historical context are discussed in some detail because they represent an interesting time in the prehistory of eastern Missouri. To this end, the following sections will address the projectile points, other lithic tools, and pottery, as well as the cultural, faunal, and human skeletal materials.

Projectile Points

Nine dart points and 94 arrow points were found and indicate that the site was occupied from the Early Woodland period through the Middle Mississippian period. Representative dart points include three Early Woodland Kramer points (Figure 1a-c). The base of another broken Kramer point is not illustrated. Two Middle Woodland

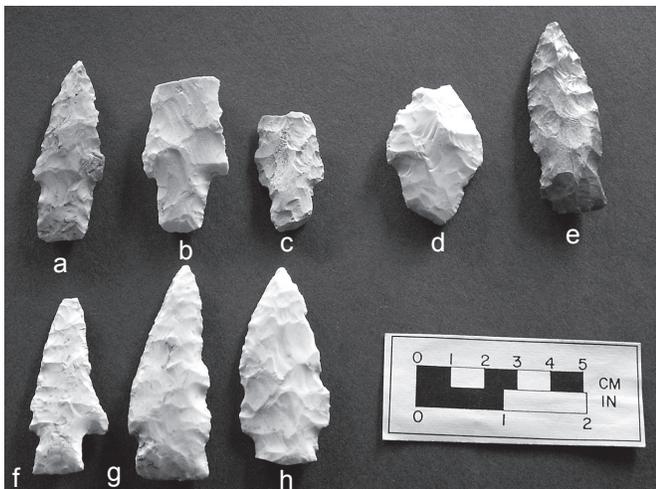


Figure 1. Early and Middle Woodland period dart points.

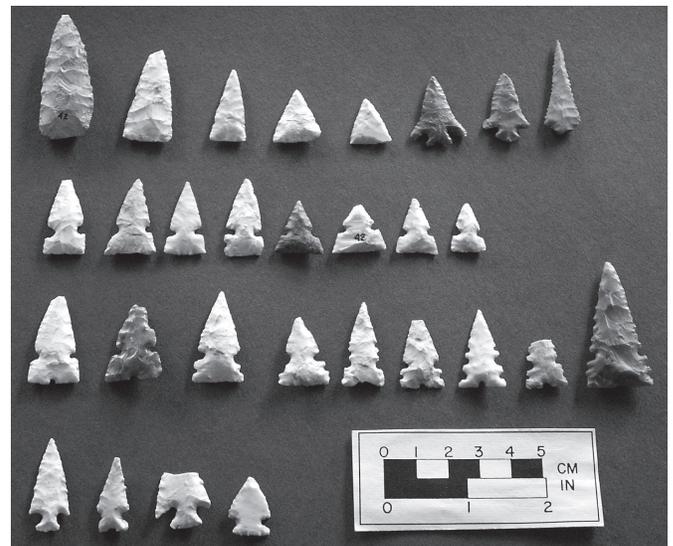


Figure 2. Representative arrow points: Top row: five Madison, two Elba and one corner-notched. Second and third rows: multiple-notched Cabokia points. Bottom row: two Scallorn and two corner-notched points.

Charles County, Missouri

points (Figure 1d-e) and three probable Early Woodland points (Figure f-h) complete this inventory.

Seventy-seven of the arrow points were complete enough to permit identification. More than 70% of these were made from Burlington chert. Typical Late Woodland and Mississippian period arrow points from this site are shown in Figure 2. The top row contains five unnotched Madison points, two corner-notched Elba points, and a serrated corner-notched point. The Elba points were made from a non-local tan to reddish-brown chert. Eight Cahokia double-notched points are shown in the next row, with triple through 8-notched varieties in the third row. In order, the latter are: 3-notched (N=2), 4-notched (N=3), 5-notched (N=1), 7-notched (N=2), and 8-notched (N=1) points. The bottom row illustrates two Scallorn points and two other corner-notched arrow points.

Since so many arrow points were found, it was decided to describe the characteristics and periods associated with the three major types—Scallorn, Madison, and Cahokia. Bow-and-arrow technology is generally considered to have been introduced in the St. Louis area after A.D. 500-600, with the Late Woodland Scallorn points being among the first to appear. These points are corner-notched, although they sometimes can appear to be stemmed. They are found in Late Woodland Patrick phase (A.D. 600-800) contexts in the American Bottom of southwestern Illinois, and they are also common at Early Mississippian sites (Kelly et al. 1984). O'Brien and Wood (1998) place the end of Early Mississippian times at around A.D. 1200.

