A Late Archaic Titterington-Phase
The Schoettler Road S

Richard Martens

The Schoettler Road site occurs in the uplands near the Missouri River valley. It was discovered by the author in January 1969. This site was actively collected until it was destroyed in the middle 1970s during construction of the Sycamore Estates subdivision. A total of 334 lithic artifacts from this prolific site represents occupations dating from Late Paleoindian through Historic times, with the majority attributed to the Late Archaic Titterington phase.

This is the second article in a series written to document artifacts from destroyed or "lost sites" (Martens 2006). This extremely valuable information would otherwise be lost to Missouri's archaeological database. It is hoped that these articles will provide educational material for interested adults and students, as well as encourage avocational archaeologists to document their finds.

The site was located in the City of Chesterfield on the south-facing side of a hill that gently slopes down to Creve Coeur Creek. The artifacts were found scattered in an approximately 150-x-400-m band. The largest portion of the site was located northeast of Schoettler Road, but it continued on the other side, hence two site numbers. An extensive debitage-and-tool scatter characterized the site, but no trash pits or prehistoric faunal materials were evident. The land had been farmed for more than 100 years and artifacts were collected by the farmers, students from the nearby seminary (now the site of Logan College), and other parties. Considering this activity, it is surprising that the author was able to collect so many artifacts.

The surface collection consists of 334 lithic artifacts. Of these, 275 were assigned to temporal categories ranging from the Dalton to Mississippian periods (O'Brien and Wood 1998). There were also some artifacts from the middle 1800s through the early 1900s. The percentages of artifacts assigned to each prehistoric temporal period are presented in Table 1. Late Archaic artifacts (81.1%), primarily from the Titterington phase (77.5%), are dominant. Middle Archaic artifacts (7.3%) are the next largest contributor followed by Dalton (5.8%) and Middle Woodland (2.2%). Since most of the artifacts are associated with the Titterington phase, it was decided to provide a detailed description of this phase and the artifacts assigned to it. It is hoped that this will provide additional insight into this time period in Missouri and eastern Illinois.

Table 1. The Temporal Periods Represented at the Schoettler Site and the Percentages of the Lithic Artifacts in these Periods.

Temporal Category	No. of Artifacts	% of Total Artifacts
Dalton	16	5.8
Early Archaic	5	1.8
Middle Archaic	20	7.3
Late Archaic	223	81.1
Titterington	213	77.5
Other phases	10	3.6
Early Woodland	1	0.4
Middle Woodland	6	2.2
Late Woodland	2	0.7
Mississippian	2	0.7
Grand Total	275	100

Titterington and Related Phases

The Titterington phase was named for Dr. Paul Titterington, an avocational archaeologist who collected and excavated in the St. Louis area ca. 1920–1950. Titterington was both a member and trustee of the Missouri Archaeological Society. He was the recipient of an Achievement Award from the Society in 1953 (Blake 1969).

In 1950, he authored the seminal work on this phase, *Some Non-Pottery Sites in the St. Louis Area,* which described the artifacts associated with Titterington-phase burials. Since then, archaeologists have studied this phase extensively and further defined the temporal and geographic boundaries and artifacts associated with habitation and mortuary sites.

Three other Late Archaic phases in Missouri appear to be contemporaneous and share some artifact types with the Titterington phase (on the eastern Ozarks boundary). These phases are Sedalia and Nebo Hill on the northwest Ozarks boundary and Smetley between the western Ozarks and the eastern edge of the plains. The close relationship between the Sedalia and Titterington phases was recognized by both Chapman (1975) and Cook (1976). The definition of the related Smetley phase was posited by Ray and Lopinot (2005). Reid (1984:76) suggested that the Nebo Hill phase was contemporaneous with the Titterington phase, but ^{14}C measurements indicate that it dates to the end or even slightly later than the time spans for the other phases. Reid's attribution resulted in part because of the in situ recovery of Sedalia and Etley points from three Nebo Hill sites.

The time spans for these phases are becoming well defined and the latest results are summarized in Table 2. These time spans were identified by selecting the earliest and latest 1-sigma (i.e., standard deviation) radiocarbon ages from the available data. This information is presented

e Site in St. Louis County, Missouri: Site (23SL178/1105)

Table 2. Late Archaic Phases in Missouri and Illinois.

Phase	Time	Site(s)	No. of Dates	Reference
Titterington	2255–1920 B.C.	Koster	1	Cook 1976:65
		Go-Kart North	7	Fortier 1984:Table 44
		Hayden	4	Harl 1995:46
Smetley	2225–1835 B.C.	Big Eddy	5	Ray and Lopinot 2005:Table 6.1; Lopinot, personal communication 2007
Sedalia	2430–1675 B.C.	Bohon	1	Eschbacher 1996:8
		Phillips Spring	6	Kay 1983:Table 4.1
		Phillips Spring	4	Robinson and Kay 1982:632
Nebo Hill	1640–1570 B.C.	Nebo Hill	1	Reid 1984:12

in Table 2 along with considered sites, number of radiocarbon ages from each, and applicable references. All the sites are in Missouri with the exception of the Koster and Go-Kart North sites, which are in western Illinois. Two of the Smetley phase dates from the Big Eddy site were deleted due to either suspected cultural mixing or alluvial redeposition (Lopinot, personal communication 2007). These potentially spurious dates would have increased the time span for this phase by approximately 500 years, or to 2500–1635 B.C.

