

THE ARCHEOLOGICAL HERITAGE OF KANSAS

A Synopsis of the Kansas Preservation Plan

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Preface

This document is a synopsis of the archeology section of the Kansas Preservation Plan, which was financed in part with Federal funds from the National Park Service, a division of the United States Department of the Interior, and administered by the Kansas State Historical Society. The contents and opinions, however, do not necessarily reflect the view or policies of the United States Department of the Interior or the Kansas State Historical Society.

The Kansas Preservation Plan is a technical document that was developed for the Historic Preservation Department of the Kansas State Historical Society that is designed to provide the background for making informed decisions in preserving the state's heritage. The size and technical nature of the plan make it inaccessible to many who have interests or responsibilities in Kansas archeology. Thus, the following synopsis of the archeology sections of the Kansas Preservation Plan is designed as a non-technical, abbreviated introduction to Kansas archeology.

William B. Lees and John D. Reynolds wrote the original version of this document in 1989. These two men were employed by the Kansas State Historical Society, respectively, as Historic Archeologist and Assistant State Archeologist. Bill Lees moved on to work in Oklahoma and Kentucky. John Reynolds eventually became the Kansas State Archeologist but succumbed to cancer before this volume was produced. This book is dedicated to his memory.

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Archeology

In 1541 the Coronado expedition journeyed through what is today Kansas and left the first written history of our state. This first written record of Kansas began the Historic period. The thousands of years before this account—the prehistoric period—offers no written history of what is today Kansas. Lack of written records does not mean that Kansas was a bare, uninhabited land. Before Coronado's arrival, people had lived here for thousands of years. What we know about them today are the remains that endured. All that we will ever know of prehistory, we learn through archeology. Archeology, too, can help us understand the several hundred years since 1541 by enriching a documentary record that is far less than perfect.

Archeology is history from the earth. An archeologist seeks to understand what happened in the past by observing the physical remains of human activity. These remains include artifacts such as arrowheads, broken pottery, animal bone, broken bottles, and nails. They also include what archeologists call features—evidence in the soil, other than artifacts, that indicate human activity. These may be a discolored spot in the soil where a post was once anchored, the baked earth and ash from a long-cold fire, a filled pit that was once used to store corn, a limestone foundation, or a filled privy pit. Artifacts and features are found in sites. These are simply places where people lived or worked in the past. A site may represent a village or campsite, a prehistoric quarry where stone was gathered to make tools, a cemetery, a farmstead, a fort, or a town. Prehistoric sites and many historic sites have been abandoned, but many historic sites are still used as residences and workplaces.

Discovering a site is the first step in archeology. Discovery happens with a process called site survey. This usually involves walking across the ground and inspecting the surface for artifacts or features. Where the surface is hidden by thick vegetation, as is typical in much of eastern Kansas, this process is difficult. Here, examination of eroded areas, animal burrows, and the cut banks of streams may reveal the presence of sites. Sometimes, small test holes are excavated. These provide some indication if remains lie buried beneath the surface. In some areas, notably in stream valleys, sites dating before a certain period may be obscured because they are buried beneath soil deposited by the action of wind or water. Here, site discovery is

difficult; discovery in stream cut banks or in areas disturbed during construction are usually the only way these sites are found.

Once a site is located, the archeologist spends a considerable amount of time documenting its size, location, depth, contents, age, cultural affiliation, and degree of preservation, which results in a site report. This is a permanent record of the site. Site reports from across the state are filed in the state's master site files at the Kansas State Historical Society where they are used for research and planning.

The investigation of an archeological site usually involves excavation—removing dirt from a portion of a site so that artifacts and features can be observed and recorded. Because the archeologist's goal is to observe and record these remains, excavation is undertaken in a very systematic fashion. The site is first divided into blocks of equal size, usually 1 or 2 meters on a side. These blocks, or excavation units, are given a unique number and are individually excavated. Excavation within a unit is further broken down by levels; a 10-cm-thick level is common. Artifacts found within a level and within a unit are put into a bag that is labeled with the unit and level number. Thus, the location and depth of all artifacts are recorded. The archeologist will always know where they were found. Features within a unit are described, measured, and photographed. Features are usually impossible to remove so they must be fully documented during the excavation. In a sense, archeological excavation is an elaborate record keeping system.

During excavation, various types of samples are collected. Samples of soil are collected and processed to recover fragile bones and small, charred seeds. Samples of charcoal are carefully collected so that their age can be determined using radiocarbon analysis. Specialists may be called to the site to examine the geological history or site environs, and remote sensing techniques, such as ground penetrating radar, soil resistivity, differential magnetometry, and infrared photography, may be used to locate buried features and artifacts.

Recovery of artifacts, feature information, and special samples from a site is the part of archeology that is most familiar to people. However, it is only the start of a very long process. After excavation, the recovered materials and site records must be processed. Processing involves the washing, sorting, and cataloguing of the recovered specimens; the preparation and

filing of site records; and the developing and printing of site photographs. This must be completed before site analysis can begin. Analysis is a critical part of archeology. The records that were written and the materials that were recovered during excavation are examined to develop an understanding of what happened at a site. Analysis involves detailed study of the artifacts and features, but it also relies on studying the relationships between artifacts and features. This is critical to learning about a site, and studying these relationships could not happen if the site was not carefully excavated and the location of artifacts and features recorded.

An archeological project is not complete until a final site report is prepared. The archeological site report is usually both descriptive and interpretive. It describes what was found and how it was found. It should also interpret what the finds mean in terms of the history of culture. Preparation of a site report is a long, complex process that may take years to complete. It involves writing, preparation of drawings and photographs for illustrations, and the design and editing of the final manuscript.

Individual sites, and the site reports that describe them, are the basis for developing culture histories of regions or for conducting research on a specific research topic. At the regional level, similarities or differences between sites, either through time or across space, become as important as understanding the distribution of artifacts within the individual site. Archeology and archeological inquiry is comparative, and the knowledge that we gain from the study of individual sites is cumulative. It relies on a growing body of information that allows archeologists to refine their interpretations and conclusions.

Historic Preservation Planning

An archeological site is a fragile resource. The artifacts, the features, and the three-dimensional relationships between artifacts and features may have rested undisturbed for hundreds or thousands of years, but they can be destroyed forever in a matter of minutes. As fields are plowed, as valleys are dammed and streams channeled, as towns grow and as highways are built, fragile remains of the Kansas past are lost forever. With each lost site, the jigsaw puzzle of our past becomes more and more difficult to complete.

Starting at the turn of the century, public policy recognized the importance of our archeological sites. The Antiquities Act of 1906, the Historic Sites Act of 1935, the Reservoir Salvage Act of 1960, the National Historic Preservation Act of 1966, The Department of Transportation Act of 1966, the Federal Aid Highway Act of 1968, the National Environmental Policy Act of 1969, the Archeological and Historic Preservation Act of 1974, the Archeological Resources Protection Act of 1979, the Abandoned Shipwreck Act of 1988, and the Native American Graves Protection and Repatriation Act (NAGPRA) of 1990 have all had a part in establishing archeological preservation as national policy. In Kansas, the Kansas Antiquities Commission Act of 1967, the Kansas Historic Preservation Act of 1977, and the Kansas Unmarked Burial Sites Preservation Act of 1989 have added to these national laws to make archeological preservation the policy of the state. This preservation policy is carried to the local level by a number of local preservation ordinances.

Policy has developed over time. Today, planning is the cornerstone of successful archeological preservation. Recognizing this, the National Park Service seeks to establish the historic preservation planning process in the states through local and federally assisted historic preservation offices. In Kansas, this process is codified in the Kansas Preservation Plan. This document covers the state's entire physical heritage including historical, architectural, and archeological resources. It is intended to present background information, preservation approaches, and recommendations that can serve as the basis for making informed decisions during the planning process. More specifically, the Kansas Preservation Plan is designed to foster the preservation of historic properties by providing guidance in three key areas:

- 1) Identifying historic properties. The terms historic property and site as used in archeology are interchangeable. Identifying sites is the cornerstone of archeological research, and it is equally important in historic preservation.
- 2) Evaluating the significance of identified properties. Once properties are identified, someone must determine how important these are. Are they important enough to warrant preservation?

Importance in historic preservation is based on established criteria used to judge whether a site is significant enough to list on the National Register of Historic Places.

3) Preserving significant properties. Historic preservation's goal is to identify significant sites and to see that they are preserved and protected. Ideally, preservation takes the form of in-place preservation, but for archeology it also may result in the preservation of a site on paper. When a site cannot be physically preserved, information about it can.

Archeological sites typically have little to show on the surface. Why is it important to preserve them? Would it not be better to excavate them so that they will no longer be in the way of progress? Archeological research is very expensive to undertake, and viable alternatives often exist that will allow the divergent values of development and preservation to coexist. Preservation planning allows us to explore these alternatives. In-place preservation of sites also ensures that future archeologists, working on problems not yet conceived and with methods and techniques not yet developed, will have untapped information with which to work.

Physical Environment of Kansas

Many visitors traveling through Kansas on I-70 are unimpressed with the state's landscape and see it as unvarying. In reality, Kansas is diverse. This has had an important bearing on the human settlement of the state in both prehistory and history.

Soil, topography, and mineral resources vary greatly. There are 20 major physiographic provinces (physical land features determined mainly by the underlying geology) in the United States. Three of these include parts of Kansas. The western two-thirds of the state lie within the Great Plains province; the eastern third is within the Central Lowlands province. The extreme southeastern corner of the state falls within the Ozark Plateau province.

Great Plains

Based on landform and subsurface geology, the Great Plains province is divided into five sub-provinces: High Plains, Arkansas River Lowland, Red Hills, Wellington-McPherson Lowlands, and Smoky Hills. The largest of these is the High Plains—the true Plains region of Kansas. It is characterized by relatively flat topography covered with short grasses. Although much of the High Plains is drained by rivers, a significant percentage is covered by undrained basins of various sizes.

