The Case for a Paleoindian Component at the Savage Cave Site (15Lo11)

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The Savage Cave site located in Logan County, Kentucky has been the bane of archaeologists for over fifty years. Attracting the attention of Louis Leakey and C. Vance Haynes, the site was often purported as being an Early Man site and a likely candidate for excavating prehistoric artifacts of great antiquity. Subjected to numerous excavations by amateurs and professionals alike, no concrete evidence has ever been brought to light that occupation of the site predates the Early Archaic period. Previous excavators maintain that the site was inundated with water during most of the Late Pleistocene. Recent analysis of the lithic assemblages from the site presents an argument for a Paleoindian component. A case is made for a Late Pleistocene occupation at the Savage Cave site with an emphasis on diagnostic Paleoindian tool types.

The Savage Cave site (15Lo11) is one of the renowned prehistoric sites in Kentucky. Unfortunately due to the lack of professional publication and stringent documentation of excavations, the site is often mentioned in texts with some degree of ambiguity. Despite previous neglect, a closer look at the fragmental data may yet yield valuable information about prehistoric occupation at the end of the Pleistocene.

The Savage Cave site can be described as three loci. These loci consist of a large sink hole that opens up into an extensive vestibule area and cave system, the adjoining talus slope, and the area above and adjacent to the sink’s entrance where additional cultural materials have been gathered. The site is located in the south central area of Logan County approximately 1.7 km north of the Kentucky/Tennessee state line and 1.75 km east of Adairville (Carstens, 1983). This area is part of the karst topography of the Pennyroya physiographic province. This karstic environment is characterized by sink holes, solution valleys, extensive cave networks, and disappearing streams. These topographic features are the result of weathering processes eroding the underlying Mississippian aged limestone units.

The cave system was carved out of the soluble limestone by an active and abandoned underground stream course of Woolsey Creek and its tributaries (Mylroie et al., 1983). Woolsey Creek continues to the west before emptying into the south fork of the Red River (Mylroie et al., 1983). The entire linear extent of the Savage Cave system is 3,300m with three levels of vertical relief and is associated with, Angel Cave, Barnes Cave, and Woolsey Creek Cave (Carstens, 1983). The entrance to Savage Cave is quite massive spanning an area 25 m wide and 4 m high. The formation of which is attributed to an ancient roof collapse (Mylroie et al. 1983). The interior of the cave consists of a vestibule area of approximately 1,500 square meters leading to three passages (Carstens, 1983). The extent of the interior cultural deposits appears to be limited to the vestibule area however systematic investigations of the interior passages have never been conducted.

The Ste. Genevieve and Upper St Louis formations are the major geologic units in the vicinity. The Ste. Genevieve formation is found to the north of the site capping upland areas and as fragmentary chert residuum in the lowlands where the parent limestone has completely eroded away. The Upper St Louis formation underlies the Ste. Genevieve and represents the dominant
Mississippian aged limestone unit in and around the site (Shawe, 1975). The sink hole and interior of the cave are entirely encased within this formation.

The soils in the area are mapped as a Baxter cherty silt loam (BaC), Pembroke silt loam (PeB), and Pickwick silt loam (PkB) (United States Department of Agriculture, 1975). The pedogenesis of these soils is attributed to the weathering of the limestone formations traces of which may still be seen as fragmentary chert debris. The presence of this chert residuum may have been an important factor in the prehistoric exploitation of the site. Both the Ste. Genevieve and Upper St Louis limestone contain abundant chert materials that would have suited the needs of prehistoric peoples (Schenian, 1985b). Cobbles of chert from the Upper St Louis appear to be the most abundant source of lithic material in the area. The macroscopic identification of the chert types present in the assemblage indicates that prehistoric inhabitants almost exclusively selected these cobbles to produce the numerous stone tools found at the site.

The Savage Cave site (formerly known as Cook’s Cave) has been the focus of numerous excavations by professionals, amateurs, and enthusiasts for over half a century. Early interest in the site primarily concentrated on the discovery of evidence for ‘Early Man’ (Schenian, 1985a). The previous owner, Genevieve Savage, did much to promote the site and attract attention to the vast amount of prehistoric material she was collecting from it. As a result of her endeavors, a good deal of undocumented excavations was conducted of which there is very little record. The only evidence for these excavations is personal remembrances and the great amount of disturbances noted by future researchers. Currently only three major excavations have been documented, out of these only two publications have ever been produced (Schenian, 1985b).

