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Smith Creek Lithic Tool Analysis

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Background:

This paper discusses my analyses of the lithic artifacts gathered from excavations from the Smith Creek site between May and June 2015. Smith Creek is a Coles Creek period mound site located in Southwest Mississippi which consists of three mounds surrounding a central plaza and was occupied between 700-1300AD (Kassabaum et al, 2014). Coles Creek culture is associated with the transition between the Woodland and Mississippi periods (Kassabaum et al, 2014; Kidder, 1992; Milner, 2004). This transition saw a good deal of social and technological changes such as the shift to more centralized political organization based on ascribed status, as well as the adoption of intensive maize cultivation in most (but not all) areas (Milner, 2004). Smith Creek and its contemporary sites could potentially yield evidence for how and why these transitions occurred.

My research is focused mainly on complete tools and tool fragments although I will pay some attention to production fragments as well. The majority of the tools were gathered from mound A, mound C, and the south plaza site areas of Smith Creek, although there were a few that came from surface collections from around the site. All of the complete tools and larger production fragments were collected by sifting soil samples through a ½” dry screen, smaller flakes anddebitage were collected by sifting through a ¼” dry or wet screen. Upon returning to Penn the lithic materials were separated from non-lithic materials and bagged according to their respective site area, screen size, and type (tool, tool fragment, flake,debitage).

Totals of lithic materials:**Tools**

| Site Area | Count | Weight (g) | Average (g) |
|-------------|-------|------------|-------------|
| Mound A | 10 | 45.4g | 4.54g |
| Mound C | 6 | 119.7g | 19.83g |
| South Plaza | 4 | 7.9 | 1.97g |
| Elsewhere | 2 | 1.8g | .9g |
| Total | 22 | 174.8g | 7.94g |

Flakes ½” Screen

| Site Area | Count | Weight (g) | Average (g) |
|-------------|-------|------------|-------------|
| Mound A | 40 | 71g | 1.785g |
| Mound C | 27 | 36.3g | 1.344g |
| South Plaza | 82 | 135.2g | 1.648g |
| Elsewhere | 21 | 37.9 | 1.804g |
| Total | 170 | 280.8g | 1.651 |

Flakes ¼” Screen

| Site Area | Count | Weight (g) | Average (g) |
|-------------|-------|------------|-------------|
| Mound A | 124 | 49.8g | .393g |
| Mound C | 14 | 4.7g | .335g |
| South Plaza | 45 | 14.8g | .328g |
| Elsewhere | 5 | 5.1g | 1.02g |
| Total | 188 | 74.4g | .395g |

Debitage ½” Screen

| Site Area | Count | Weight (g) | Average (g) |
|-------------|-------|------------|-------------|
| Mound A | 56 | 322.8g | 5.7g |
| Mound C | 34 | 120.5g | 3.5g |
| South Plaza | 135 | 771g | 5.7g |
| Mound B | 3 | 40.9g | 13.6g |
| Elsewhere | 30 | 155.8g | 5.1g |
| Total | 258 | 1,411g | 5.4g |

Debitage ¼” Screen

| Site Area | Count | Weight (g) | Average (g) |
|-------------|-------|------------|-------------|
| Mound A | 147 | 63.2g | .429g |
| Mound C | 19 | 6.3g | .331g |
| South Plaza | 39 | 19.4g | .497g |
| Elsewhere | 5 | 4.7g | .94g |
| Total | 210 | 93.6g | .445g |

Next it was necessary to determine exact amounts and weights of each category of materials. I added up the total counts and weights of tools/tool fragments, flakes, and debitage and used that to determine the average weight of each tool or production remnant according to each site area. While I did this for materials that were gathered from both ½” and ¼” screens I focus most of my attention towards ½” materials for these purposes because ¼” screening was used at some site areas more than others whereas ½” screening was used more or less universally at each site area and would provide a more accurate picture of lithic use and production at each site area. This permits us to gain at least a superficial idea of the intensity of lithic use and manufacture at the site and make comparisons between each site area. The most immediate deductions one can draw by examining the data is that South Plaza appeared to have the most intensive tool manufacture compared to the other site areas given the considerably larger amount of production remnants such as flakes. Mound A and C on the other hand yielded the greatest number of complete tools and tool fragments.

**The Tools:
Functional
Types**

| Bag # | Site Area | Level/Zone | Functional Type |
|---------|-------------------|-------------------|----------------------------------|
| 4.2.3 | South Plaza | 1 | Point Fragment |
| 7 | South Plaza | 1 | Unknown Biface |
| 20.1.4 | South Plaza | 2 | Point |
| 20.3.4 | South Plaza | 2 | Point Fragment |
| 34.1.3A | South Plaza | 3 | Point |
| 34.1.3B | South Plaza | 3 | Point |
| 50.1.2 | Mound A | 4 | Point |
| 114 | Mound A | 6 (wall-cleaning) | Point |
| 121.1.2 | Mound A | 7 | (possible broken point-scraper.) |
| 215 | Mound A | 8 | Point Fragment |
| 216.1.2 | Mound A | 8 | Point |
| 217 | Mound A | 8 (wall-cleaning) | Point |
| 229 | Mound A | 8/9 interface | Biface Fragment |
| 232 | Mound A | 9 | Scraper |
| 8 | Mound C | 1 | Point Fragment |
| 161 | Mound C | 7 | Point |
| 185 | Mound C | 8 | Awl |
| 233 | Mound C | 11 | Gorget Preform |
| 238 A | Mound C | 11 | Unknown Preform |
| 238 B | Mound C | 11 | Point |
| 241 | SE corner of site | Surface | Point |
| 242 | NE corner of site | Surface | Unknown Fragment |