Cutting through the High Plains and meandering through south-central Kansas are the Arkansas River Lowlands. The Arkansas River is the only waterway that cuts entirely across the High Plains province. The area's surface is formed by sands and gravels deposited by the Arkansas River and by stable sand dunes.

The Red Hills, a prominent component of much of western Oklahoma, projects into the south-central part of Kansas. The region's heavily eroded soils and rocks get their distinctive color from iron oxide in the rocks of the Permian "redbeds." The major streams that drain this area, the Cimarron and Medicine Lodge rivers, flow through narrow, steep-walled valleys.

Abutting the Red Hills to the east and straddling the Arkansas River Lowlands are the Wellington-McPherson Lowlands. The Wellington Lowland is located south of the Arkansas River. It is a relatively flat, featureless area with wide exposures of the rocks and soils of the Permian redbeds, which are entirely different in the Red Hills province. The McPherson Lowlands, on the other hand, are capped by soils composed of wind-blown loess and volcanic ash. They are thought to represent the filled channel of a stream that once connected the Smoky Hill and Arkansas rivers.

Much of the north-central portion of Kansas is covered by the Smoky Hills. The gently rolling landscape is underlain in some areas by post rock limestone. In other areas, there is dark brown Dakota sandstone. The Republican, Solomon, Saline, and Smoky Hill rivers drain this

region. These are characterized by broad, flat flood plains and pronounced, bench-like river terraces.

Central Lowlands

Bordering the Smoky Hills to the east, and running north to south through the eastern part of the state are the Flint Hills Uplands. Beds of limestone, shale, and chert (flint) underlie these gently rolling hills that are covered by one of the largest native grass prairies in the United States.

East of the Flint Hills, the northeastern part of the state is covered by a formerly glaciated region, and the east-central and southeastern part is covered by the Osage Cuestas. The glaciated region, the hilliest part of the state, is known as "Little Switzerland" in places. Throughout this region, areas of glacial deposits are common. The Osage Cuestas are named for a distinctive topographical feature known as a cuesta, which is a hill with a steep escarpment on one side and a gentle slope on the other.

Projecting like a finger into the Osage Cuestas are the Chautauqua Hills—gently rolling hills capped with a resistant limestone. In the extreme southeastern part of the state are small areas of the Cherokee Lowlands. The Cherokee Lowlands have eroded until they are relatively flat.

Ozark Plateau

The Ozark Plateau covers a very small portion of extreme southeastern Kansas. The resistant limestones of this area form a hilly region well known in northwestern Arkansas and southwestern Missouri as the Ozarks.

Human Environment of Kansas

Archeologists working in Kansas know that humans were present here at least 12,000 years ago, if not earlier. Kansas then was different than it is today. The last ice age—the Pleistocene—was ending, and large mammals that are now extinct roamed the landscape and were hunted by the first people in Kansas. From this earliest period, called the Paleoindian, Kansas has always been inhabited by people. Piecing together information from a great many sites in Kansas and in surrounding states, archeologists have documented a succession of cultures during ten millennia. The story of these cultures tells the story of Kansas. The following sections summarize this story during four major periods: the Paleoindian, Archaic, Ceramic, and Historic. As compelling as this story may be, there are many chapters that have yet to be written or that are incomplete because the needed information still lies hidden beneath the Kansas soil.

Paleoindian Period

The first people to live in Kansas arrived here at least 12,000 years ago. We have no reason to suspect that humans ever abandoned Kansas after that initial settlement. It is probable that other people entered Kansas at later times, bringing with them new ideas and new traits that had an impact both on the landscape and people already living in Kansas.

If we assume that a human reproductive generation is 25 years (most humans have had at least their first child by that age), this means that some 480 generations of people have occupied the Kansas landscape since that time when the first human steps were made into the area. While we do not know who these first people were, we do know that they were the ancestors of the people that were later called American Indians. We also know that the first people in Kansas were physically part of the same biological sub-species as all modern people.

They entered Kansas as a part of a much larger migration of early hunting peoples from the Asian subcontinent to the New World. This movement of people took place during the latter part of the ice age when thick glaciers covered much of the northern hemisphere and sea levels were low. The low water exposed a broad landmass that joined Alaska with northeast Asia. An ice-free corridor and exposed coastlines provided human and animal access to the interior of the North American continent. Migration was not intentional. People were simply expanding their

hunting territories. This movement may have begun 20,000 or more years ago. Certainly humans were present on the North and South American continents by at least 14,000 years ago.

Archeologists call the first people to enter Kansas Paleoindians. They were hunters and collectors of wild plants and animals. The Kansas environment 12,000 years ago hosted some of our present diversity of plants and animals, but it also contained large and impressive ice-age mammals. There were the mammoth (an elephant-like creature) and long-horned bison. The Kansas climate was somewhat wetter and colder at that time than it is today. These creatures became extinct within just a few thousand years after the humans arrived, and some archeologists have suggested that hunting by Paleoindian peoples may have hastened the animals' demise.

These first people had unique opportunities that were never again available to later people. They entered a land that was devoid of other humans. In virtually every area of the world today, with the exception of Antarctica and perhaps some small islands in the Atlantic or Pacific oceans, the territory of one human group extends only to the boundaries of the next group. This restricts human activities and limits the size of territories that can be occupied. These first hunting peoples had no such limitations. Archeologists suspect that their hunting territories were large and that their movements were defined by seasons and by plant and animal availability rather than being confined by interaction with other human groups.

It is not surprising to learn that Paleoindian cultures throughout North America shared many basic similarities. The earliest identified cultures, called the Llano complex by archeologists, are recognized by the presence of distinctive Clovis fluted projectile points. These large and well-made spear points have been found directly associated with the butchered bones of mammoths in Oklahoma, Nebraska, Colorado, New Mexico, and other states.

Clovis points are lanceolate in shape. They range in size from 2 inches to more than 7 inches long, and they have distinctive concavities or flutes on the faces near the base. These flutes are typically $\frac{1}{4}$ to $\frac{1}{3}$ the length of the point. This allowed the point base to be inserted into a fairly small diameter dart or spear shaft. The base and lower edges in the areas of the presumed hafting were usually intentionally dulled by grinding, so that the point could be securely affixed to a shaft.

Radiocarbon analysis of organic materials from Clovis sites indicates that they date from 9,500 to 8,500 B.C. So far, the Llano complex has been identified in Kansas solely by finds of Clovis projectile points on the surface in isolated occurrences. Late ice-age mammoth remains also have been discovered throughout Kansas, and archeologists are continually on the lookout for Clovis points that appear in direct relation with bones. Most such discoveries in surrounding states have been chance finds, often made by amateur archeologists or laypersons. Since the Kansas landscape has changed significantly since Llano times, it is difficult to accurately predict where Clovis-related sites might be.

The next recognized culture in Kansas is the Folsom complex. It spans a time range from about 9000 to 8000 B.C. This culture was first formally recognized at a New Mexico site excavated in the 1920s, but archeologists today know that the culture was much more widespread. Folsom hunters had a lifestyle similar to that of the Llano people, but by the time that they were present the large mammoths were extinct.

While Folsom peoples utilized many wild plants and animals, they showed a preference for bison. Remains of extinct forms of long-horned bison have been found at many of their excavated camp and animal kill sites throughout the Plains and the Southwest. The most distinctive artifact associated with this culture is an extraordinarily well-made type of projectile point—the Folsom point. Like Clovis points, Folsom points were fluted. Basal thinning flakes or flutes were removed from one or, more commonly, from both sides of the point. This created a thin cross section that was utilized for efficient hafting of the point to dart or spear shafts.

Folsom points are typically smaller than Clovis points. Folsom points average in length from 1½ to 2 inches, but the flute scars are proportionally longer than those found on Clovis points. In fact, they often are nearly as long as the completed points. Like the Clovis point, the Folsom point had intentionally dulled lower edges and base. Great skill was required to produce these points. They are often exceptionally thin, so thin that one wonders how such delicate points could be used as tips on spears that were thrust or thrown into large, thick-skinned animals.

Experiments, however, have shown that these points have the two most important characteristics for a projectile point: a sharp point and sharp lateral edges. These allowed the hunter's spear to penetrate deeply into an animal's vital areas. The point's thinness aided this

operation because the critical juncture of point with shaft could be made small enough so that the haft area did not interfere with deep penetration. The Folsom site in New Mexico provided the first widely accepted evidence that humans and extinct animals were contemporaneous in North America. However, the first scientific excavation of a site that had both extinct animal bones and a probable Folsom point was in western Kansas in 1895. Two geologists from the University of Kansas, H. T. Martin and Wm. H. Overton, discovered the skeletons of several *Bison antiquus* along Twelve Mile Creek in Logan County. While excavating the bison skeletons, they discovered a chipped stone projectile point lying beneath the shoulder blade of one of the male animals. Unfortunately, the point was lost shortly after its discovery, but a photograph and drawings were made, and these have survived. The photograph suggests that this point was fluted and that the flute ran the length of the point, characteristics typical of a Folsom point.

Two radiocarbon dates were obtained recently from the Twelve Mile Creek bison bone. Both dates, 8485 B.C. and 8295 B.C., are within the known time range for Folsom sites from other areas. Folsom or Folsom-like points have been discovered as surface finds in many Kansas counties, including some in eastern Kansas.