It should be noted that O'Brien and Wood (1998) have much wider, but generally overlapping time spans for points characterizing these phases. Etley and Smith points are attributed to the 1700–600 B.C. period, while both Sedalia and Nebo Hill points are placed in the 2000–600 B.C. period.

Flaked Titterington-Phase Artifacts in the Collection

There are 201 artifacts in this category (Table 3), of which 75.6% were manufactured from Burlington chert. Salem, High Ridge, and unidentified cherts are represented by 14.9%, 1%, and 8%, respectively. Rhyolite, an exotic material from the Ozarks, is represented by one Etley point (.5%). The collection from the Martens site, which is about 5.6 km to the north of the Schoettler site, contained 12 Titterington-phase artifacts (Martens et al. 2004:34). Since the material usage was similar (Burlington chert [91.7%] and Salem chert [8.3%] for the Martens site), it is possible that the two sites shared the same chert sources.

It has been noted that Stone Square Stemmed (Stone) points are often found with Etley points and may not be a separate point type, but rather an Etley variant. In fact, the two point types were found together in several pit features at the Hayden site. William Eschbacher (an avocational archaeologist) studied artifacts from the Bohon site and concluded that the Etley classification "grades from near Stone square-stemmed to near Smith basal-notched" (Eschbacher 1996:9). An extensive discussion of the Etley, Stone, and Smith Basal Notched (Smith) points is found in Ray and Lopinot (2005:176–180).

Joe Harl solved this point identification problem at the Hayden site by simply assigning all straight-stemmed points

Table 3. Artifact Type and Material for the Titterington-Phase Collection.

Flaked Artifact Type	Number	Burlington	Salem	Other	% Burlington
Etley/Stone points	116	90	9	17	77.6
Smith points	2	2			100
Wadlow points	17	13	4		76
Point preforms	38	26	10	2	68.4
Titterington drills	1	1			100
Hammerstones	1	1			100
Adzes/heavy-duty scrapers	26	19	7		73.1
Total	201	152	30	19	75.6 (of total)

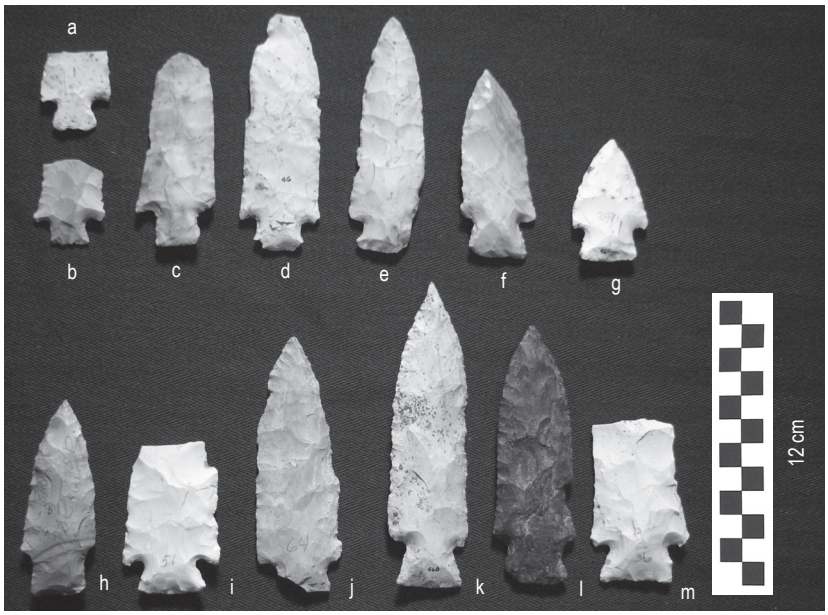

Figure 1. Etley points arranged by increasing width between notches. Though similar, point (h) is assigned to the Stone type because its stem does not expand. Point (l) is made of rhyolite from the Ozarks.

to the Stone category and expanding-stemmed points to the Etley category (Harl 1995). When the stem-form criterion was applied to the 116 points in this collection, 67.9% were categorized as Etley and 32.1% as Stone. This corresponds with what Harl found for the 247 Hayden site points, of which 69.6% were Etley and 30.4% were Stone.

Representative Etley points from the collection are shown in Figure 1, along with one Stone point (Figure 1h). Notch-to-notch widths in the collection, assumed to correspond to the spear shaft diameter, range from 14 to 28 mm and cluster into two groups. The average width for the smaller group is 17.3 mm and that of the larger is 22.8 mm. It is generally assumed that these points were attached to a spear shaft, but some may have been used as knives. Could this explain the two different average notch-to-notch widths?

The point in Figure 1g shows that even after losing more than approximately two-thirds of its length, it could be resharpened and remain serviceable. The point shown in Figure 1l and discussed in Ray (2007:65) is made of exotic dark reddish rhyolite, probably imported from the St. Francois Mountains approximately 100 km to the south. An Etley point made of rhyolite was also found in a Titterington-phase feature at the nearby Hayden site (Harl 1995:87). The largest point, which is 124 mm long, has the classic Etley needle tip, but the barbs aren't present (Figure 1k).