Once the lithic materials had been sorted and counted, I shifted my attention to determining a functional category for the tools that were mostly intact. This was of variable difficulty for each tool as there were some which were quite obvious such as points and other tools were especially ambiguous yet had clearly been worked. The majority of the tools recovered from all site areas were points, the types of which I will discuss later. Mound A yielded four intact points, two scrapers (the shape of one of which suggests it may have been a point reworked into a scraper), and two fragments. Mound C contained the largest lithic tools which were also of the greatest range of functions; one (likely) gorget preform, one ambiguous tool preform, one particularly large point, an awl, one point and one point fragment. The two preforms are significant because they are evidence of on-site tool manufacture, particularly since they were found at or near midden layers. Finally the South plaza yielded three intact points, two point fragments, and a biface fragment. There were also two objects found at the surface throughout the site, one point was found at the Southeast corner of the site, and a tool fragment was found at the Northeast corner of the site.

Point typing is particularly important because of the large proportion of tools which are points that were found at the site and because the distinct stylistic features of points provide a means comparing them to point types associated with particular cultural periods. Of the intact projectile points, all but one appear to be of a type associated with the Late Woodland period which is in agreement with the suggested occupation period of approximately 700-1300ya. The lone exception is a late-archaic point that was found in the south plaza, which is indicated by its larger size, ovate-triangular blade, and side notching (McGahey, 2000; DeMasi, 2013). Given its position in a fill level this can easily be attributed to being a product of mound construction; the point was likely dug up along with soil from elsewhere and deposited at the site as fill.

Of the Woodland points, the most common type were Collins points of a few different sub-varieties. The broader characteristics of these points are narrow triangular blades, side notching, and expanding stems (McGahey, 2000; DeMasi, 2013) their classification as particular sub-varieties are dependent pri-

Point Types

| Bag # | Site Area | Level/Zone | Type | Period |
|---------|-------------------|-------------------|--------------------|---------------|
| 20.1.4 | South Plaza | 2 | Delhi | Late-Archaic |
| 20.3.4 | South Plaza | 2 | Morris | Late-Woodland |
| 32.1.3A | South Plaza | 3 | Alba | Woodland |
| 32.1.3B | South Plaza | 3 | Collins-Serrated | Late-Woodland |
| 50.1.2 | Mound A | 4 | Catahoula | Late-Woodland |
| 114 | Mound A | 6 (wall-cleaning) | Collins-Serrated | Late-Woodland |
| 216.1.2 | Mound A | 8 | Collins-Clairborne | Late-Woodland |
| 217 | Mound A | 8 (wall-cleaning) | Marcos | Late-Woodland |
| 161 | Mound C | 7 | Uncertain | Uncertain |
| 238B | Mound C | 11 | Collins (?) | Woodland (?) |
| 241 | SE corner of site | Surface | Scallorn | Late-Woodland |

marily on the shape of the blade however it has more recently been proposed however that these different varieties are more accurately described as representing different stages of reductions (DeMasi, 2013). Other Late Woodland types that were common were wide-triangular blade varieties such as Catahoula, Marcos, Morris, and Scallorn types (McGahey, 2000; DeMasi, 2013). One notable find is a large heavy Collins variety point found in Mound C (238B), it is much too large and heavy to be an effective projectile point so it is likely this was meant to be used with a hand-thrusted spear. It is important to consider the possibility given the context in which the point was located (level 11, close to a midden layer) that it only superficially resembles a Collins point and is a considerably earlier type of point. It was also located on the same level as two rejected tool preforms so it possible that this is also a rejected point.

Interpretation:

Lithic artifacts are generally a rarity at Coles Creek period sites given the relative scarcity of raw materials (Kidder, 1992). However at Smith Creek they have so far been relatively abundant. Considered along with the presence of tool preforms and a large amount of flakes and debitage it would be fairly appropriate to conclude that tool manufacture was occurring on-site. It is not likely the preforms would have originated elsewhere and been deposited on site as mound fill, because they were found at or near midden layers, which suggests that is where they would have been originally discarded. Given the lack of desirable sources for raw materials in the area, it would be interesting to learn from where the occupants of Smith Creek were acquiring their lithic materials. This could be a potential subject for further research.

Additionally, aside from one (easily accounted for) lone exception all of the point characteristics correspond to types associated with the Late Woodland period, which is in agreement with the proposed dating of the site.

Works Referenced

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