Madison points have shapes ranging from an equilateral triangle to an isosceles triangle. Their heaviest concentration in Missouri is "in the Greater St. Louis area and southeastern Missouri" (Chapman 1980:310). These points appeared sometime before A.D. 900, are numerous on Middle and Late Mississippian sites, and were used into historic times.

Cahokia points are triangular with side notches; they sometimes also have a single notch in the center of the base.

Table 1. Arrow Points from the Cahokia Site and the McDonnell Douglas Site

Point Name	Number of Notches ^a	23SC1006		Cahokia Site		
		Number	%	Number	%	
Madison	0	21	27.3	1,409	40.1	
Cahokia	2	23		1,241		
	2+	6		0		
	4	5		65		
	6	1		13		
	8	1		0		
	Total even number of sides		36	46.8	1,319	37.5
	1	0		5		
	3	3		306		
	3+	3		0		
	5	1		31		
7	4		10			
9	0		4			
Total odd number of sides		11	14.3	356	10.1	
Alba	Corner notched	2	2.6	76	2.2	
Scallorn and other	Corner notched	7	9.1	357	10.2	
Total		77	100.0	3,517	100.0	
Length range (cm)		1.7-4.7		1.27-6.0		

Note: (+) indicates base is present, total number of notches is unknown.

Variants have multiple side notches, ranging up to eight at the McDonnell Douglas site. Cahokia points first appeared around A.D. 900 and are well represented among three caches of nearly 1200 arrow points found in Early Mississippian contexts in Mound 72 at the Cahokia site east of St. Louis in the American Bottom. Radiocarbon ages from this mound indicate that the caches date to ca. A.D. 1050-1100 (Fowler et al. 1999:59-60).

Alba points are corner notched with blade edges recurved or concave between the tip and flaring barbs. The type is found chiefly in the Caddoan area of northeast Texas, eastern Oklahoma, southwestern Arkansas, and northern Louisiana, and date to ca. A.D. 700-1400 (Bell 1958). Alba points are rarely found at the Cahokia site, amounting to only 2.16% in a large surface collection reported by Titterton (1938). They were also present in two of the three caches from Mound 72.

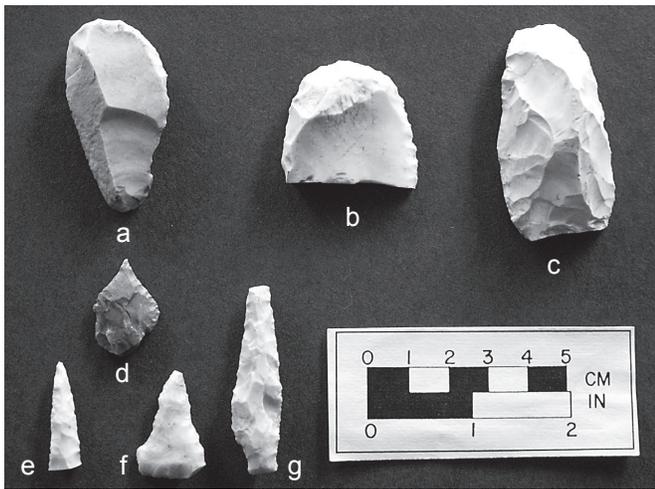


Figure 3. Other lithic tools: three Early to Middle Woodland scrapers (a-c) and four Mississippian drills/perforators (d-f).

Titterington noted that arrow points are the most numerous lithic tools found at the Cahokia site. He analyzed available points and found that 3,517 could be classified by the number and locations of notches. These data are presented in Table 1, along with comparable data from the McDonnell Douglas Site.

Examining the distribution of point types from the two sites, it is seen that the Cahokia site has a much higher percentage (40.1%) of Madison points than does the McDonnell Douglas site (27.3%). Conversely, the McDonnell Douglas site has a higher percentage of Cahokia points with an even number of notches, 46.8% vs. 37.5%. Since the Madison point continued to be produced well into late prehistoric and early historic times, these differences could be interpreted to mean that the McDonnell Douglas site was abandoned earlier, possibly during the Middle Mississippian period. Other than these differences, the relative rarity of Cahokia points with odd numbers of notches and other corner-notched points correlate well between the two sites.