Two interesting Etley artifacts are shown in Figure 2a-b. The first point, which has been extensively resharpened, has the largest notch width in the collection (28 mm). This value is twice that of the smallest points (Figure 1a-b). The second point, a classic Etley, had an estimated unbroken length of approximately 108 mm. Only two Smith points were identified in the collection (Figure 2c-d). There may be more, but extensively resharpened Smith points easily pass as resharpened Etley and Stone points. Only 11 Etley points have been reworked into other tools, i.e., drills (N=6) and scrapers (N=5). Examples of these tools are shown in Figure 2f-l. One additional drill is of the Titterington type (Figure 2e). It is probable that not all of these drills were hafted (attached to a handle), but held in the hand. For example, in Figure 2g, the bit centerline of the drill is skewed relative to the angle of the base by 10 degrees. If this drill were hafted, the bit would likely have snapped with the first rotation.

Figure 2i-l shows four Etley points with scraper elements. The left upper half of the first blade has a bright silica-type polish where it was repeatedly scraped across a work item. Plow damage is evident on the right side. The next point has an end scraper on the distal end. A side scraper was flaked on the lower right half of the points in Figure 2k-l.

Four of the 17 Wadlow points in the collection are shown in Figure 3. There is some disagreement as to whether these points are separate types or Etley preforms. These points are clearly completed, and some exhibit higher quality knapping than that seen on many Etleys. In fact, the point in Figure 3a could be mistaken for a Sedalia point.

The large broken Etley preform in Figure 4a is 180 mm long and is most likely missing 20–30 mm of the tip. This artifact has been examined by several archaeologists who

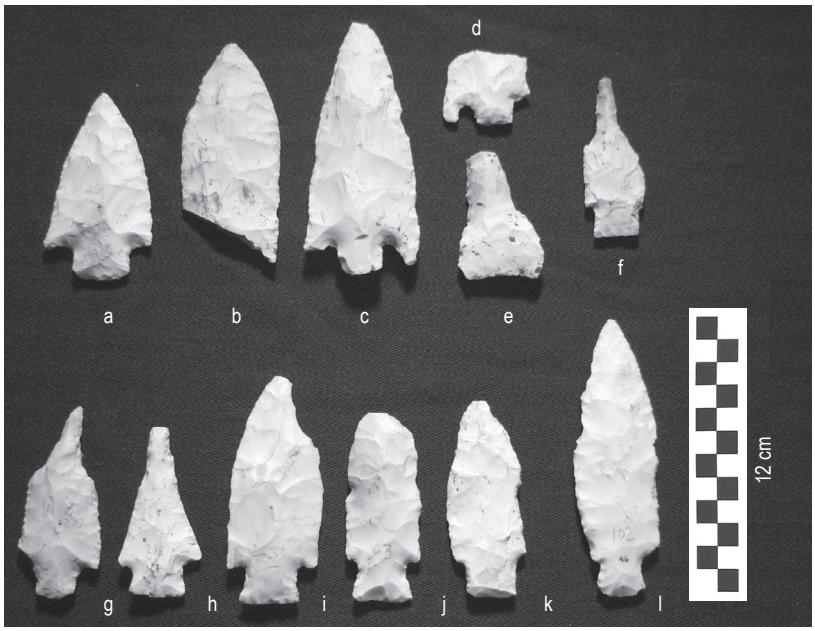

Figure 2. (a-b) Etley points; (c-d) Smith points; (e) Titterington drill; (f-l) Etley points worked into drills and scrapers.

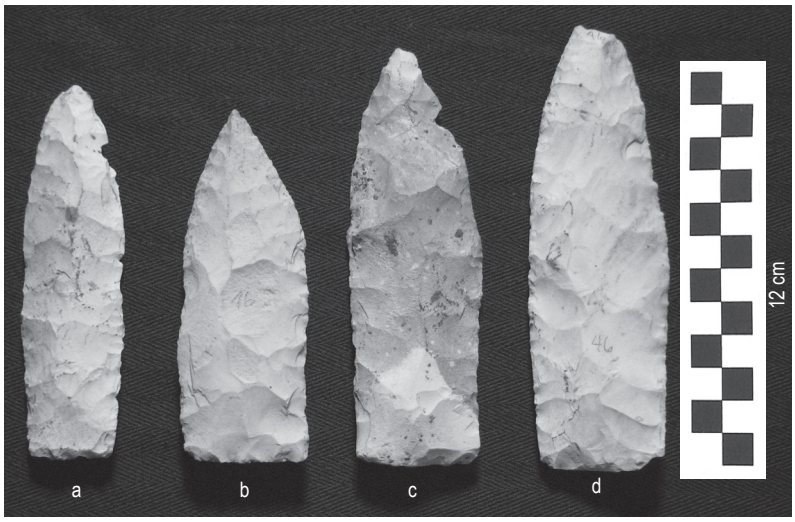

Figure 3. Four of the 17 Wadlow points in the collection.

concluded that the base had been worked in preparation for its completion. If completed, this artifact would have ranked among some of the longest, which measure "up to 250 mm long" (O'Brien and Wood 1998:144).

Representative preforms for moderately sized Etley points are shown in Figure 4b-c. Quite possibly, they were chipped into this form at the chert acquisition site and then brought to the Schoettler site. The material usage for preforms (Table 3) could indicate a preference for Burlington chert (68%) followed by Salem (26%) and High Ridge cherts (6%).