The Folsom complex was the last cultural grouping to consistently produce fluted projectile points. Succeeding Paleoindian complexes, which are collectively referred to as Plano, are characterized by a variety of distinctive, mostly lanceolate, projectile point types. The Plano complexes fall within a time range from approximately 8000 to 6000 B.C. Plano types of projectile points tentatively identified as Agate Basin, Plainview, Hell Gap, Meserve, Dalton, Scottsbluff, Midland, Eden, Milnesand, and Brown's Valley have been reported in Kansas. One site, the Sutter site in Jackson County, has yielded a component attributed to the Frederick complex. This is a late Plano complex dating between 6400 and 6000 B.C. The earlier Plano complexes are likely to yield evidence of extinct forms of bison, while the later ones contain evidence of modern bison or *Bison bison*. The people and events of prehistory did not march across a stage with curtains drawn between acts. Late Paleoindian complexes obviously blended into the next recognized temporal period, the Archaic.

Archaic Period

North America's climate began to change toward the end of the Pleistocene or ice age. The trend was toward the modern climate, which was somewhat warmer and drier than in previous times. In fact, there may have been a time of fairly intense warming and drying, called the Altithermal, from around 8,500 to 4,500 years ago that was followed by a climate like the modern one. These climatic changes had major effects on both plants and animals of the Plains. During this time, the modern grassland environment of Kansas was established. There was significant reduction in the diversity of animal species. Mammoth, mastodon, long-horned bison, horse, camel, giant sloth, and several species of carnivores, like the dire wolf and short-faced bear, were all extinct by the end of the ice age. Modern species, including modern bison, elk, antelope, deer, coyote, etc., were present in large numbers and provided food for humans, who presumably adapted from a Paleoindian to an Archaic way of life. Severe droughts during the Altithermal may have caused temporary reductions in the numbers of people occupying the Plains, but it is unlikely that this area was ever totally abandoned by humans.

The Archaic spans a considerable time range from approximately 8,000 years ago up until A.D. 1. It is the longest of the documented archeological periods for the state. It covers all the cultures and happenings from the end of last the ice age until a time when some major cultural changes altered the basic hunting and gathering pattern that was so firmly established during Paleoindian times. The Archaic was a time when hunting and gathering, or foraging, was the basic pattern for all humans in Kansas. During the early part of the Archaic, this pattern was essentially the same as that of the Paleoindians, and it is often difficult or impossible for archeologists to state with certainty that a particular site represents a late Paleoindian rather than an early Archaic culture. It is most likely that the two blended into one another, making our construct of rigid divisions between the periods an artificial one brought on by our need to classify and quantify the things that we uncover. Nevertheless, developments within the Archaic allow us to identify an Archaic lifestyle and to contrast it with that of the earlier Paleoindians and with those patterns of later peoples.

The most obvious difference between Paleoindian and Archaic peoples is a simple environmental fact. Archaic peoples hunted modern species of animals since some of the staple

meat sources of the Paleoindians, like mammoth, were no longer available. This is a basic difference, but differences are more profound and complex than this. The Paleoindians lived in an environment of considerable plant and animal diversity, and it seems likely that during at least the early part of the Paleoindian period, the environment could have supported a larger human population than it did. Archeologists think that Paleoindians lived in fairly small bands that were probably kinship based and that they roamed across large areas that were virtually boundless. They were almost certainly on relatively friendly terms with their neighbors, and they could probably change group or band membership without a thought or stress. In fact, there is evidence from Wyoming that some Paleoindian bands cooperated in mass hunts of Pleistocene bison. Our supposition of general uniformity is supported by the similarity of Paleoindian artifacts throughout the Plains. In modern times, Eskimo populations of the Arctic have exhibited a similar uniformity of material culture items across vast areas. The hunting weapons of Greenland Eskimos were not really that different from those of Eskimos who lived as far away as Alaska. It is striking that this similarity extends to kinship patterns, social organization, religious beliefs, and even language. While the Eskimo habitat is sometimes very harsh, it does not appear that the Eskimo population ever reached the capacity of the arctic environment to support it. We can safely make the same statement for the Paleoindians in the Plains region of North America.

Evidence for Archaic peoples presents us with quite a different picture. Several distinctive archeological cultures have been identified for the Archaic. These identifications have been made, in many cases, on sound enough basis so that the recognized groups can be included as units within taxonomic schemes (orderly classification systems based on relationships). For example, the most current taxonomic method distinguishes groups from one another on the basis of form, time, and space. A certain taxon, like the Munkers Creek phase, represents sites found in a certain geographic area with similar radiocarbon age measurements and distinctive artifacts. There are spatial and temporal limits of this particular archeological culture. The content consists of all information that relates to the technology, economy, subsistence, settlement pattern, and other cultural elements. Artifacts and other material culture evidence provide the basic foundation for this formal taxon.

It is obvious that some Archaic cultures had definite boundaries. We do not know if these boundaries were meaningful in terms of the overall cultural interactions of Archaic peoples, but they probably reflect, at the least, increasing isolation and group territoriality. It is believed that cultural differences arise when groups are either selectively exposed to new ideas or when these ideas are generated within specific groups in semi-isolation from other groups. Evidence suggests that Archaic peoples were more likely to stay within territories and that they used their local areas more intensively. The number of grinding stones found at Archaic sites suggests that part of this adaptation may have been a use of more wild plant foods during this period than in the preceding one. Archaic peoples continued to hunt for their protein needs, and they developed an efficient arsenal of weaponry for this task. Spear and dart points of various types were used, and the atlatl (a throwing stick that also may have been used by Paleoindian people) saw widespread use. Atlatls are thin boards. A hook on one end engages a cupped depression in the base of a dart shaft. The other end of the throwing stick was held in the hand and the dart was thrown with far greater force than would have been possible with just the arm. In Kansas, atlatl weights have been found. These are stones that were presumably tied to the throwing sticks, allowing better balance and perhaps increased thrust.

Many Archaic sites so far discovered in Kansas are camp or village sites. Camps typically contain fireplaces, discarded broken animal bones, and lost or abandoned stone tools. Some Archaic sites have yielded evidence of posts in the form of post molds, which are marked by dark, typically circular soil stains. When excavated, they prove to be places where posts were once in the ground. This indicates that at least some Archaic peoples built permanent or semi-permanent dwellings. Actually, many Archaic sites seem to have been occupied and reoccupied on a seasonal basis. Perhaps Archaic bands regularly returned to the same location to harvest nuts or seeds or to collect good quality stone for making tools.

While our evidence for both the sites and the physical bodies of Paleoindian peoples in Kansas is very slim, this is not the case for the Archaic. Archaic campsites have been discovered and excavated in several areas of eastern Kansas, and Archaic sites are known in the western part of the state. In addition, several Archaic burial locations have been located and investigated. This has provided information about the peoples' physical appearance and their religious customs in

the treatment of the dead. The very fact that there are burial areas, places where the dead were intentionally deposited, suggests that these people had religious beliefs and practices surrounding death.

The earliest recording of an Archaic site in Kansas occurred in 1902 when the remains of what proved to be two Archaic skeletons were recovered from the loess bluffs of the Missouri River near Lansing. The antiquity of these two skeletons was not known at the time. Their discovery generated considerable controversy among scientists. Some thought that the skeletons were very ancient; others thought that they were relatively modern. Modern radiocarbon dating of samples from the Lansing skeletons revealed that the individuals most likely died during either the fifth or sixth millennium B.C. These skeletons evidently represent two individuals who were buried some distance from any camp or village.

The Stigenwalt site (14LT351) in southwest Kansas also dates to the sixth millennium B.C. This site was exposed 10 feet beneath the ground surface in the bank of Big Hill Creek after the landowner straightened the channel. Emergency salvage excavation recovered spear points, bone tools, a bird bone bead, and fragments of human bone. The spear points are similar to Hardin Barbed, Kirk Corner notched, Kirk stemmed, Calf Creek, and Quad points, all better known from regions east and south of Kansas. The animal bone at the site shows that while deer were taken, small animals such as birds, fish, coyote, rabbit, and even voles made up the bulk of the diet, highlighting the shift from Paleoindian big game hunters to Archaic period foragers.

Logan Creek

The Logan Creek phase is contemporaneous with the Stigenwalt site. This phase was originally identified at the Logan Creek site in northeastern Nebraska, and additional Logan Creek sites including camps, animal kill and butchering sites, and burial sites have been found and excavated both in Nebraska and Iowa. The Logan Creek phase may date as early as 6550 B.C. and may have lasted as late as 850 B.C. in some areas. It is recognized by distinctive small to medium-sized Logan Creek points that are triangular in overall shape, have two shallow side-notches set above the base, have concave bases, and are ground on stem edges. These distinctive

points have been found as surface finds in both eastern and western Kansas. An intact Logan Creek site has not yet been excavated in the state.

Munkers Creek

Several middle and late Archaic cultures have been identified in Kansas. The Munkers Creek phase, located in the Flint Hills and the western part of the Osage Cuestas, is one of the better known of these complexes. This culture was first identified at the William Young site (14MO304) at Council Grove Reservoir, where archeologist Tom Witty found evidence of repeated occupation of a campsite by a group of people who lived in that area sometime during the fourth millennium B.C. These Archaic hunters and gatherers apparently returned to this camping spot repeatedly to obtain the good quality chert that outcrops on nearby hillsides. They manufactured a variety of projectile points, knives, gouges, and axes from the distinctive blue-gray rock.

Munkers Creek projectile points are large and lanceolate in outline. They have a distinctive stem element that is somewhat narrower than the maximum blade width. Munkers Creek knives are long and narrow. They have curved edges, often with distinctive silica polish on both sides. These may have been used to harvest wild grasses. Munkers Creek gouges are chisel-like tools that often were made on broken sections of knives. The Munkers Creek axes are thick. And often are narrowed in the center area, presumably so that a handle could more easily be hafted onto them.