The Carnegie Museum excavations during the 1966 and 67 field seasons represent the largest of the three excavations. The principal investigator, Don Dragoo, ended the work in frustration claiming that there no longer existed intact deposits containing in situ cultural material (Dragoo, 1984). These statements are contradictory to numerous profile drawings, field notes, and general observations made during the two field seasons and may reflect personnel biases. The goal of the entire project seemed to hinge upon the location of evidence for a Pleistocene occupation and when this ‘smoking gun’ was not immediately discovered a pessimistic attitude toward the site seems to have prevailed. In a number of instances the emphasis on discovery of ‘Early Man’ sites seems to have taken precedence over the dutiful recording of other significant finds.

Two seasons of fieldwork uncovered a large Early Archaic component at the site with associated stratigraphic relationships. This was never reported in any great detail. The Carnegie Museum’s excavations and interpretation of the Well’s Creek site seem to reflect this bias (Gramly, 2000a). The fixation of previous researchers with finding evidence of Late Pleistocene occupation seems to dominate the literature of the site and to a degree is reflected in this current study.

There still exists a certain mystique surrounding Paleoindian sites in the Americas. This may be due to the rare occurrence of these sites in the archaeological record or the fact that the fluted biface has been deemed the first American invention. Whatever the case may be the evidence is beginning to reveal a complex and highly adaptive lifestyle that existed at the end of the last glacial maxim. The south central portion of Kentucky would have looked very different than the one that currently exists. Much of the region was dominated by closed spruce jack pine
forest from 20,000 to 17,000 B.P. that gradually gave way to open boreal forest and deciduous woodland at approximately 11,500 B.P. (Freeman et al., 1996).

Early inhabitants of the area would have had an intimate knowledge of the landscape and the available resources that certain geographic regions provided. The Paleoindian tool kit reflects this adaptation to a wide range of environments. Possibly the best recognized element of the Paleoindian tool kit is the fluted biface. The characteristic concave base, auricle form, oblique outré passé flaking, with lateral and basal grinding, and channel flake removal or basal thinning is the typological hallmark of late Pleistocene settlers across the Americas. This technological tradition represents a continuum spanning 1,500 years of the prehistoric record (Hranicky and McCary, 1995). A number of regional variants have been identified but the basic form of the fluted biface remains consistent over a wide geographic region spanning two continents. This homogeneity does not only apply to the fluted biface but extends to other aspects of the Paleoindian tool kit.

The excavation of a number of Paleoindian sites in both North and South America have led archaeologists to a more comprehensive understanding and recognition of the types of tools that these people manufactured and utilized. Paleoindian assemblages at the Debert, Shoop, Vail, Gault, Sloan, Quad, 6Laf21, and La Mula West all reflect similarities in tool types and tool manufacture despite a large temporal and spatial distribution. This intra-site similarity can be viewed on a regional scale as well. Paleoindian assemblages from the Parrish, Adams, Boyd, Roeder, Ezell, Roach, Big Bone Lick, Wells Creek, Coates-Hindes, Cason-Conn-Short, and Sinclair sites as well as many more in Kentucky and Tennessee reflect this typological cohesiveness.

As mentioned above the fluted biface is the tool type that is most recognized as diagnostic of Paleoindian occupation. Beside the fluted biface, the spurred endscraper is also commonly found within Paleoindian artifact assemblages. The spurred endscraper, or trianguloid scraper, is a unifacial tool exhibiting steep retouch along the distal and sometimes lateral margins of the piece. Endscrapers are typically attributed to hide processing activities. The distal margin is generally heavily resharpened often creating projections along either side. These spurs are sometimes interpreted as being gravers or are often an unintentional byproduct of resharpening the implement within the hafting element (Andrefsky, 2005).

The graver is not exclusively associated with Paleoindian assemblages as they have been found in Archaic deposits, but the tool type appears to have been heavily utilized by Paleoindian people. A third Paleoindian tool type is the ‘limace’ or slug like uniface. The term ‘limace’ was first used to describe thick humpbacked unifacial tools of the Upper Paleolithic in Europe. This terminology seems to have carried over to the New World as it is often used to describe a similar tool form in Paleoindian assemblages.

