

The Study of Prehistoric Lithic Artifacts in Mississippi

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What is a lithic artifact? A lithic artifact represents any stone object modified by humans. Archaeologists studying prehistoric and historic Native Americans commonly identify several general types of lithic artifacts including formal tools, ornaments, cores, flake debris, and fire cracked rock (see glossary). In Mississippi there are three basic lithic technologies (**flaked, ground, and battered technologies**). Flaked stone technology involves the fracturing of fine-grained rock like chert or quartzite, so that fragments or flakes can be produced. These flakes are sharp and can be used in a number of tasks like cutting meat or scraping hide. In addition to producing flakes that can be immediately used and discarded (**expedient tools**), prehistoric people would also shape cobbles or large flakes to produce tools that are typically used longer and more intensively (**formal tools**). An example of a formal tool is what most people refer to as an “arrowhead”. Archaeologists refer to these tools as points, because they were used to tip an arrow, spear, or dart, but the term arrowhead is not used since not all points were used with a bow and arrow. Some other kinds of flaked tools found in Mississippi include *scrapers, gravers, drills, knives, hoes, and adzes*. These tools were used in a wide variety of tasks like hunting, preparing hides, butchering prey, making ornaments, farming, and woodworking just to name a few. Ground stone is commonly made from coarse-grained rock like sandstone and formed by grinding associated with the preparation of plant foods like corn. Other types of groundstone are not formed by use associated with food processing, but by intentional grinding. Some examples include *ground axes, celts, stone beads, gorgets, discoidals, and plummets*. Most of these tools and ornaments were made on rock that does not flake well, so the prehistoric stoneworkers would use abrasive materials like sand or other coarse stone to shape these materials through grinding. Battered stone was made on durable, coarse stone and used as *hammerstones* to flake fine-grained rocks like chert. Another use of battered stone was to crack hard-shelled nuts like hickory nuts. These tools often have depressions formed on their surface and are called *pitted anvils* or nutting stones.

On most archaeological sites in Mississippi lithic artifacts form the bulk of cultural materials recovered. This is largely due to the fact that organic materials like wood and bone are not commonly preserved on archaeological sites. In the region, the only other artifact class resistant to decomposition is pottery, however; pottery was not adopted until around 2,500 years ago in the region. Since current archaeological evidence indicates that people have been present in the area for at least 12,000 years, a large portion of the prehistoric record consists entirely of lithic artifacts. As a result much of what archaeologist discover about the distant past is based on the study of lithic artifacts.

How do archaeologists learn about the prehistory of Mississippi by studying lithics? Well like modern-day detectives, archaeologists use lithic artifacts to provide clues concerning the environment in which they were produced and used. Common questions archaeologists ask when studying lithic artifacts include: 1) How old are these stone tools? 2) Where did the rock come from? 3) How were these artifacts produced and in what activities were they used? 4) What

clues do lithic artifacts provide concerning the lifeways of the people who produced and used them? All of these questions are important because, if solved, they provide information that helps archaeologists reconstruct how prehistoric peoples lived. In order to answer some of the questions listed above, archaeologists must recreate certain activities, like the production of a stone tool, so that it be can understand what the artifacts they recover represent. This is similar to forensics specialists who use experimental simulations to interpret many pieces of evidence recovered from a crime scene. Detectives may not apprehend the culprit at the crime scene, but they do have clues left behind that can be used to identify the guilty party. Archaeologists are not searching for criminals, but they also use clues, like the waste flakes or debris created when Native Americans were making or repairing their stone tools, to identify what prehistoric groups were doing at a site.

Let's talk about the questions listed above. First, how can stone tools be used to date a site? Well certain tools like points are known to change stylistically over time, as does many parts of our culture today, so they are considered diagnostic of a time period. Archaeologists have used the law of superposition to order stone tool styles over time. The law of superposition says that the older artifacts are deposited first, therefore, they should be found below more recent artifacts. When archaeologists excavate stratified sites that contain thousands of years of materials they apply the law of superposition to identify which tool style occurred first. This only provides a relative date that says which tool style is older than the other, but through use of radiocarbon dating archaeologist have been able to identify an actual date range during which certain tool styles occurred. Chronological information obtained through diagnostic artifacts is very important because archaeologists study how cultures changed over time.

How do archaeologists in Mississippi know where the rock used to make stone tools came from, and what information does this provide? Fortunately, most rocks used to make stone tools are distinctive and can be related to a general area. Many archaeologists have samples of rocks from all over Mississippi and surrounding states, so that they can be compared with artifacts to determine their place of origin. What does this tell an archaeologist? Well it can help archaeologists understand how large a group's territory might have been, since many prehistoric groups moved around quite a lot. For example, if a site only contains locally available stone it suggests that the inhabitants of the site were primarily based in that area, whereas if a site contained a good bit of rock from a source 100 miles to the west and another source 50 miles to east, it is likely that the group that left these artifacts occupied this 150 mile stretch of territory over the course of a year. In addition, the presence of rock from very distant sources might indicate that a group was involved in exchange with other groups outside their immediate area.

How do archaeologists identify what activities produced lithic artifacts or the tasks in which they were used? This is a difficult and at times complicated task, but models explaining how stone artifacts were produced and used have been and are continuing to be developed primarily through written records describing modern hunter-gatherers who still use/used stone tools and scientific experimentation. The modern-day production of stone artifacts has helped archaeologists understand what kind of debris or waste is left behind. In addition, modern replicas can be used to do certain task like butchering a deer, so that the use-wear produced on the experimental tool can be compared with artifacts. These kinds of studies allow archaeologist to identify how certain prehistoric stone tools were used. In addition, the design of stone tools

can provide clues about the people who made and used them. A good modern example can be made between a plastic set of disposable utensils, a fine set of silverware utensils, and a Swiss Army knife containing a fork, knife, spoon, etc. These sets of utensils can all be used to eat, but the situations in which they are used are different. Like people today, prehistoric groups made tools that fit their lifestyle, so groups practicing very different lifeways should possess tools of differing design.