The most unique artifacts from the William Young site were two fired clay human effigy heads. These small effigies were lump modeled in clay and then baked in an open fire until they hardened enough to be durable. Aside from the fact that these are our earliest surviving portraits of humans in Kansas, these finds were unexpected because previous archeological research indicated that pottery making did not become a common practice in Kansas until sometime around A.D. 1. A single ceramic bead also was recovered from the Coffey site (14PO1) in

northeast Kansas. This may be an example of a technology that enjoyed brief popularity, was forgotten, and then was resurrected at a later date.

Another Archaic culture identified in the Flint Hills and western part of the Osage Cuestas is the Black Vermillion phase. The representative site for this phase is the Coffey site, located in Pottawatomie County. The Black Vermillion phase shares many characteristics with the Munkers Creek phase. Like Munkers Creek, this phase dates to the second half of the fourth millennium B.C., although it may have lasted up into the third millennium. Again, seasonality of occupation was indicated. However, the Coffey site was not in an area where large-scale chert quarrying was practiced. The site may have been a camp that was occupied on a seasonal basis for exploiting floodplain food sources. Projectile points associated with the Black Vermillion phase include some lanceolate types, but there are also triangular-shaped points with basal or corner notches. One fired-clay bead was found at the Coffey site.

El Dorado Phase

The El Dorado phase is a better-known Late Archaic culture that also occupied the Flint Hills and the western part of the Osage Cuestas. It dates to the second millennium B.C. and, like other Archaic cultures, was based on hunting and gathering. Archeologists who have investigated this culture suspect that El Dorado phase people followed a settlement pattern that consisted of large base camps with associated small hunting camps within a restricted area. There is evidence of structures of some permanence. Post mold stains and burned daub (clay plastering) have been found at some sites. The typical projectile point of the El Dorado phase is the Dustin or Lamoka point. This type is a medium-sized dart point. It is relatively narrow, has a thick diamond-shaped cross-section, and has shallow side-notches set near the base. Table Rock points also are found at El Dorado phase sites. Table Rock points are small dart points that have shallow corner-notches and a flatter cross section than the Dustin points. Human burials have been found at El Dorado phase sites. The typical pattern for disposing of the dead was to place the body in a flexed position with the arms and legs drawn in tightly. Burials occurred within

camp or village sites. At one site, the Williamson site (14CF330) in Coffey County, there was an intentional burial of a domesticated dog in proximity to human burials.

Walnut Phase

The Walnut phase dates to the first millennium B.C. It appears to follow the El Dorado phase in the same geographic area. Small corner-notched projectile points, called Walnut Valley Corner Notched, have been found at sites of this culture. The points are believed to be true arrow points rather than dart or spear points, which would make the Walnut phase the earliest identified Kansas culture to use the bow and arrow. All previous cultures are believed to have relied on thrown or thrust spears or darts with atlatls. The shift to the bow and arrow offered many advantages, including increased range and accuracy and less body movement to launch the weapon. This last asset allowed hunters to work in forested environments and increased the chances of firing a second or third shot if the first one missed.

Nebo Hill Phase

The Nebo Hill phase was originally identified in Missouri. However, its distinctive artifacts have been recognized in eastern Kansas. The phase probably dates to the second millennium B.C. Artifacts include many items that have counterparts in the earlier Munkers Creek phase. Tools include large lanceolate projectile points, called Nebo Hill points. These points are narrow and diamond-shaped in cross section. They have slightly tapered stem elements with weak shoulders developed where the stems meet the blades. These points are actually reminiscent of certain Plano point types of the late Paleoindian period. Other stone artifacts include items that have been called hoes, gouges, and grooved axes. The hoes are large chipped stone tools that sometimes show a heavy polish from repeated use as digging tools. A Nebo Hill site in northwestern Missouri yielded the earliest known true pottery in the region.

This find consisted of several sherds from a ceramic bowl or jar. The sherds had temper (material added to raw wet clay to aid in the shaping and firing of pottery) of grog or fiber added to the raw clay during the manufacturing process. Nebo Hill burial areas were evidently located on ridge tops and separated from living areas.

The presence of identified Archaic types of projectile points at archeological sites throughout Kansas testifies to the fact that Archaic populations did not limit themselves to just the state's eastern area. Likely, greater numbers of Archaic complexes have been found in eastern Kansas because more extensive archeological research has been done there than in the western part of the state. Identifying and excavating western Kansas Archaic sites is a high priority for archeological research in the state. Of particular interest are sites that span the transition from Paleoindian to Archaic and from the Archaic to the Early Ceramic. Additional work on both eastern and western Kansas Archaic sites is needed to clarify the remarkably successful hunting and gathering strategies of these early peoples.

Ceramic Cultures

The Archaic period, as presently conceived, ended on the Plains about 2,000 years ago when several changes occurred in the way people lived. Some of these changes were introduced from other areas, particularly the eastern woodlands of North America. There may have been an actual migration into this area by people from the eastern woodlands, although this is by no means proven. The changes that occurred evidently spanned a broad range of cultural behavior and included technological innovations, environmental adaptations, new social systems, and perhaps even changes in ideology and worldview. A developing ceramic technology is the most obvious of the technological changes. For this reason, the post-Archaic cultural groups are called the ceramic cultures, and the initial part of this period, from approximately A.D. 1 to 1000, is the Early Ceramic period. The rate of cultural change during this time was not constant. While some cultures were still living an Archaic lifestyle, others adopted pottery and began growing crops.

Early Ceramic Period

As noted earlier, the widespread appearance of pottery vessels marks the beginning of the Early Ceramic period. At least some Archaic peoples, like those of the Munkers Creek and Nebo Hill phases, experimented with heating shaped clay, and Nebo Hill people created pottery vessels, though these are rare. It was during the Early Ceramic that the people of Kansas began to develop a reliance on this technology to provide cooking and storage containers. They developed at least two methods for shaping clay into bowls and jars. They either lump-molded shaped pots from a raw mass of unfired clay or, more commonly, raw clay was formed into broad coils. A pot was constructed by firmly attaching the coils of clay to each other then flattening the coils.

The regular and widespread manufacture of pottery by Early Ceramic peoples is significant to archeologists. First of all, pots are efficient cooking and storage vessels. They would have given a prehistoric people an advantage in utilizing both edible plants and animals. Some plants, for instance, must be boiled to be palatable, and large ceramic vessels are efficient boiling devices. The pots are, however, rather fragile and will not stand up well to long-distance travel. Once clay is fired into a ceramic it is quite durable, but the pot itself is fragile. This is why archeologists are not at all surprised to find sherds (broken pieces of pottery), but discovering a complete and unbroken pot during an excavation is cause for celebration.

Since ceramic vessels are fragile, fairly heavy and bulky, one would not expect a truly nomadic group to have much interest in developing ceramic technology. In fact, most of the Early Ceramic peoples appear to have been less nomadic than the preceding Archaic peoples. Evidently Early Ceramic peoples found even more efficient ways to use the food resources of more restricted environments. Archeologists do not know what caused the more sedentary lifestyle. Probably it was a combination of factors: increased population pressure, diminishing reserves of previously utilized food sources, climatic changes, and perhaps a partial reliance on domesticated plant foods. Some of the Early Ceramic cultures were beginning a transition from food gathering to food production. This change in subsistence had dramatic consequences for people all over the world. Vere Gordon Childe, the British prehistorian, termed this the

"Neolithic Revolution." The Early Ceramic period is one of the most exciting chapters in Kansas prehistory because the revolution began in the Plains region during this time.

Pottery is also useful to archeologists because it is such a sensitive indicator of individual and cultural differences. Although it is difficult or impossible to recognize individual artistry on two similar stone tools lying side by side, it is relatively easy with two pots. Every little incised line or added-on lump of clay indicates stylistic differences that allow the archeologist to discern the work of an individual or a group. Thus, it is not surprising that archeologists spend considerable time describing and categorizing different pottery types. These offer key traits for recognizing or identifying different groups of people.

Another major technological development during the Early Ceramic was the widespread adoption of the bow and arrow as a hunting weapon. While the spear was probably never totally replaced, people increasingly relied on the bow. Considering the artifacts in archeological collections, arrow points far outnumbered spear points by the end of the period. The distinction between an arrow point and a dart or spear point is, of course, somewhat subjective. After all, no preserved spear or arrow shafts from Archaic or Early Ceramic times have survived in Kansas, but such specimens have been found in dry cave sites in the deserts of the American West.

Arrow points tend to be smaller, thinner, and lighter in weight than spear and dart points. The easiest way to identify an arrow point is to examine the hafting element, if one is present. All of our current evidence, consisting of some preserved archeological specimens from dry cave sites and thousands of ethnographic examples of arrows made by American Indians, indicates that their arrow shafts had diameters similar to that of modern arrows, which typically are less than 1 centimeter. The notch width of a spear, dart, or arrow point has a direct relationship to the width of the intended hafting element. Efficient hafting in a notched shaft is only possible when the point's notch width is the same or slightly larger than the shaft diameter. Socketed points require that the hafting element be smaller than the shaft diameter. Therefore, if the examined point is small, thin, and light and has a notch width no greater than 1 centimeter, it is most likely an arrow point. Many collectors refer to these true arrow points as "bird points" in the mistaken belief that, since they are small, they must have been used to kill small game. Actually, modern bow hunters use blunt points when hunting birds, since these are less likely to stick in the upper

trunk and limbs of trees. Small arrow points of 2- to 4-centimeter lengths were commonly used by North American Indians to dispatch large game, including bison. The sharp point with two sharp lateral edges facilitated the shaft's entrance, while the rapidly entering shaft damaged the tissue and organs.

Many of the other changes that took place during Early Ceramic times are subtle. They must be considered within the full context of the period. Increasing population probably dictated different and more complex methods of political and legal control. New ways of disposing of the dead also indicate a change in beliefs. This is particularly noticeable when archeologists find constructed burial mounds in prominent locations on bluff tops.