A variety of other tool types have been related to Paleoindians including, polyhedral and biface cores, crescent blades, side scrapers, piècè de esquille, backed knives, and the presence of outré passé flaking. A more in depth discussion of these may be found in Gramly’s (2000b) *Paleo-American Artifacts of North America*. Presently researchers are beginning to recognize these tool types and associate them with Paleoindian assemblages. It is beyond the scope of this study to claim that these tool forms are diagnostic of the Paleoindian period but the correlation between them and fluted bifaces is strong.
The first evidence for a Paleoindian component at the Savage Cave site is in the personal collection of Genevieve Savage. A total of 13 unprovenienced fluted bifaces were reported to have been collected from inside the cave by Mrs. Savage (Schenian, 1985a). Ten of these projectile points are accounted for in the Savage Cave collection housed at the Murray State Archaeology Lab. These specimens represent a number of Paleoindian projectile point types ranging from Clovis, Cumberland, Quad, Dalton, and Beaver Lake. All of these examples appear to have been heavily resharpened along the lateral margins or broken above the hafting element and are interpreted as being at the end of their use life. These specimens are unprovenienced and their association with Savage Cave should be viewed with a certain degree of uncertainty. However it is quite probable that these artifacts were collected within the cave as evidence from other sources seems to support this contention (Miller, 1967; Lang, 1984).

The following analysis is based on an ongoing attempt to integrate the Savage Cave collection into Murray State’s Archaeology Laboratory catalogue system. All of the artifacts listed below were collected within the vestibule of the cave during the Carnegie Museum excavations. Proveniences of the artifacts range from surface collected materials to 6 inch arbitrary levels within 10 by 10 foot units. The primary focus of the current study was to present an argument for a Paleoindian component within the cave and should not be viewed as an in depth analysis of all lithic materials. It is the belief of the current researcher that a more complete lithic analysis of the Savage Cave debitage will reveal additional evidence of a Late Pleistocene occupation as well as to quantify other temporal components in the assemblage.

Two Paleoindian bifaces and one fragment were located within excavation units inside the vestibule area. One of these is a heavily resharpened Dalton projectile point exhibiting multiple basal thinning flakes, a concave base, and shallow shoulders from resharpening. Additionally a fragmentary piece of a second Dalton was located. The second biface is a late stage perform/knife with concave base and prepared platform for channel flake removal. Current reanalysis of the assemblage has added 6 more fluted bifaces to these totals. Five of these preforms were discarded early in the production for unknown reasons. One specimen appears to have been broken during preliminary fluting as the impact force created a hinge fracture breaking the preform in two.

A related artifact type is the presence of outré passé flaking either observed as flake scars on the artifacts surface or as biface thinning flakes. A total of 4 provenienced outré passé flakes were noted in the Carnegie assemblage. All five are biface thinning flakes that had terminated at the opposing edge of the biface lifting off a portion of the lateral facet. This unique flaking technique is indicative of Paleoindian biface manufacture. This process of flake removal is an effective method of thinning a biface however it is also risky often resulting in the failure of the piece.

Unlike the tantalizingly small evidence provided by the biface category, the Savage Cave assemblage has a comparatively larger amount of unifacial tools. The majority of these unifaces fall into two artifact types; spurred endscrapers and limaces. The presence of these unifacial tools is indicative of a curated blade technology that was a large part of the Paleoindian tool kit.

A total of 14 complete and 9 fragmentary spurred endscrapers have been identified to date within the Carnegie provenienced materials. A few of these items show signs of post depositional thermal alteration making in depth analysis difficult but the majority of the
specimens match descriptions of similar implements found among other Paleoindian assemblages (Walthall, 1980; MacDonald, 1985; Moeller, 1980; Morse, 1997; Shuttle, 1983; Funk, 2004; Faught, 2006; Witthoft, 1952). Polish sheen is noticeable along the dorsal flake scar ridges and ventral surfaces of many of the specimens. Usewear analysis studies may shed light on the types of materials that these implements were used upon, but typically they are attributed to hide processing tasks.

The second unifacial tool type found in the Savage Cave provenienced materials was the limace. A total of 21 limaces and 5 fragments were identified in the Carnegie Museum assemblage. Out of any of the tool types identified during the current study the limace is possibly the best indicator of a Paleoindian component within the vestibule locus of Savage Cave. Whereas other tool types such as bifaces may exhibit a great deal of curation over continuous or punctuated periods of prehistory, the limace is consistently localized to Paleoindian assemblages (Converse, 1998; Lewis, 1996; Fogelman, 2006).

The limace is uniquely a Paleoindian tool type that has been subjected to a plethora of terminology. The French term is used here to describe these humpbacked lenticular unifacial blades that exhibit steep retouching along all margins. The analysis of Grimes and Grimes (1985) on limaces from the Bull Brook site details the morphometric and functionality of these implements. Their analysis suggests that limaces were used as chisels and possibly hafted. The fine retouching along all margins and edge damage may indicate various uses. The general shape of these items more closely resembles a combination end/side scraper.