Twenty-five rectangular adzes, or heavy duty scrapers, were found at the site (Figure 4d-f). Only a few of the adzes exhibit polish. Several archaeologists feel that they were used primarily for woodworking. The adzes were produced from Burlington (73%) and Salem (27%) cherts. Only one triangular adze-type tool was found (Figure 4g). It exhibits smoothing and polish on all raised surfaces, and the edges were also smoothed. It was possibly used as a digging implement.

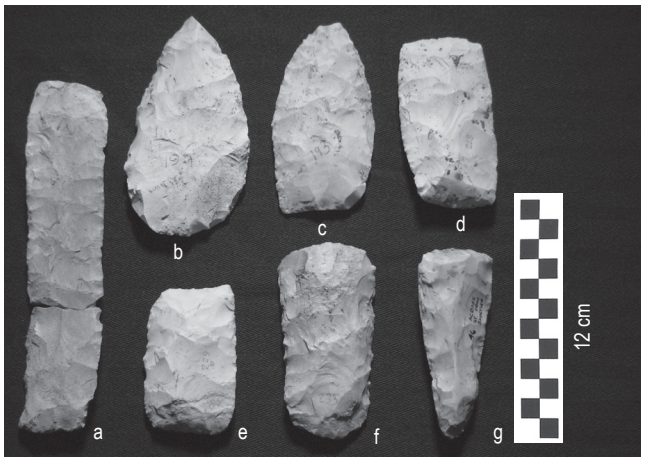

Figure 4. (a) Late stage Etley preform which would have produced a finished point 200 mm or longer; (b-c) Etley point preforms; (d-f) adzes/heavy duty scrapers (bits oriented at the top, beveled side shown); (g) polished digger.

Groundstone Titterington-Phase Artifacts in the Collection

The 12 groundstone artifacts in the collection are made from diorite, sandstone, hematite, and slate. A full-grooved axe (140 mm long), one ¾-grooved axe (98 mm long), and two axe fragments are made of a fine-grained greenish material, probably diorite. Full-grooved axes are generally attributed to the Middle Archaic period, but they have been found in association with ¾-grooved axes in a Titterington-phase burial complex (Bacon and Miller 1957).

Two of the three sandstone abraders have interesting characteristics. One is grooved on both sides and could have been used to abrade/sand wooden or bone items with an approximately 13 mm diameter. Both sides of the other abrader could also have been used on rounded objects with a diameter of approximately 25 mm. This is close to the average notch width for points and assumed average shaft diameter for the larger points of 22.8 mm. An ellipsoidal-shaped mano measuring approximately 90 mm in diameter is made of sandstone. The maximum thickness of this heavily used artifact was 39 mm.

Seven pieces of hematite were also collected, with weights of 25, 32, 80, 85, 145, 150, and 340 g. Only the 80-g fragment exhibited heavy grinding.

The artifact shown in Figure 5 is made of good quality slate and smoothly ground on all surfaces. It shows signs of plow damage. It was first thought to be a pendant, but upon further consideration it resembles a miniature butterfly-shaped bannerstone. In one study of 380 Missouri bannerstones, the butterfly shape was the third most frequently observed shape and slate was the third most commonly used material (Elliott 2000:22). A drawing and photograph of this artifact was sent to Elliott for identification. His comments follow:

> It certainly has the shape and lithic material of a larger bannerstone. Since it is so small it must have been more of a good luck charm than a weight used to balance the atlatl and spear shaft. I would guess this one would fall into the category of boatstones and bars, which supposedly were used on the flat atlatls instead of the round ones. It certainly is a beautiful work of art.

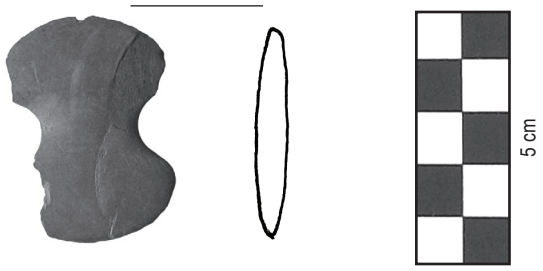

Figure 5. The bannerstone charm exhibits plow damage on the upper and lower left edges.

Flat Celts or Undrilled Gorgets?

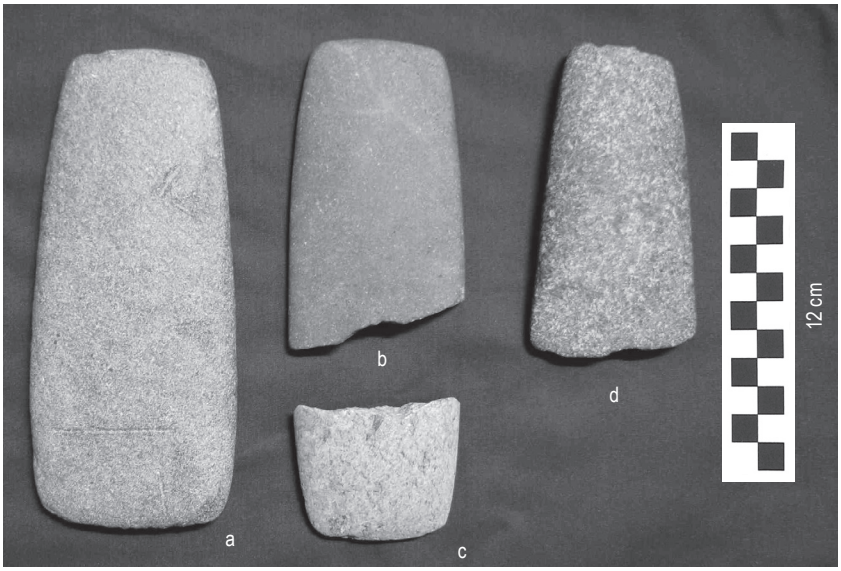

Figure 6. Unidentified artifacts thought to be either flat celts or undrilled gorgets; (a, d) from the Schoettler site and (b, c) from the Hayden site.