One curious fact about the Early Ceramic is that we have more recorded site locations for this 1,000-year span than for all of the other previous prehistoric cultural periods combined. Several factors affect these totals. For example, there are few known Paleoindian sites, and that scarcity is explained by a combination of small population during that time and subsequent changes in land surfaces that either buried or eradicated those ancient sites. Also, the handful of excavated Archaic sites—the William Young, Williamson, Coffey, Stigenwalt, and Snyder sites—are all deeply buried near drainages where more recent alluvium covered up and preserved the deposits. Land-altering forces, such as wind and water erosion and deposition of soil, have been less intense for the past 2,000 years. This means that many Early Ceramic sites are found at or close to modern land surfaces.

Cultural behavior of the Middle Ceramic and Late Ceramic periods influences the number of sites we know about today. For instance, there were large populations during the Middle and Late Ceramic periods, and the people tended to live in much larger clusters than during Early Ceramic times. As one example, several hundred Pawnee occupied a village site in Republic County, Kansas, during the early 1800s. This same size population during Early Ceramic times would have been dispersed in smaller groups over a much larger area. Another factor that may influence our perception of population size is differences in land use. One Early Ceramic group might occupy several different sites on a seasonal basis within a single year to harvest a variety of different foods and have access to other raw materials, such as chert for

making tools. The permanent villages of later farming cultures, like the Pawnee, may have eliminated the necessity for such specific resource area camps.

The Early Ceramic period, and all of the archeological periods that followed, are notable for another major difference from the pre-ceramic periods. Increasingly, these cultures reveal a combination of distinctive local traits. At the same time, they show the effects of contact with other recognizable groups. While individual cultures are easier to recognize because of their distinctive artifacts and features, there are also indications that specific groups did not live in isolation. In some sites in the Kansas City area, people participating in what is called the Hopewell complex, described more fully below, obtained some raw materials and possibly finished products from distant places like the Rocky Mountains. Obsidian, a form of volcanic glass that yields extremely sharp cutting tools when properly worked, has been found at some Hopewell sites in eastern Kansas and western Missouri. Since this material is not locally available, it is referred to as "exotic." Obviously the Hopewell people were either long-distance travelers or took part in a fairly extensive trade network. In fact, the network that connected the peoples of Kansas with peoples from other areas was extensive. This affected far more than simply raw material sources. Archeologist Stuart Streuver has proposed that the main thrust of Hopewell expansion was a political and religious movement that was so widespread that it influenced and united peoples from far-flung areas. He has termed this the "Hopewellian Interaction Sphere." It appears that the Hopewell peoples of Kansas represent the western border of this interaction sphere that united people, in some little understood way, from places as far apart as Kansas, New York, and Florida.

Hopewell

The Early Ceramic artifact assemblages have been divided into two primary groups: the Hopewell and the Plains Woodland. Hopewell, represented by Kansas City Hopewell and the Cuesta phase, lived principally in eastern Kansas along major streams and their tributaries. The phenomenon referred to as Hopewell exemplifies cultural contact, exchange, and rising complexity. Sites with Hopewell elements such as traded materials from distant source areas and

a flourishing art tradition are best known from the Ohio and Mississippi river valleys, but are present as far south as Florida and as far west as Kansas. People that had adopted Hopewell traits from further east may have migrated into Kansas. If so, it is likely that they brought several new ideas and inventions, such as burying the dead in mounds on prominent ridges, cultivating some domestic crops, using the bow and arrow as a hunting weapon, making ceramic cooking and storage containers, and taking part in a widespread religious movement. Hopewell sites were firmly established in northeastern Kansas by sometime around A.D. 1., settlement in southeast Kansas took place somewhat later. Hopewellian people must have either replaced or joined with the local Archaic peoples. Plains Woodland peoples are recognized as distinctive cultures throughout much of Kansas. They were evidently local Archaic peoples who adapted to new ideas and technologies.

The Kansas City Hopewell variant is one of the better known of the Early Ceramic cultures of Kansas, dating from A.D. 1 to 500. Kansas City Hopewell sites are centered in the Kansas City area, primarily along tributaries of the Missouri River, but have been found west along the Kansas River drainage and to the east in Missouri. Large Kansas City Hopewell villages were located at the mouths of rivers, where the rivers joined with larger drainages. Smaller sites, which may represent seasonal campsites, were typically located farther up the drainages on terraces that were usually safe from flooding. The dead were placed in or under rock burial mounds on bluff tops near the villages. Kansas City Hopewell depended primarily on hunting and gathering for subsistence, but the people cultivated at least limited amounts of corn, marsh elder, and squash. Spears or darts were the primary hunting weapons, but small corner-notched projectile points found in later sites suggests that the bow and arrow replaced earlier weapons. Ceramic containers are most commonly pottery jars, tempered with particles of sand. Pots are often elaborately decorated on the rims with cross-hatching, rocker stamping, and punctating and bossing. Three-quarter grooved, ground stone axes were used, and blades of chert were produced. Occasional finds of objects made from native copper from the Great Lakes region, obsidian from the Rocky Mountains, and marine shell from the Pacific and Gulf coasts indicate long-distance trade. They hint at complex interaction with other peoples.

Cuesta Phase

The Cuesta phase is a second Hopewellian culture that occupied portions of southeast Kansas from approximately A.D. 500 to 1000. Like the Kansas City Hopewell, the Cuesta phase peoples were primarily hunters and gatherers who supplemented their diets with limited maize (corn) agriculture. They lived in large oval to circular houses in big villages along major streams and smaller hamlets along secondary drainages. Cuesta phase people had many traits quite similar to those of the Kansas City Hopewell peoples, but they are distinguished by the lack of exotic trade goods and by different ceramic styles. Interestingly, while no copper tools are found in Cuesta phase sites, there are stone tools that mimic copper tools from other Hopewell sites to the east. It has been suggested that Cuesta people shared in the general knowledge of the Hopewell Interaction Sphere but lacked specific trade channels to obtain actual items. Cuesta pottery is tempered either with grit or particles of dried or fired clay, often called grog. Jars with constricted necks are common vessel forms. These often have rims that are decorated with zoned dentations, embossing, and punctates. Burial patterns are not well known, but at least some of the dead were placed in trash middens.

Other Early Ceramic Groups

Other ceramic cultures emerged during the Early Ceramic period that have few or none of the traits that distinguish the Kansas City Hopewell. The earliest known of these is the Valley variant, dating from A.D. 1 to A.D. 600, first recognized from sites in Nebraska. Valley variant sites are of two types: large villages, located near the confluences of streams and larger rivers, and smaller camps farther up drainages. Small circular to oval basins, ranging from 4 to 7 meters in diameter, are interpreted to be the remains of mat- or skin-covered houses. Hearths are found within the houses. The subsistence pattern was evidently hunting and gathering. Both thrusting and/or throwing spears and the bow and arrow were used. Burial was in mounds, following a pattern similar to that of the Kansas City Hopewell. The most distinctive artifact of the Valley variant is a type of pottery called Valley Cord-Roughened. It is a sand- and/or grit-tempered and

has vertical cordmarking all over the exterior. Vessels have elongated bodies with conical bases and bulge out slightly midway down the body. If there is any decoration, it is usually confined to rims and consists of embossing below the lip and diagonal cordmarking and incising on the rim exterior. This culture appears to be related in some direct fashion to Kansas City Hopewell, but how they are linked is not currently understood. No definite Valley variant habitation sites have yet been excavated in Kansas. However, the largest Woodland burial mound found in the state, the Taylor Mound (14DP3) in Doniphan County, is attributed to Valley variant.

Numerous other defined Plains Woodland cultures—Grasshopper Falls phase, Wakarusa phase, Deer Creek phase, Hertha phase, and Greenwood phase—follow the Valley variant but share general traits of subsistence and artifact form with it. These cultures first appear around A.D. 400 and last as late as A.D. 1000. They are different enough in other traits and in specific location to be recognized as separate archeological entities. There is considerable information about some of these cultures but very incomplete information about others. Some of these cultures are obviously widespread in terms of geography and the extent of time in which they existed. Others, identified from a single site or just a few sites, may have been of very small size and of short duration. They all seem to share what Waldo Wedel called ". . . a simple creek valley hunting and gathering subsistence economy." However, it is now known that limited agriculture was practiced by some of the groups.

Early Ceramic Artifacts

The material culture of most of these groups suggests that they depended mainly on locally available resources. Chipped stone artifacts include a variety of choppers, scrapers, knives, and drills of such generalized types that they do not help to identify specific cultures or even allow defining the general archeological period. Other chipped stone tools, particularly projectile points, are more sensitive indicators of cultural differences. It must be remembered, however, that these are more indicative of the general time period than of a particular culture. This is quite different from Paleoindian, Archaic, and even Hopewell projectile point styles, which are much more specific to individual cultures. Plains Woodland projectile point styles

include both large and small forms. The smaller forms are believed to be true arrow points. Both types typically are stemmed, with the stem element often created by notching from the bottom corners. The resulting points typically are triangular in overall outline with opposing notches at each of the two corners, creating an outline that looks something like a Christmas tree. Other projectile point styles, confined to the true dart and spear points, had either straight or tapered stems. Each of these stem types was undoubtedly a functionally efficient form for different ways of attaching points to shafts, but they were made for only a limited period of time. This makes them useful as cultural markers.

There is a general similarity of pottery vessel shapes for the Plains Woodland cultures. Vessels are medium- to large-sized wide-mouthed jars with thickened, pointed bases. They have outwardly bulging shoulders, slight neck constriction, and simple, often straight vertical rims. They look something like a football with one end cut off. Exterior surfaces typically have cord-roughening marks, indicating that cord-wrapped sticks or paddles were rolled or slapped on the outer surfaces as part of the shaping process.