The next Paleoindian artifact type to be present in the Savage Cave collection is the graver. A total of 15 gravers to date have been identified in the provenienced material coming from the Carnegie Museum excavations within the cave’s vestibule. Gravers mainly occur as small projections on secondary and biface thinning flakes. These projections show signs of minuet unifacial pressure flaking to extenuate existing features on the dorsal side of the flake. On a few specimens these ‘spurs’ are quite small in size often less than 1mm in length. Two specimens are bifacially worked and may be more accurately described as a stone awl. These implements are rare but are also associated with Paleoindian assemblages (Gramly, 2000b).

The occurrence of backed knives in the Savage Cave materials is also an indication of a Paleoindian presence. There are a total of 3 backed knives in the collection. These can be described as a semicircular unifacial or bifacially worked tool with a natural or modified flat surface opposite the cutting edge. Usually the backed surface is composed of cortex but may be any surface that is sufficiently dull enough to facilitate being held in the bare hand. These tools have been interpreted as knives. This tool type was not observed in great numbers. Other tools typical of Paleoindian assemblages were noted in the collection but did not regularly appear. A closer analysis of the collection might identify more of these forms.

As Savage Cave is partially interpreted as a location of lithic procurement and primary reduction site, the presence of numerous cores and tested cobbles were found in practically every provenience. An unknown percentage of these can be described as biface cores and exhausted polyhedral blade cores. Two polyhedral blade cores were set aside as archetypal examples of these artifact types. Blade cores were produced at other times throughout prehistory but have been representative of a Paleoindian blade technology. The top surfaces of these two cores have been prepared by a large flake removal leaving a flat platform. Both examples exhibit edge
crushing along the top indicating platform preparation or later use of the exhausted cores as plainers (Gramly, 2000b). These are very similar in form to ones found at the Adams site in Christian County, KY.

Also present in the Savage Cave assemblage are various other tool types commonly identified as Paleoindian. A single crescent blade was found that can be best described as a sickle shaped uniface approximately 7 cm in length. Also present is a complete side scraper, side scraper fragments, a graver/side scraper combination tool, and an extremely well made ovate biface exhibiting heavy basal grinding. When observed as singular specimens these tool forms present a weak argument for a Paleoindian occupation at Savage Cave, however the collective identification of multiple tool types supports just such an interpretation.

The above data presents a strong argument for a Paleoindian component within the Savage Cave site as far as presence or absence is concerned. Admittedly this hypothesis is not at variance with those of previous investigators. Excavators with the Carnegie Museum agree that the site was probably utilized during the Paleoindian period but that all stratigraphic evidence for this occupation had long since washed away sometime during the Late Pleistocene (Miller, 1967; Metzgar, 1985; Dragoo, 1984; Lang, 1984). In fact, due to the numerous cultural and natural disturbances within the cave, it may be extremely difficult to locate in situ deposits of this antiquity. The lack of documentation and methodology employed by previous investigators only compounds the difficulty in site reconstruction. Profile drawings on file at Murray State University’s Archaeology Lab may aid in correlating the stratigraphic association of the Paleoindian artifacts. This type of analysis was outside the scope of the current investigation however a carefully constructed site excavation may bring to light useful data.

The Paleoindian component at the Savage Cave site is relatively small in comparison with that of other prehistoric occupations. The oldest stratigraphically intact layer identified was a horizon containing a number of Kirk corner notched projectile points. These deposits have never been dated using analytical methods but even a tertiary analysis of the artifact data shows a strong Archaic occupation. Additional materials have been assigned to the Early, Middle, and Late Woodland periods making Savage Cave possibly one of the most chronologically continuous sites in the state. The presence of Paleoindian materials at Savage Cave also contributes to Kentucky’s Paleoindian record and fits within a growing body of regional evidence.

The Paleoindian record in Kentucky suggests a highly adaptive mobile hunter gatherer lifestyle. The identification of more sites in the region will only add to our understanding of this dynamic period in Kentucky’s prehistory. Though our view of the first occupants of the area may be limited by the scarcity of sites, there are still general trends that can be deduced from the existing data. The Paleoindian sites in the state may be categorized as occurring in three basic settlement patterns.

The interior plateau region of middle Mississippi, Kentucky, and Tennessee has produced the highest concentration of Paleoindian projectile points in North America (Walthall, 1980). This potentially reflects the tendency of Paleoindian people to utilize the resources found along major drainages. The archaeological record in Kentucky supports this pattern as sites are often located along floodplains near the confluences of primary drainages. The Parrish site reflects this type of site settlement pattern. Paleoindian sites in the state have also been located on the
margins of saline or miner springs and ponded water (Freeman, 1996). These locations would have attracted abundant game while supplying other unique resources to prehistoric inhabitants. A good example of this type of settlement is the Big Bone Lick site located in Boone County (Lewis, 1996). Finally, a number of Paleoindian sites seem to occur near areas of high quality lithic raw material (Morse, 1996). The correlation between Paleoindian hunter gather groups and areas of high quality chert has been well documented not only in the state but across both continents. This relationship may demonstrate the reliance that Paleoindians had on areas where good quality lithic material could be procured.