The two flat celts/gorgets in this collection are thin, made of diorite, unsharpened, and worked to a high finish on all surfaces (Figure 6a, d). The author showed these artifacts to Carl Chapman shortly after they were found, but he did not identify them. In 1999, Joe Harl was kind enough to look at the Schoettler material and he identified them as undrilled gorgets. He had excavated fragments of three similar artifacts at the extensive Titterington-phase Hayden site, located 6.8 km west of the Schoettler site. The two largest fragments are shown in Figure 6b-c. But these artifacts also look like the flat celts illustrated by Shippee (1964:21) and reported by others.

Illustrations of all available flat celts from Missouri and western Illinois are reproduced to scale in Figure 7. The complete Schoettler and broken Hayden site artifacts are also shown in Figures 7a-b and 7c-e, respectively. The largest of the Schoettler artifacts measures 173 mm in length, and the potential bit is not sharpened. Note the battering damage on the "bit" in Figure 7b. The finished ends of the Hayden artifacts (Figure 7c-e) are relatively thick and could be the poll sections of celts. They were found in the plowzone and are made of gabbro and granite, respectively. The mid-section piece illustrated in Figure 7d was excavated in Feature 212 at the Hayden site and is made of gabbro.

Shippee (1964:21) noted that flat rectangular polished celts made of diorite often occur in association with ¾-grooved axes on Nebo Hill sites in the Kansas City area. Seelen (1961:6) noted that ¾-grooved axes and flat celts are reported to occur on some of the Sedalia sites in the Pettis County, Missouri area, "but are exceedingly rare."

Illustrations of flat celts from Shippee's report are presented in Figure 7f-i. The largest weighed .45 kg (1 lb). They were found on sites located in Clay, Jackson, and Platte counties in Missouri and in Wyandotte County, Kansas.

Flat celts have been reported from two Titterington-phase sites in Illinois: the Go-Kart North habitation site (Fortier 1984) and the Airport mortuary site (Roper 1978). Three celts that fit the "flat celt" category were found at the Go-Kart North site (Figure 7l-n) along with a much thicker artifact that "may have been used as a wedge" (Fortier 1984:157–158). One additional flat celt made of diorite was found at the Airport site (Figure 7o). It is heavily battered, but the undamaged surfaces are smoothly polished.

Three "small thin" copper celts were excavated at the Etley mortuary site (Titterington 1950). Drawings of the smallest and largest of the three celts are illustrated in Figure 7j-k and are based upon a photograph in the MAS archives. Side views were not available, but the thickness was probably less than 3 mm. It is clear that the flat celts (Figure 7f-i and 7l-o) are not copies of the flared-bit copper celts.

It was decided to compare the measurements of the Schoettler and Hayden site artifacts with those of three different artifact classes to eliminate the confusion over their identity. These comparisons were made with two-holed Archaic gorgets from Missouri as well as both Late Archaic flat celts and Mississippian celts from Missouri and western Illinois.

A brief survey was conducted to locate gorgets with length and width dimensions similar to the Schoettler artifacts. Alan Banks kindly furnished metric information on four Missouri gorgets in his collection. Detailed information on three other large Missouri gorgets which also satisfy these criteria is provided by Shippee (1964). The width and thickness characteristics of the seven gorgets, the nine Mississippian celts from the author's collection, and the eight flat celts illustrated in Figure 7 are compared with those of the Schoettler and Hayden artifacts in Figure 8. These data clearly demonstrate that the Schoettler and Hayden artifacts are flat celts.

Further, consider that while the length of the largest Schoettler artifact (Figure 7a) and that of the longest gorget were about the same, its width (75 mm) and thickness (18 mm) were 36% and 157% greater, respectively. This means that the volume, and hence weight, of the Schoettler artifact is more than 3.5 times that of the largest gorget studied. The Schoettler artifact weighs 500 grams (about 17.6 oz), which would be extremely heavy to wear around one's neck!

Why weren't the Schoettler and Hayden flat celts sharpened? Perhaps they were partially finished and either cached, placed with a burial, or lost before sharpening.

Figure 7. Comparison of unidentified artifacts. (a-e) From the Schoettler and Hayden sites with flat celts from (f-i) Missouri and (l-o) Illinois. (j-k) Titterington-phase copper celts from the Etley site shown to demonstrate differences in shape.

Characteristic Artifacts from Titterington, Smetley, and Sedalia Sites

The vast majority of the Schoettler artifacts have been attributed to the Titterington phase, but as discussed earlier, the Smetley and Sedalia phases were contemporaneous with this phase. It would be very informative to compare the artifact types from the Schoettler site with those from the three phases. Consequently an artifact trait list, based on data from representative sites, was prepared for this comparison.