Other Lithic Tools

The tool assemblage demonstrates that the inhabitants worked with bone, wood, and hides, and also practiced agriculture. Four abraders were found, three made of Missouri River clinker or pumice and the other made of sandstone. One of the pumice abraders exhibits multiple v-shaped sharpening grooves. The larger u-shaped grooves on the sandstone abraders suggest use in smoothing arrow shafts. A small Mississippian period celt, used in wood-working, was made of dark gray and white granite. It is 8.3 cm long, 5.1 cm wide, and 2.8 cm thick. The bit was badly battered, which reduced the overall length by about 1.7 cm. The poll end of a broken celt measures 8.6 cm long, 5.6 cm wide, and 3.4 cm thick. It was also made of dark gray and white granite.

Several tools made of chert are shown in Figure 3. They include two plano-convex end scrapers (Figure 3a-b) and a humped-back scraper (Figure 3c), probably dating to the Early Woodland to Middle Woodland periods. These scrapers were most likely used in hide preparation and/or woodworking. Four chert drills/perforators were also found. One with a needle-like tip was made from a flake (Figure 3d). A broken drill tip and another drill that has been worked from a triangular shape, possibly an arrow point, are shown in Figure 3e-f. The final drill (Figure 3g) is sturdy and has a square base, with only the tip missing.

Ten pieces of chert with “soil gloss,” the polish commonly observed on digging tools, including hoes used in agriculture, were found. They consist of a hoe bit made of Mill Creek chert from southern Illinois, seven sharpening chips, and two pieces that were fire shattered.

A single well-made utilized blade in the collection has a maximum length, width, and thickness of 60 mm, 19 mm, and 5 mm, respectively. It was made from black Excello chert, a material found very infrequently on Missouri and Illinois sites. Blades of this quality are typically diagnostic of the Paleoindian and Middle Woodland periods. Since we have other artifacts assignable to the Middle Woodland period, the blade has been attributed to that period.

Ceramics

A total of 165 pottery sherds was collected from the site. These consist of 77 rims, four vessel handles, and 84 body sherds. The range of vessel wall thicknesses is 3–9 mm. Only 11 cord-marked and limestone-tempered sherds (7% of the total) occur in the ceramic collection. One grit-tempered sherd and one grog-tempered sherd are also present. The remaining sherds are shell-tempered and can be attributed to the Early and Middle Mississippian periods. Twenty-two of the Mississippian sherds are red-slipped and 15 of these are incised.

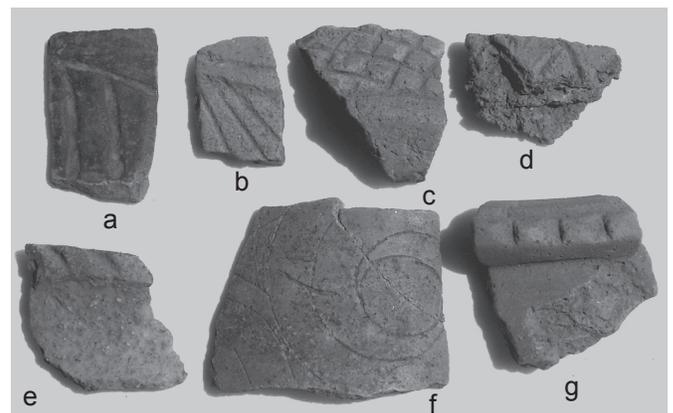


Figure 4. Decorated pottery sherds; all Mississippian except perhaps one (d) that may be Middle Woodland.

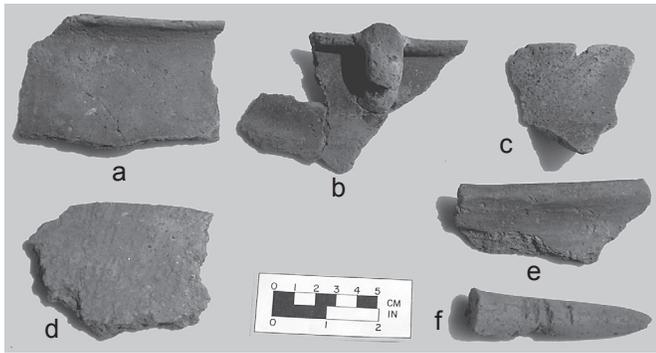


Figure 5. Partial vessels: rims (a-c and e) and a representative beaker handle (f) from the Mississippian period; rim (d) from the Late Woodland period.