Paleoindian settlement patterns for Kentucky may reflect a certain degree of surveyor bias but most likely they represent a continued reliance on the unique natural and biological resources that potentially were exploited at these regions. The Paleoindian component at the Savage Cave site may be directly related to this spatial and geographic site settlement patterning that exists in Kentucky. As previously mentioned the high quality Upper St Louis chert is found in abundance within the cave and the existing area. The continuous weathering of the underlying limestone releases the more resistant nodules from the parent material. These nodules may be found in the loose soil matrix or uncovered by seasonal tributaries. The sheer volume of prepared cores in the Savage Cave collection testifies to the abundance and availability of high quality chert material. This can be seen as one of the main motivating factors that attracted people throughout prehistory to the site.

The Paleoindian component of the Savage Cave site can be categorized further into more of a micro-regional scale. The occurrence of Paleoindian sites near sinkholes in the karstic areas of south central Kentucky has been well documented (Gatus and Maynard, 1978; Gatus and Marquardt, 1984). The Adams site in Christian County is part of a number of sites in the region that exhibit this settlement trend and is incorporated in the Little River site complex. The complex consists of 4 possible Paleoindian workshop sites located approximately 40 kilometers to the west of the Savage Cave site (Freeman, 1996). These include Adams (15Ch90), Boyd/Ledford (15Ch236), Roeder (15Ch482), and Ezell (15Ch483).

Artifacts obtained from these assemblages closely resemble those tool forms highlighted in the current study from the Savage Cave site. More importantly these sites represent a Paleoindian site exploitation model for south central Kentucky and adjacent areas in Tennessee. The Savage Cave site is also very close to the South Fork of the Red River drainage. This may be directly compared to the association of other sites with the Little River. This evidence highlights a need for additional surveying of sink holes along the Red River watershed as a similar model may exist in the area.

In conclusion the evidence for a Paleoindian occupation of the Savage Cave site may be extended beyond a handful of unprovenienced fluted bifaces. The assemblage coming from the vestibule area excavated by the Carnegie Museum in the summers of 1966 and 67 contain typologically distinct tool forms that are universally recognized as Paleoindian artifact types across both North and South America. Additional artifacts were noted in unprovenienced materials coming from test units within the other two loci of the Savage Cave site. The perceived degree of disturbance noted by earlier researchers seems to have dissuaded any further attempts to identify a stratigraphic association for this time period, with the noted exception of Cambron’s investigations (Cambron, 1974). Despite these stumbling blocks a Paleoindian
presence at the Savage Cave site can be deduced by the presence of tool types such as limaces, gravers, spurred end scrapers, backed knives, polyhedral cores, and fluted performs.

Future researchers can apply the Savage Cave example to other multi-component sites. All archaeological sites have undergone various post depositional processes that mix cultural deposits and confuse stratigraphic relationships. Compounding these issues is the heavily looted nature of a number of archaeological sites. The fluted biface is probably one of the most recognizable and sought after prehistoric artifact type and as a result is usually one of the first to be collected by amateurs, enthusiasts, and professionals alike. The neglectful documentation of these artifacts destroys a good deal of provenience information about the items and concurrently limits our understanding of the past. This is also discouraging since fluted bifaces are the most diagnostic Paleoindian tool forms in the absence of well dated contexts.

As a result of these disturbances researchers may often have to look for other indications of a Paleoindian presence at archaeological sites. The careful analysis of not only tool forms but also methods of manufacture and the resulting debitage may provide useful documentation of additional sites. This is especially true when surveying areas that have a high potential for Paleoindian occupation. The homogeneity of the Paleoindian tool kit is becoming more recognized as new discoveries are unearthed. Previous researchers have used the term ‘genetic technology’ to describe the cohesion apparent in the manufacture of fluted bifaces spanning two continents and 1,500 years of prehistory (Hranicky and McCary, 1995). Even a tertiary comparison of other Paleoindian tool types within other assemblages shows that this terminology can be applied to other components of the Paleoindian tool kit. The current study looked at the presence of limaces, spurred end scrapers, gravers, and various other tool forms to present a case for a Paleoindian component at the Savage Cave site.
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