Since first identified by Titterington in 1950, a good deal of work has been done to better describe the attributes of the Titterington phase. The best summary is provided by Cook (1976). Cook details the artifacts from the mortuary sites reported by Titterington: Elm Point in Missouri and Etley, Kampsville, and Marquette Park in Illinois. Cook also includes descriptions of artifacts from the Wieman site in Missouri (Bacon and Miller 1957). A separate list of artifacts, by functional categories, was also developed from habitation sites including Modoc Rock Shelter and Koster in Illinois, and the Booth site in Missouri (Cook 1976:50).

Since Cook's report on Koster was written, additional Titterington-phase sites have been described. These include the Airport mortuary site (Roper 1978) and the Go-Kart North habitation site (Fortier 1984) in Illinois, and the Hayden habitation site (Harl 1995) in Missouri.

Cook's artifact list has been expanded to include traits from: (1) Titterington mortuary sites mentioned earlier and the results of recent excavations, (2) a Smetley- phase habitation site, and (3) Sedalia habitation sites. The new trait list (Table 4) is organized by tool function and type. The Smetley assemblage was based on the results of excavations at the Big Eddy site in Missouri (Lopinot et al. 2005). The characteristic artifacts for Sedalia-phase habitation sites were defined by Robert Seelen (1964) and represent artifacts collected from eight sites near Sedalia, Missouri. He subsequently noted that Etley

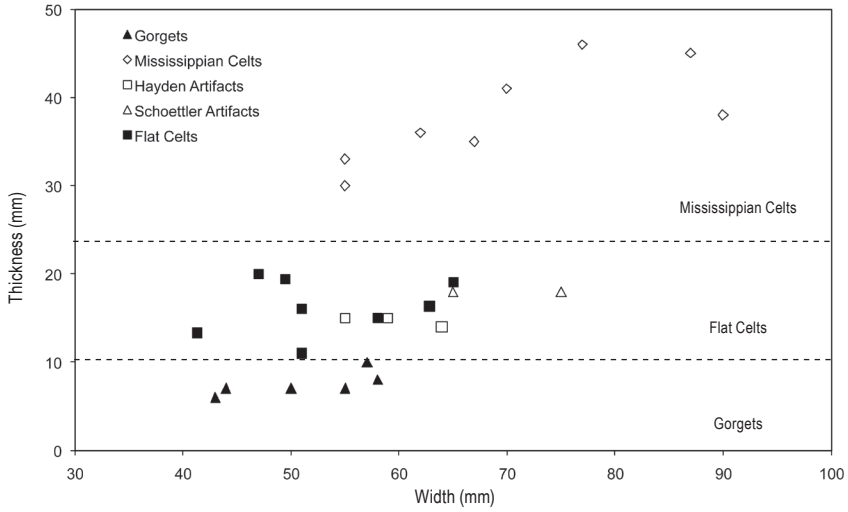

Figure 8. Width and thickness comparisons of Late Archaic two-holed gorgets and flat celts, as well as Mississippian-period celts to the Schoettler and Hayden artifacts.

Table 4. Assumed Titterington-Phase Material from Schoettler Compared with Artifact Trait Lists for Contemporary Late Archaic Phases.

		Habitation Sites				Mortuary Sites
Function	Tool Type	Titterington Phase	Smetley Phase	Sedalia Phase	Schoettler Site	Titterington Phase
Points	Etley	x	x	-	x	x
	Stone	x	x	-	x	x
	Smith	-	x	-	x	-
	side-notched	x	-	-	x	x
	Wadlow	x	x	-	x	x
	Sedalia	x	x	x	-	x
Perforating	drills	x	-	x	x	-
	bone awls	x	-	-	-	-
Scraping	scrapers	x	x	-	-	-
	spokeshaves	-	x	-	-	-
Pulverizers	manos	x	x	x	x	-
	metates	x	-	-	-	-
Manufacturing	cores	x	x	-	x	-
	hammerstones	x	x	x	x	-
	preforms	x	x	x	x	-
	sandstone abraders	x	x	-	x	-
Weights	bannerstones	x	-	-	-	x
	bannerstone charms	-	-	-	x	-
Wood working	3/4-grooved axes	x	-	x	x	x
	full-grooved axes	-	-	-	x	x
	flat celts	-	-	x	x	x
	adzes/scrapers	x	x	?	x	-
Digging	polished diggers	-	-	x	x	-
Status	copper celts	-	-	-	-	x
	copper awls	-	-	-	-	x
Ornaments	hematite beads	x	-	-	-	-
	granite beads	x	-	-	-	-
	snail shell beads	x	-	-	-	-
	bone/tooth pendants	x	-	-	-	-
Red paint	hematite	x	x	x	x	x

Note: Data from representative habitation and mortuary sites in Missouri and eastern Illinois were used in the development of this list.

and Stone points were found at six of these sites (Banks 2002:18).

The Sedalia point has been added to the Titterington-phase assemblage in this list because it has been recorded at two habitation sites: Go-Kart North in Illinois and Booth in Missouri. This point has also been identified at two mortuary sites: Airport in Illinois and Wieman in Missouri. It seems that very well-made Wadlow points grade into the Sedalia point category. Furthermore, flat celts are now considered to be Titterington-phase artifacts based on their occurrence at the Go-Kart North habitation site and the Airport mortuary site in Illinois and the Hayden habitation site in Missouri.