Decorated Pottery

Twenty-nine pieces of pottery exhibit incised decorations. Examples of these are shown in Figure 4. One of the three pieces of black Ramey incised pottery from the site is shown in Figure 4a. In the American Bottom in nearby Illinois, this pottery type dates to late Early and early Middle Mississippian times, or A.D. 1100-1250. A portion of a flat-bottom bowl that is red-slipped inside and outside, and is also decorated with cross-hatched incising is shown in Figure 4c. The sherd shown in Figure 4d is very fragile and has an interesting dentate or “saw-toothed” stamped design on the outer rim surface. It appears to be grit- or rock-tempered and may be from a Middle Woodland vessel.

The decorations shown in Figure 4f appear to be part of two concentric incised arcs with cross-hatching inside the smaller arc. This sherd, red-slipped inside and out, was part of a thin, well-made vessel with straight walls and an internal diameter of only 7 cm. This may have been part of a small straight-handled vessel called a “Tippets bean pot,” a handled beaker form that also appeared during Middle Mississippian times in the St. Louis area. The decorated rim sherd in Figure 4g has inwardly sloping walls and a groove around the rim with adjacent decorative marks. The vessel has remnants of a red slip on the inner wall.

Partial Vessels and Appendages

Five of the recovered rim sherds were large enough to permit estimates of vessel size. The sherds are shown in Figure 5, with corresponding profiles presented in Figure 6. The first two vessels (Figures 5a-b and 6a-b) have inner rim or vessel orifice diameters of 27.6 cm and 34.2 cm, respectively. One (Figure 5b) has opposing loop handles and is smoothed over. Another represented vessel (Figure 5c) is a short-necked bottle of the type that made its appearance around A.D. 1000 (O’Brien and Wood 1998:258). The neck is 4.5 cm in height and has an internal rim diameter of 10 cm. The single represented Late Woodland vessel (Figure 5d) was limestone-tempered and cord-marked to the rim, and averages 11 mm thick with a rim diameter of 25.2 cm.

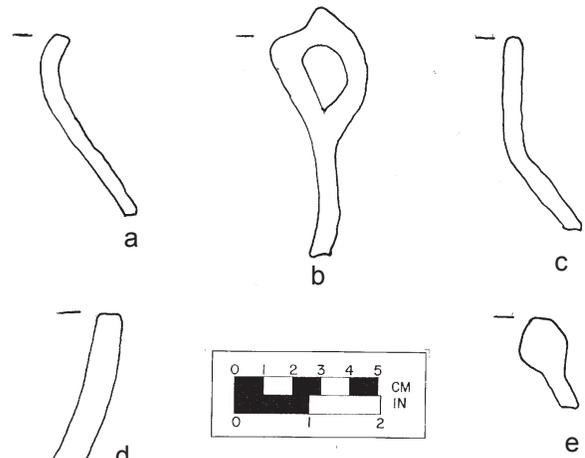


Figure 6. Profiles of the vessels shown in Figure 5.

One vessel (Figure 5e) is red-filmed on the exterior and has an inner rim diameter of 28.8 cm. Three “Tippets bean pot” handles of the type shown in Figure 5f were found, as well as another riveted loop handle.

Miscellaneous Cultural Material

This section is a catch-all for materials that provide further insight into the lives of the inhabitants of the site. Five pieces of burnt daub, perhaps remnants of a wattle-and-daub structure, were found. Four had wattle impressions and one included a wasp’s nest. Hematite and galena, possibly used for the manufacture of red and white pigments, also were found. The six pieces of hematite weigh 172 g and three exhibit grinding marks or facets. The two galena cubes measure about 1 cm on a side, but do not exhibit grinding or faceting.