Temper is one of the variables archeologists use to help identify different ceramic traditions. As noted earlier, temper is material added to raw wet clay to aid in the shaping and firing of pottery. For example, the people of the Grasshopper Falls phase typically burned and crushed granite and added this gritty, angular material to raw clay. Greenwood phase peoples, on the other hand, often burned and crushed limestone to add to the clay. The difference between these two types of temper is obvious. The limestone-tempered ceramics have a smoother feel because the rounded particles of soft limestone lack the sharp edges of crushed granite. Grasshopper Falls pot sherds, on the other hand, will often feel as rough as very coarse sandpaper. So while much of the pottery found in Kansas has no decoration, the materials added to the clay can help archeologists determine its age and cultural affiliation.

Pottery Type	Temper type
Grasshopper Falls	Crushed granite grit
Deer Creek Phase	Crushed granite grit
Wakarusa Phase	Crushed granite grit and sand
Valley Cord Roughened (Valley Variant)	Sand, sometimes crushed granite grit

Harlan Cord Roughened (Keith Focus)	Crushed calcite
Bemis Creek Phase	Burned, crushed bone
Greenwood	Crushed limestone
Schultz Phase	Crushed limestone and crushed granite grit
Hertha Phase	Crushed granite, bone, shell, grog, and sand
Butler Phase	Calcite, sand, clay, feldspar; feldspar and grog

The extent and amount of pottery decoration are keys to differentiate between various Plains Woodland ceramic traditions. Grasshopper Falls Ware, Harlan Cord Roughened, and the ceramics of the Bemis Creek phase, Wakarusa phase, and Deer Creek phase are largely undecorated. Valley Cord Roughened has some embossing below the lips, and diagonal cordmarking and incised decorations are sometimes on rims. Both Schultz pottery and some Greenwood phase ceramics (there are two types, Verdigris and Greenwood) have vessels with smoothed or partially smoothed exterior surfaces. Butler phase ceramics have occasional dentate stamping, with incised lines bordering this stamping on rims. Hertha phase ceramic decorations are limited to incisions or notches on the lips of vessels. Other decoration, when present, it is confined to the uppermost part of the pot, the rim, or just the lip.

These vessels were both cooking and storage containers, although the uneven thicknesses of their walls and the low temperatures at which they were fired made them more fragile than later Middle Ceramic pottery. Two of the Plains Woodland cultures, Greenwood and Bemis Creek, have pots that are globular and vessel walls are uniformly thin, and are very similar to those of the later Middle Ceramic period. Thin, round cooking pots survive heating and cooling better than thick pots with abrupt angles because they expand and contract more evenly.

Structures

Structural remains of houses are another material culture trait that helps to distinguish the various Plains Woodland cultures. Houses of the Grasshopper Falls phase are the best known. These structures are typically recognized as oval to circular patterns of post molds that once enclosed areas ranging from approximately 11 to 130 square meters (118 to 1,400 square feet),

though nearly all measure less than 84 square meters (900 square feet), about the floor area of a two-bedroom bungalow. There is no evidence that these houses had internal fireplaces, but there is evidence that they sometimes had shallow indoor pits. These might have been used for storage or as food preparation areas. The houses were constructed by placing opposing pairs of saplings in the ground, bending them over so that the upper parts overlapped, and then tying them together. For more support, additional lightweight poles were wrapped around the structure and tied. A finished framework looked something like an inverted basket and, like a basket, it derived strength from a latticework construction style. The frame was covered with grass thatch and was at least partially plastered with mud. Other Woodland cultures—like Deer Creek, Greenwood, and Wakarusa—made similar structures. However, mats or bark sometimes may have replaced the thatch and mud covering. Some Woodland houses, including one from the Grasshopper Falls phase, were built with semi-subterranean floors. In other words, shallow depressions were excavated and houses were built over them. In any case, it is significant that houses of at least some permanence are found in Plains Woodland sites. Houses of even larger size are known for the Cuesta phase, and it is thought that Kansas City Hopewell peoples built and used permanent structures. On the one hand, presence of such structures for the Woodland peoples indicates that they had developed a lifestyle that allowed them to live in permanent houses on at least a seasonal basis. On the other hand, the presence of houses heralds the arrival of agriculture. With agriculture comes the requirement for stability and placing populations near cultivated fields.

Middle Ceramic Period

Most of the identified Middle Ceramic cultures in Kansas relied on a dual economic base. Hunting and gathering continued, but there was also agriculture. Hunting and gathering was somewhat different than that practiced in earlier times because people seem to have relied mainly on a single protein source, *Bison bison*, or the North American buffalo. Gardening centered around domesticated plants that were introduced from other areas of North America. Corn, beans, and squash were the principal crops. Domesticated sunflower, and perhaps other

cultivated plants native to the North American Midwest, were also raised. Virtually every group probably grew tobacco, which was domesticated earlier.

Archeologists find evidence of agriculture in recovered charred plant remains, as well as gardening tools. This cultural stage is also demonstrated by permanent or semi-permanent homes, the appearance of deep underground food storage pits, the regular manufacture and use of large quantities of pottery, and the virtually unanimous adoption of the bow and arrow.

Certainly, most of these elements were present in the Early Ceramic period but with far less frequency and regularity. One might suspect that other, less observable changes also took place during the Middle Ceramic. Larger population centers probably brought changes in the type and extent of leadership. It is likely that the tribal nature of many cultures was established at this time. Farming requires efficient and usually long-term allocation of land, either through outright ownership or through use rights. It is likely that use-right practices of later historic groups like the Pawnee, where land use was subject to the approval of village leaders, were established. Significant changes in belief systems almost certainly took place. Virtually all later tribal farming groups in Kansas—such as the Wichita, Pawnee, Kansa, and Osage—had elaborate belief systems and ceremonies that focused on agrarian themes. It is likely that the symbolism implicit in "mother corn" and other religious deities was established during the Middle Ceramic period.

For the Middle Ceramic, the archeologist has a multitude of cultural traits that can be identified and analyzed. Individualistic arts and crafts abound in the archeological residues of these peoples. This allows for finer discriminations of group similarities and differences than for any of the preceding periods. One of the difficulties in dealing with the prehistoric is that similarities and/or differences in the types or frequency of artifacts do not necessarily indicate cultural differences. As an example, the same small band of people could use very different tools for the collection and preparation of nuts and seeds than they would use in a hunting camp. If an archeologist discovered two sites of this people—one a hunting and animal-butchering camp and the other a plant-harvesting area—the sites could look so different in terms of the artifacts that it may be difficult for the archeologist to recognize that the camps were used by the same people.

At the same time that distinctive local cultures of the Middle Ceramic were formed, widespread social networks were established or continued from earlier times. Local groups did not live in isolation. In particular, major cultural developments of the Middle Mississippian to the east and southeast of Kansas had an influence on our resident cultures. Middle Mississippian peoples had major ceremonial centers with surrounding large towns near present St. Louis, Missouri, in eastern Oklahoma, and at other sites farther to the southeast. These complex ceremonial centers often included elaborate temple mounds, a priestly class, and stratified societies based on an economy of corn, bean, and squash agriculture. While no temple mound sites are known in Kansas, it is likely that the people in the region were aware of, and perhaps even shared in the belief systems of, the complex Middle Mississippian cultures.

Central Plains Tradition

One of the main archeological divisions recognized for the Middle Ceramic in Kansas is the Central Plains tradition. Three representative cultures of the Central Plains tradition are known for Kansas: the Upper Republican, Nebraska, and Smoky Hill phases. Upper Republican sites get their name from the Republican River, the principal river along which they settled. They are known from south-central and southwest Nebraska, north-central and northwest Kansas, and extreme northeastern Colorado. Nebraska phase sites are located near the Missouri in eastern Nebraska, western Iowa, northwest Missouri, and northeastern Kansas. Smoky Hill sites lie along the Smoky Hill River of central Kansas. All three of these phases date from A.D. 1000 to 1500, but some Upper Republican sites from the Waconda (formerly Glen Elder) reservoir area in Mitchell County may date as early as A.D. 800.

The most obvious trait that unites these three archeological cultures is the presence of earthlodge structures. These were either rectangular or square in floor plan, built on permanent or semi-permanent habitation sites. The lodges ranged in size from 20 to 225 square meters (215 to 2,422 square feet). Each had a single extended entryway, located midway along one of the edges. Nebraska phase lodges tended to be set into dug holes, making them semi-subterranean. Upper Republican and Smoky Hill lodges were more often set on the ground surface. A central

fireplace, often dug down as a shallow basin, was located within each lodge. These houses are found sometimes as single houses, but they also appear as loosely linked village clusters. These villages lack any evidence of fortifications or other structure that suggest defense against enemies. This relative peacefulness is, in fact, a characteristic of the Middle Ceramic period in Kansas.

Like other Middle Ceramic peoples, those of the Central Plains practiced a dual economy of hunting and gardening. Bison were the most sought after meat animals. Corn, beans, squash, and sunflower were the primary garden crops. Dogs were the only domesticated animals, and, for some Central Plains tradition people, they may have been a food source. Bows and arrows were the weapons of the hunt. The arrows were tipped with small, triangular-shaped points that often had side and/or base notches.

One of the frustrating things about studying archeological cultures, such as Smoky Hill, Nebraska, and Upper Republican, is our inability to recognize actual political or linguistic relationships among these groups. Artifacts and features cannot always provide this information. Nonetheless, because these earthlodge-dwellers of the Central Plains tradition share a number of traits with later historically known tribes, some archeologists assume a descendant relationship. It has been suggested that all Central Plains tradition peoples were of the Caddoan language stock. The material culture traits of the Central Plains tradition groups resemble later Caddoan traits enough to suggest an ancestor/descendant relationship. Again, this is hypothesis, not proven fact.