Inclusion of the side-notched point category in the Titterington phase has presented somewhat of a conundrum. They have not been included in trait lists in the past and were attributed to other phases. Nonetheless, this point type is often found with Titterington material. For example, a side-notched point was found as "the probable cause of death" in one of the Etley burials at the Wieman site (Bacon and Miller 1957:24). This point type was also reported from the Airport and Etley mortuary sites. Side-notched Osceola points were found with Etley and Stone points at the Hayden site. Alan Banks provided pictures of these Etley and Osceola points in his article on the Titterington phase (Banks 2002:16). For these reasons, the point type was added to the trait list.

Heavy duty rectangular adzes/scrapers are the predominant woodworking tools associated with Titterington-phase habitation sites. They typically outnumber ¾-grooved axes by more than 5:1. These adzes appear to have had several uses, including digging and scraping. Full-grooved axes first appeared in the Middle Archaic period, but are commonly found with ¾-grooved axes at Titterington mortuary sites.

Additional rare status artifacts have been associated with Titterington-phase burials in Illinois and Missouri, but are not included in Table 4. These artifacts include: (1) a tube pipe, Turkey Tail points, and plummets made of copper and stone from the Elm Point site in St. Charles County, Missouri, and (2) an engraved shell ornament and a diorite sphere from the Pere Marquette site (Titterington 1950).

Examination of the trait lists shows a considerable overlap between the three phases. The Smetley phase is only represented by one site and it is expected that artifact types like drills, manos, abraders, hammerstones, and ¾-grooved axes will be added when more sites are examined. Of course, this would significantly increase the overlap with the other phases.

The inclusion of Sedalia points and flat celts further supports the strong interrelationships between the Titterington and Sedalia phases. Finally, the relatively rare flat celts are now associated with the Titterington, Sedalia, and Nebo Hill phases. But, as has been mentioned, the Nebo Hill phase appears to be younger and possibly descendant.

What is learned through comparison of the Schoettler assemblage to those of the three phases? First, the Schoettler artifact list best matches that of the Titterington phase, including the bothersome side-notched points. The bannerstone charm has been included as an artifact type because of its similarity to the equally rare bannerstone. The presence of only two Smith points, compared to 116 Etley and 37 Stone points, indicates a weak tie to the Smetley phase. The single trianguloid polished digger, compared to 25 heavy duty adzes/scrapers, also indicates the weak influence of the Sedalia phase.

Artifacts from Post-Clovis Times (8950 B.C.–present)

All of the artifacts in the collection post-date Clovis times and this section addresses the periods other than the Titterington phase of the Late Archaic period. These artifacts represent 22.5% of the diagnostic lithic materials and nine ceramic artifacts. The artifact types and numbers are discussed below, along with pictures of representative examples (Figures 9-10).

Dalton Period (8950–7900 B.C.)

The 16 Dalton artifacts represent 5.8% of the collection and are comprised of eight projectile points, five end scrapers, and three adzes. Representative examples are shown in Figure 9a-g. The resharpened points exhibit a strong right-hand bevel. The quantity and diversity of tools strongly implies that this was a Dalton base camp (Price and Krakker 1975).

Early Archaic Period (7500–5000 B.C.)

The Early Archaic period is represented by five Hardin Barbed points which range from nearly pristine to extensively resharpened (Figure 9h-k). Two of these resharpened points exhibit significant left-hand bevels, best illustrated in Figure 9k.

Middle Archaic Period (5000–3000 B.C.)

The Middle Archaic period is represented by 19 artifacts assigned to the Helton phase and one other point. The Helton material consists of six Godar side-notched points, 10 Helton points, and three thin end scrapers made of heat-treated chert. Two broken Godar points and an end scraper (Figure 10a-c) and a classic Helton point (Figure 10d) are shown. A Jakie Stemmed point (Figure 10i) is the lone non-Helton-phase point. The large full-grooved axe and

Figure 9. Dalton period (a-d) points, (e) adze, and (f-g) end scrapers; Early Archaic (h-k) Hardin Barbed points ranging from nearly pristine to broken and extensively resharpened.

axe fragments attributed to the Titterington phase could also date to this period.

Late Archaic Period (3000–600 B.C.)

Ten additional points are in the collection, two stemmed points were unidentified, and examples of the rest are presented in Figure 10e-h and 10j. Highest in frequency were terminal Late Archaic Springly points (N=5), two of which are shown in Figure 10e-f. Only single examples of the other three Late Archaic point types—Kings Corner-notched, Merom, and Osceola—were found (Figure 10g-h, j). The large Osceola point has been reworked into a drill.

Early Woodland (600–250 B.C.) through Middle Woodland (250 B.C.–A.D 450) Periods

These periods are only lightly represented in the St. Louis area, including at the Schoettler site. The Gary point shown in Figure 10k was the only Early Woodland artifact found. Represented Middle Woodland projectile point types consist of Lowe (N=1), Stueben (N=1), Snyders (N=2), and Snyders/Gibson (N=2) (Figure 10l-o).