In addition to lithic and ceramic artifacts, eroded fragments of animal bones, teeth, and shells show that at least beaver, deer, and mussels were utilized as food resources by the residents of the McDonnell Douglas site, presumably over a long period of time. The final artifacts in this category can be assigned to the Historic period. They include a musket ball about .47 inches in diameter (50 caliber?) from the middle-to-late 1800s and a 25-caliber slug from the 1900s.

Skeletal and Dental Material

Several small bone fragments and human teeth were found over the years. In 2005, Dr. Daniel Wescott, a skeletal biologist in the Department of Anthropology, University of Missouri, was asked to identify this material. Dr. Wescott was very helpful and his analysis of the human skeletal and dental material is presented here.

Table 2. Inventory of Human Remains from 23SC1006

Item	Comments
Right 3rd mandibular molar	Little or no observable attrition.
Left 3rd mandibular molar	Little observable attrition.
Right 1st mandibular molar crown	No observable attrition or interproximal contact facets.
Left mandibular molar crown	No observable attrition or interproximal contact facets.
Right 1st maxillary molar crown	Flattening of the cusps and small areas of dentin exposure on the two lingual cusps. There is a small contact facet mesially and a large facet distally.
Right 2nd maxillary molar crown fragment	Flattening of the cusps and small dots of dentin exposure. Large interproximal contact facets on mesial and distal surfaces. Represented by two fragments.
Left 1st or 2nd maxillary molar crown	No attrition and no interproximal contact facets and mild Carabelli's trait expression.
Left 1st or 2nd maxillary molar crown	No attrition and no interproximal contact facets.
Molar crown fragments	No observable attrition.
15 small bone fragments	Possibly human.

The human skeletal material consists of 10 tooth crown fragments, representing nine teeth, and several long bone fragments. Detailed descriptions of these items are presented in Table 2. Inspection of the dental material shows that there is no repeat in the teeth, so the minimum number of individuals is one. However, differences in attrition (wear) and development suggest that at least two and possibly three individuals are represented. Because of the fragmentary nature of the teeth it is difficult to determine their stage of development. However, the lack of attrition or inter-proximal wear facets on many of the teeth suggest that they had not erupted. At least one of the individuals was probably between three and 10 years of age. Based on dental attrition, the other individual was probably 17 to 25 years old.

Dr. Wescott was asked for recommendations on the proper handling and reporting of human remains under the law. He suggested contacting Ms. Judith Deel at the State Historic Preservation Office, Missouri Department of Natural Resources. The author subsequently sent the human remains to Ms. Deel and told her that he would be writing an article on the site and associated artifacts. She was pleased to receive the material and asked for a copy of the article.

Summary

This report includes descriptions of nine dart points and 77 arrow points and illustrations of almost half of them. Represented cultural periods include Early, Middle, and Late Woodland, as well as Early and Middle Mississippian.

Perhaps some of the Madison arrow points also were made during the Late Mississippian period. The chipped-stone artifacts indicate that the major occupation was during Mississippian times and the material of choice was Burlington chert.

The ceramics also indicate that the site was most intensively occupied during Early to Middle Mississippian times. Only 6.7% of the 165 sherds are limestone-tempered and can be attributed to either the Late Woodland or Early Mississippian periods. Representative decorated sherds were shown, with respective dates reported from the nearby American Bottom in Illinois. The same temporal information was provided for five partial vessels. Four of these were shell tempered and the dates for their manufacture cluster between A.D. 1000 and 1250. Several pieces of pottery were red filmed and six pieces of hematite, used for red pigment, were found. Two pieces of galena, sometimes used for white pigment, were also found.

Evidence was presented that at least one wattle-and-daub structure, possibly a house, was burned on the site and the resident's diet included deer, beaver, and mussels. Based on the site's location, it is assumed that waterfowl and fish were also important food sources for these people. Hoe fragments with "soil gloss" show that the residents also practiced agriculture at the site during the Mississippian period.

The tool assemblage shows that residents from the Early Woodland through the Mississippian periods worked with bone, wood, and hides.

Human dental material indicates that two and possibly three burials are represented. One individual was probably a youth of 3 to 10 years of age and the other 17 to 25.

Artifacts that consist of a mid-to-late 1800s musket ball to a twentieth-century 25-caliber slug indicate occasional hunting on the site during the Historic period.

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