Nebraska Phase

The Nebraska phase is a widespread Central Plains tradition group that had permanent settlements in eastern Nebraska, western Iowa, northwestern Missouri and northeastern Kansas. Many of the villages were located along the bluffs of the Missouri River and its immediate tributaries. Nebraska sites typically consist of semi-subterranean earthlodge structures. These were arranged in what appear to be extended communities of moderate size. Individual lodges were usually square or rectangular in floor plan. They had deeply sunken floors and single

extended entryways. Storage pits, either straight-sided or more commonly bell-shaped, were utilized to store dried corn, beans, squash, sunflower, and other items. Artifacts recovered at these sites include triangular-shaped, often notched arrow points and bison shoulder blade hoe blades. Pottery vessels are globular in shape with constricted necks and outward curving rims. These vessels are either smoothed or cord-roughened on the exterior surfaces. Shoulders of many pots are decorated with incised lines in geometric patterns. Many vessels have two or more strap handles.

Smoky Hill

The Smoky Hill phase is found in the east-central Kansas, primarily in the upper Kansas River drainage. Smoky Hill sites often have earthlodge structures. In at least one case, a large village of 24 or more earthlodge structures is known, although all of these structures may not have been used at the same time. Smoky Hill houses were rectangular or square in floor plan. Some were quite large. The largest excavated structure measures approximately 15 by 15 meters (50 by 50 feet). These houses were set on the ground surface. Four large center posts provided support for a heavy roof of timbers, thatch, and earth. A single extended and covered entryway was the only way in or out of this type of lodge. Arrangement of houses within the one large village, known as the Minneapolis site (14OT5), in Ottawa County appears random, and no consistent orientation of entryways was noted in the eight houses excavated. Storage pits, both inside and outside of lodges, are present at most Smoky Hill sites.

The inventory of artifacts is similar to that of other Middle Ceramic sites. A common digging tool made from the lower hind limb or tibia of a bison. This dense bone was cut midway along the shaft at an oblique angle to create a chisel-like working edge. The joint end was then drilled or hollowed out to create a hole for inserting a stick. Such tools are referred to as digging stick tips. The high polish on the working edge of many specimens was presumably achieved through wear when they were used in a spade-like fashion to dig in soft dirt. Ceramic vessels of the Smoky Hill people are globular in shape, like the Nebraska phase pottery. The Smoky Hill

pots, however, are almost always undecorated. Cord-roughening is very common as an exterior surface finish.

A large prehistoric Smoky Hill cemetery is located east of Salina. This site, the Indian Burial Pit, contains the remains of some 160 individuals of all ages and both sexes. While many burials were complete and buried soon after death, others consist only of a skull or a bundle of limb bones. These are called bundle burials and may result of the remains of a village resident who died and was buried elsewhere, but later disinterred, with selected remains brought back for burial at home. Others may be the result of a death when the ground was frozen. The body would have left to decompose away from the village, with remaining skeletal elements eventually buried in the cemetery. The graveyard evidently was used repeatedly, since some burials intruded into areas where earlier ones had been placed. This site was a tourist attraction for decades, but changing attitudes in the 1980s saw it closed down and its deposits sealed under a concrete cap. The attention raised by this site was instrumental in the development of a Kansas law to protect unmarked burials and to rebury excavated human remains.

Upper Republican

The Upper Republican phase occupied extensive areas of western Kansas and western Nebraska at about the same time that the Smoky Hill and Nebraska peoples were living in areas to the east. Like the houses of the Smoky Hill people, those of the Upper Republican culture were square to rectangular in floor plan and were set on the natural ground surface. The Upper Republican settlement pattern included both isolated houses and larger communities. Short-term hunting camps, lacking earthlodge remains, also have been identified for these people in Kansas. Upper Republican artifacts are like those of the Smoky Hill and Nebraska cultures, but the pottery is somewhat distinctive. Pots are globular and cord-roughened on exterior surfaces. The rims are often thickened or reinforced. Often they are decorated. Upper Republican peoples buried their dead both in graveyards or ossuaries and under low rock mounds.

Steed-Kisker

The Steed-Kisker phase is another Middle Ceramic culture with strong similarities to Central Plains tradition cultures. However, archeologists have treated it separately because it is believed to be more closely allied to Mississippian cultural complexes to the east of Kansas than to Central Plains cultures. Steed-Kisker sites contain earthlodge remains and shell-tempered globular pots. The sites were first identified in northwest Missouri. Later they were recognized in northeast Kansas. Some interesting sites that may be affiliated with Steed-Kisker occur in east-central Kansas, from Milford Reservoir in Clay County north to the Nebraska line. A nearly complete Steed-Kisker phase structure was excavated at the Scott site (14LV1082) in Leavenworth County in 2001 and 2002 and yielded pottery, chipped stone tools, ground stone tools, burned plant remains, and several pieces of the supporting framework of the house. These sites could represent a temporary movement of these peoples from the Missouri River area to the Kansas River drainage.

Pomona

Pomona is another Middle Ceramic period culture of the Central Plains tradition. Pomona sites are found primarily in the Osage Cuestas and Dissected Till Plains of eastern Kansas. Pomona sites also occur in extreme western Missouri and in the Flint Hills Upland. The culture was first recognized during archeological study of Pomona Reservoir in Osage County. Pomona people made a distinctive type of pottery, named Pomona Ware by archeologists. Pomona pots are globular and have constricted necks. The simple, unthickened rims flare out. Vessel surfaces, paddled or rolled with cord-wrapped sticks, give the surface a cord-roughened appearance. Pomona pots, while very thin-walled and extremely well made, are almost never decorated. They seldom have handles or other appendages. Pomona people lived in irregular round or oval-shaped structures, constructed of a light frame of saplings, covered with thatch and plastered with mud. Radiocarbon dates for the Pomona span the period from about A.D. 900 to sometime after A.D. 1500, though the later dates are suspect. Pomona houses and settlement patterns are similar to those of the earlier Plains Woodland, and sometimes Pomona artifacts overlie those of

the Plains Woodland at specific sites. This suggests that the Pomona culture may have developed from a Plains Woodland base in the eastern part of the Central Plains sometime around A.D. 900-1000.

Oneota

In the mid-twelfth century, a population from the central Midwest began to expand into southeast and south central Nebraska and northeast and north central Kansas. These people are referred to as Oneota. Oneota sites such as the Leary (25RH1), Ashland (25CC1, 25SD147) and Fanning (14DP1) sites are found in eastern Nebraska and Kansas, White Rock phase sites, including the White Rock (14JW1), Warne (14JW2, 14JW8, 14JW24), Glen Elder (14ML1), Blue Stone (25HN45), and Green Plum (25HN39) sites are found further west in Kansas and Nebraska. Eastern Oneota sites show evidence of an economy based on gardening—corn, beans, and other crops—as well as hunting and gathering of wild foods. Sites further west, the White Rock phase of the Oneota, focused heavily on hunting bison. While not demonstrated, the Oneota migration may have resulted from an increasing emphasis on hunting in areas west of the Oneota homeland, where bison were more plentiful. Oneota sites appear to be intrusive upon already established Central Plains tradition people, and have been found next to or on top of Central Plains Tradition sites, suggesting that these two groups were in contact at a point in time or possibly for several decades.

Artifacts on Oneota sites, particularly pottery, are similar to Oneota sites of similar age in Iowa, Wisconsin, and Minnesota. Pottery in eastern Kansas and Nebraska is shell tempered, that further west is more commonly tempered with sand. Pottery decoration includes handles and shapes created by poking a string of impressions into the soft clay of the unfired pot. Distinctive chevron, triangle, and “bullseye” designs sets Oneota pottery apart from others. Other artifacts includes small triangular arrowpoints, beveled knives, end scrapers, disk pipes made of Catlinite (pipestone), the main source of which is in southwest Minnesota; abraders, and nutting and grinding stones. While most stone tools were made of local materials, Alibates agatized dolomite from the Texas panhandle and obsidian from New Mexico, Wyoming, Idaho, and Utah, indicate

either trade or travel with people further west and south. Research continues on Oneota sites to resolve issues of the nature of their migration from the east, their relationships with the indigenous people they encountered, and the means by which they adapted to the western plains environment.

Other Middle Ceramic Groups

Several other roughly contemporary Middle Ceramic archeological cultures have been identified in south-central and southwestern Kansas. In particular, sites along Bluff Creek, a tributary of the Chikaskia River, in Harper and Sumner counties are small villages that contain evidence of several houses of differing construction styles. Of four houses excavated at the Buresh site, two were square in floor plan, one was oval, and one was rectangular. Recovered burned daub indicates that these structures were covered with grass thatch and at least partially plastered with clay. Storage pits, charred corn, and bison scapula hoe blades demonstrate that these people were farmers, but the presence of quantities of butchered bison and deer bone indicate that hunting continued to be important. Hunting weaponry is characterized most clearly by small, often side-notched, triangular arrow points. While the ceramics recovered from these sites are similar to those found at Pomona and Central Plains sites, they have enough stylistic differences to allow archeologists to distinguish them from other ceramic traditions. A unique feature of the Bluff Creek pottery is the shape of pots. Some have flattened bottoms rather than the more typical rounded bottoms of other Middle Ceramic pottery. This flattening also is noted for pottery of the Great Bend culture of the Late Ceramic period—the early Wichita groups.