Late Woodland through Mississippian Periods (A.D. 450–1800)

Seven ceramic and four lithic artifacts can be attributed to these periods. The Late Woodland Mund and Scallorn points are shown in Figure 10p-q. Scallorn points are also found on Early Mississippian sites in Illinois. Three small grit-tempered cordmarked sherds from this period were also found. The Mississippian period is represented by two-notched and four-notched Cahokia points (Figure 10r-s), as well as four small shell-tempered sherds. These points first appeared around A.D. 900 and continued to be used for some 200 years.

Historic Period (A.D. 1800–present)

Kaolin pipe fragments (N=2) are typically assigned to the pre-Civil War period (Figure 10t-u). There was an extensive scatter of oyster shells mixed with broken plates on part of the site. The farmer said that the scatter was probably from "the old days when garbage was brought in from St. Louis to feed the hogs" in the late 1800s to early 1900s. A couple of early turn-of-the-century bottles (including one embossed with the "3 in 1" machine oil logo) were also found.

Figure 10. Representative artifacts. From the Middle Archaic: (a-b) Godar points; (c) end scraper; (d) Helton; (i) Jackie Stemmed. From the Late Archaic: (e-f) Springly; (g) Kings Corner Notched; (h) Merom; (j) Osceola points. From the Early Woodland: (k) Gary point. From the Middle Woodland: (l) Lowe; (m) Stueben; (n-o) Snyders points. From the Late Woodland: (p) Mund; (q) Scallorn points. From the Mississippian period: (r) Cahokia notched; (s) 2-notched points. From the mid-1800s: (t-u) Kaolin pipe fragments.

Summary

This report includes descriptions of the 275 lithic artifacts from the Schoettler site. Since 77.5% of these artifacts were attributed to the Late Archaic Titterington phase, they were discussed in detail. This discussion includes comparisons with artifacts from other sites in Missouri and Illinois. Of the Titterington artifacts, 201 are made of chert and 12 are made of groundstone. Burlington chert was the material of choice for the flaked artifacts, with 75.6% usage versus only 14.9% for Salem chert. No heat treatment was noted. The major artifact categories were projectile points (N=135), biface preforms (N=38), and adzes/heavy-duty scrapers (N=26).

Not surprisingly, Etley and Stone were the dominant point types (N=116). Using Harl's procedure for discriminating between the similar point types yielded 67.9% Etley points and 32.1% Stone points. This percentage distribution is within 2% of that obtained from the nearby Hayden site excavated by Harl.

Analysis of the minimum width between notches on the Etley points, assumed to correspond to the spear shaft diameter, showed two width clusters within a range of 14–28 mm. The notch-to-notch widths averaged 17.3 and 22.8 mm for these two clusters. Eleven of the Etley points had been reworked into drills, end scrapers, and side scrapers. Finally, the adzes/heavy duty scrapers were found to outnumber groundstone woodworking tools by more than 5:1.

Described groundstone artifacts include both full-grooved and ¾-grooved axes, and sandstone abraders. One of these abraders had grooves on both sides, consistent with smoothing wooden spear shafts with diameters of approximately 25 mm. This is close to the larger of the average notch-to-notch widths of 22.8 mm. A small groundstone artifact, identified as a bannerstone charm, looks like a miniature undrilled butterfly bannerstone.

A study was conducted to determine if groundstone artifacts from the Schoettler and Hayden sites were flat celts or undrilled gorgets. Their width and thickness measurements were compared with those of gorgets, Late Archaic flat celts, and Mississippian celts. It is clear that these artifacts were flat celts. In the course of this study it was pointed out that two Titterington sites in Illinois also produced flat celts. Previously, this type of celt had only been identified from Sedalia and Nebo Hill sites.

A table of artifact traits was developed for the Titterington, Smetley, and Sedalia phases. The information for the Titterington phase came from habitation and mortuary sites in Missouri and Illinois, whereas information for the other phases came from habitation sites in Missouri. This table demonstrates the diversity of goods associated with these phases and their overlap. The Schoettler artifacts, included for comparison, show close agreement with the Titterington-phase traits and only weak relationships to the Smetley and Sedalia phases.

The report concludes with a summary and illustrations of the artifacts representing temporal periods other than the Titterington phase of the Late Archaic period. This lithic material represents many different episodes of prehistoric site use, ranging from Late Paleoindian/Dalton to Mississippian and amounts to 22.5% of the total collection. The major contributors are: the Middle Archaic (7.3%), Dalton (5.8%), other phases of the Late Archaic (3.6%), and Middle Woodland (2.2%). The ceramic artifacts in the collection consist of three Late Woodland sherds, four Mississippian sherds, and two Kaolin pipe fragments from the mid-1800s.

Acknowledgments

I would like to thank a number of archaeologists in Missouri and Illinois who readily shared their expertise and time with an avocational archaeologist. Joe Harl examined the Schoettler collection and identified many of the artifacts in 2001. Patti Wright provided access to the Hayden site material (90+ boxes) at the University of Missouri–St. Louis curation facility and spent a morning locating the flat celt fragments. Neal Lopinot shared his expertise and relevant reference material as well as editing this article for technical accuracy. The following archaeologists commented on individual artifacts: Roger Boyd, Brad Koldehoff, and Jack Ray. Avocational archaeologists also helped. Alan Banks provided measurements of 2-holed gorgets in his collection and Dan Elliot identified the bannerstone charm.

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