The final question that was listed above is what clues do lithic artifacts provide concerning the lifeways of the people who produced and used them? In fact, many of the clues archaeologists use to answer this question have already been presented. We already know that a prehistoric group's territory can be partially understood through looking at where the lithic materials originated, activities that stone tools were associated with can be identified through comparison with modern-day replicas, which allow inferences concerning site function to be made, and the shape of the tool can help in determining how old it is.

Archaeologists around the world use artifacts, including lithics, to reconstruct a variety of cultural jigsaw puzzles that represent views of the past that are not recorded in any history book. In Mississippi and other regions, trying to piece together the past is a difficult task because so many sites have been destroyed by modern development and farming. Another factor in the destruction of archaeological sites is the undocumented collecting of artifacts, like "arrowheads". If certain data are not recorded, such as artifact provenience, much of the information embedded in these artifacts is destroyed. So, if you are interested in archaeology and lithic technology, get in touch with an archaeologist in your area for guidance to insure that you are not damaging the prehistory of Mississippi.

A glossary of lithic artifacts found in Mississippi is provided, including illustrations. The glossary is very general including only a sample of the lithic artifact types recovered from the state. For those of you interested in lithic technology, here are a few references on the subject.

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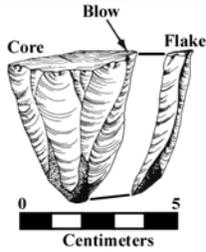
1987 *Stone Age Spear and Arrow Points of the Midcontinental and Eastern
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Glossary

Flaked Lithic Artifacts found in Mississippi



Core and Flake: A core is the piece of material from which flakes are removed. In the illustration it shows a flake removed from the core and the flake scar left behind. All of the tool types shown below also have flake scars, but these are related to the shaping of the implement. A core serves the purpose of producing flakes that can be used as tools without further modification or flakes that can be further shaped into formal tools like those defined below.



Point: These are tools inferred to have tipped projectiles like spears, darts, and arrows. Many points served a variety of functions other than use as a projectile including use as knives, scrapers, and perforators. As shown in the illustration, the size and shape of points is quite variable. This is partly related to function and style. The smaller two points were used to tip arrows, while the other three were likely used thrusting spears and/or darts used with spear throwers.



Adze: These tools vary in shape and size, but generally have a steep bit and are often oval in shape. Adzes were used in woodworking activities, much like modern adzes.



Drill/Perforator: This tool type possesses a long tapered bit that is usually rounded or diamond-shaped in cross-section. They were often used in a rotary motion to drill holes into resistant material like wood, bone, antler, or stone rounding the tool margins. In addition, they were sometimes used as perforators. This would have involved piercing materials such as hide in task like the production of clothing.



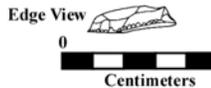
Hoe: These tools are associated with the cultivation of domesticated plants like corn. Hoes do not occur until prehistoric populations began to rely heavily on maize and other domesticated crops. These tools are almost always made of a sturdy chert that outcrops in southern Illinois called Mill Creek chert. A heavy polish or sheen forms on the working edge of these tools. Archaeologists can identify flakes made from resharpening hoes because traces of this polish are still present on the back (dorsal) surface.



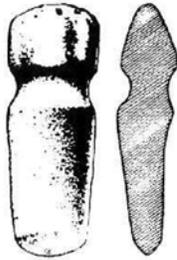
Gravers: These are sharp, beak-like protrusions made on flakes or other tools. Gravers were used to cut or engrave materials like bone or wood.



Scraper: These tools are characterized by a steep area of unifacial (flaked on one side) flaking. Scrapers are commonly associated with scraping materials like hide, bone, or wood. However, in some cases these tools were also used in cutting.



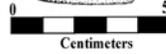
Ground and Battered Lithic Artifacts found in Mississippi



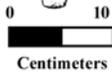
Axe: These are ground and polished tools used to chop trees and in other woodworking tasks. They can be grooved like the illustration or ungrooved.



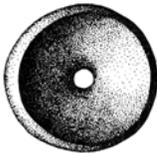
Celt: Ungrooved or slightly grooved axe-like stone tool that has been shaped by grinding and polishing. The bit is bifacially beveled. They are often made from non-local coarse-grained raw material.



Gorget: These items are ground and polished, and were probably worn around the neck or on the chest. Other possible uses include atlatl (spear thrower) weight or arrow wrist guards.



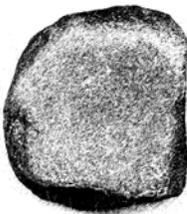
Plummet: Ground and polished implement potentially used as net weights, ornaments, or weight for bolas. These tools are primarily made of heavy metallic rocks like hematite.



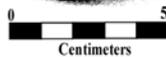
Discoidal: These are ground and polished round stones, sometimes with a drilled center, that were probably used in a game of skill called chunky.



Pitted Anvil: These implements have one or more pecked out circular pits. These pits are usually formed by cracking hard-shelled nuts and/or other rocks to produce flakes for use (bipolar flaking). Pitted anvils are usually made on coarse materials like sandstone.



Grinding Stone: This tool type is primarily formed through the grinding of plant materials creating one or more grinding facets. Coarse materials like sandstone are most commonly used for these implements.



Hammerstone: These tools were used to strike flakes off more brittle pieces of rock. Hammerstones are heavily crushed along used edges, and are commonly made of a sturdy material like quartzite.