The Pratt complex is evidently a late Middle Ceramic culture in the area around modern Pratt along the Ninnescah River in south-central Kansas. No Pratt sites have yet been excavated

in this core area. However, related sites near Larned and Rush Center produced evidence of another Middle Ceramic farming and hunting culture that shared general similarities with all of the above listed cultures but which had structures similar to Great Bend houses and ceramics similar to those from late prehistoric cultures of south-central Oklahoma. Pratt ceramics also share traits with other Middle Ceramic cultures in Kansas. Presence of several exotic items, including sherds from types of pottery made in the American Southwest, Southwestern turquoise and obsidian, and Olivella shell beads, clearly indicates that these people were engaged in long-term contact with cultures from outside their area.

Excavations at two sites near Wilmore in Comanche County and another site near Fowler in Meade County provide evidence of other groups in the region. Archeological work in adjacent portions of Oklahoma and even into the Texas panhandle suggests that these groups had close ties with populations to the south. Collectively these sites and other unexcavated sites with similar artifact assemblages have been termed the Plains Border variant, named for the broad physiographic region bordering the eastern margin of the High Plains where these groups lived. These groups built subterranean houses of varying forms and dug cylindrical and bell-shaped storage pits. A shallow square pithouse was identified at the Bell site (14CM407) near Wilmore, while a large oval pithouse was partially excavated at the Lundeen site (14MD306) near Fowler. Dates for these two sites have a range of A.D. 1250-1350. The second site near Wilmore, the Booth site (14CO 406), dates significantly later (approximately A.D. 1450-1550), although material culture is similar to the earlier Bell and Lundeen sites. The artifact inventory includes the typical stone tool kit of the Middle Ceramic period farming group: small triangular arrow points (notched and unnotched), diamond-shaped beveled knives, small end scrapers, drills, etc. Objects made from bone and shell include awls manufactured from various parts of deer and bison, tibia digging stick tips, scapula hoes, notched ribs from bison, and shell scrapers and occasional ornaments. The ceramic assemblage overall is much different from adjacent cultural groups in that vessel rims are often decorated with various forms of pinching, incising, and punctating. Decoration is very diverse and allows for ceramics of this area to be distinguished easily from those of adjacent complexes, such as Pratt and Bluff Creek. Exotic materials were common at the Booth site with up to 6 percent of the total lithic collection comprised of

obsidian, a sample of which has been sourced to New Mexico. Also present were a few Olivella shell beads from the Pacific coast, thick marine shell disk beads, and several sherds of Puebloan pottery. The Lundeen site also yielded limited quantities of obsidian and Olivella, as well as several other marine shell ornaments. Much of what we know about these groups has only come to light within the past few years, and, as is often the case, this work has created as many new questions as it has answered.

Late Ceramic Period

The Late Ceramic period is a time during which Indian populations in the state were introduced to and affected by the introduction of Euro-American culture. Late Ceramic sites are characterized by the same basic types of material culture as the preceding Middle Ceramic period but may also include small amounts of metal, glass, or cloth trade goods from contact with Euro-Americans.

Great Bend Aspect

Although the Wichita Indians probably left Kansas by about 1700 or 1750, their numerous large village sites reflect the importance that this group once had in the state. Archeologists have assigned early Wichita sites to the Great Bend aspect. Although concentrated in south-central Kansas, sites with Great Bend materials are known throughout the state. Descriptions from Coronado's 1541 expedition note the Wichita living in large villages surrounded by agricultural fields. Their lodges were beehive shaped and grass covered. Later ethnographic and archeological information indicates that villages also contained a number of other types of structures. These included grass-covered arbors and semi-subterranean pithouses.

Wichita subsistence focused on corn, beans, and squash, supplemented by local gathering and hunting. One or more extended hunts per year was probably an important means of obtaining food and raw materials for clothing and tools. Wichita village sites are characterized by numerous small to large bell-shaped cache pits. These were used to store food, and eventually they became receptacles for trash.

Much archeological work has been conducted on Great Bend aspect sites. A major focus of this work has been in Rice County and has included the Tobias site (14RC8), C. F. Thompson site (14RC9), Malone site (14RC5), Hayes site (14RC13), a site designated as 14RC306, Crandall site (14RC420), and the Major site (14RC2). Other important Great Bend aspect sites are in neighboring McPherson County, and several seasons of excavation were conducted at the Sharps Creek site (14MP308) near Lindsborg. Considerable work has been conducted in Marion County, with the most substantial excavations conducted at sites 14MN328, 14MN504, 14MN509, and 14MN527. Another major location for Great Bend settlement is in Cowley County, and substantial work has been conducted on these sites as part of highway construction around Arkansas City. The highway right-of-way passed through eight sites: 14CO1, 14CO3, 14CO331, 14CO332, 14CO382, 14CO385, 14CO501, and 14CO1509. These eight sites are in close proximity to each other and are components of an extensive Great Bend settlement focused on the lower Walnut River valley. A large inventory of pottery, stone and bone tools, and stone debitage was recovered. Complete flotation of the fill from hundreds of basin and pit features produced a comprehensive record of floral remains. Very well preserved, stratified remains of a Great Bend village also have been excavated in Pawnee County.

Some artifacts of European origin are found at Great Bend aspect sites, primarily those in Rice County. To a limited degree, European items also are found at Marion County sites. It is obvious by their essentially pure material culture, however, that the Wichita were little affected by contact with Europeans before the Wichita moved from the state in the early eighteenth century. Interestingly, Wichita sites in north-central Oklahoma that date to shortly after the move from Kansas show a material culture much altered by European contact.

Major locations of Great Bend settlement—Rice, McPherson, Marion, Cowley, and Pawnee counties—share a degree of similarity in artifacts and features. They also differ in

significant, if subtle, ways. Differences between the Pawnee County site and the sites to the east include the lack of storage pits and agricultural tools in Pawnee County. This is interpreted as differences in site function; the Pawnee County site is believed to have served a specialized function associated with hunting. Differences between the Rice, Marion, and Cowley county sites focus on pottery characteristics and the rock used to make stone tools. These differences appear to be related to territory, but they also may be related to cultural differences between the areas or to the time they were occupied.

Great Bend aspect sites bridge the prehistoric and historic, but they cannot be traced very far back into prehistory. Candidates for the ancestors of the Wichita exist in southern Kansas with the Pratt and Bluff Creek cultures. Other archeological complexes to the south and southwest of the core area of the Great Bend aspect also show marked similarities in material culture. There are still more questions about the origins of the Great Bend aspect. To help answer them will require more detailed comparative studies.

Dismal River

The Plains Apache are represented in extreme western Kansas as the Dismal River aspect. Permanent Dismal River settlements are documented for Nebraska between 1525 and 1725, and it is believed that these people also lived in Kansas at this time. However, permanent sites have not been documented for Kansas. Sites known in the western part of the state suggest a nomadic rather than a sedentary lifestyle for the Plains Apache. Subsistence probably relied on hunting and gathering, although there was possibility some corn horticulture.

The most important excavations of a Dismal River site in Kansas have been in Scott County. The best information came from site 14SC1, the interpreted location of El Cuartelejo. Historical and archeological research suggests that El Cuartelejo was inhabited by Puebloan refugees from the Southwest and a group of Plains Apache. Excavations at 14SC1 over the past century have revealed evidence of the only known pueblo in Kansas. Dates obtained from Southwestern sherds place this occupation at about 1700. Plains Apache lodges were documented at nearby sites 14SC106 and 14SC111 in the Ladder Creek valley.

Historical Archeology

When the Coronado expedition entered Kansas in 1541, the area was vaulted into the Historic period. Archeology conducted on sites dating after the mid-sixteenth century falls into the domain of historical archeology. Although survey and excavation are conducted in the same fashion as on a prehistoric site, the historical archeologist also has a wide range of documentary and oral historical information to assist in research.

In the centuries since the Coronado expedition, the nature of the historical record for Kansas has changed greatly. Between 1541 and 1820, Europeans and Euro-American explorers, trappers, and traders passed through Kansas. Among the explorers who left written accounts were Coronado (1541), Oñate (1601), de Bourgmond (1724), Trudeau (1794), Lewis and Clark (1804), Pike (1806), and Say (1819). During this period, the residents of Kansas were the indigenous Native American groups such as the Osage, Kansa, Wichita, and Plains Apache. These people did not write their histories, their histories were passed on through an oral tradition. They continued to live as they had, but increasing contact with Europeans and Euro-Americans influenced them in a number of ways.

During the nineteenth century, the nature of the historical record expanded as Euro-Americans settled in Kansas. Through journal accounts, newspapers, books, and an increasing host of civic documents, the written chronicle of Kansas increased. These accounts were not complete or unbiased. Additionally, Indian groups not native to the state arrived. They were relocated from the Great Lakes region and other areas to the east. These people did not record their own history, and their Euro-American neighbors spent relatively little time doing it for them. Further, when Euro-Americans did set down their observations, what was recorded was often biased and reflected a poor understanding of what was being observed.

Other groups are also poorly represented in the written record of the nineteenth century. Often left on the peripheries of historical record are African Americans, both slave and free; many groups of European immigrants; and people of various backgrounds who worked as

miners, on railroad crews, as domestics, or as cattle drovers. Mainstream, literate, affluent Euro-American society of the nineteenth century is itself far from perfectly recorded by written documents. Many aspects of everyday life, perhaps because they were so well known that recording seemed unimportant, are not found detailed in written history.

Starting with the twentieth century, a significant body of data is available through the oral historical record. This is a very important source. It can be used to address a wide range of questions based on the memories of living peoples of any ethnicity or social or economic background. This data is, however, subject to biases based on selective memory and perceptions of cultural reality. For example, modern studies show that perception of contemporary trash disposal practices differ from that documented by objectively and scientifically examining refuse.

The degree to which we can learn of the Historic period of Kansas from oral and written histories vary greatly, depending on the period and the group of people involved. A large quantity and wide diversity of items are typically recovered from Historic-period sites. Many historic artifacts have complete or fragmentary labels revealing contents, product name, craftsman or company, place of manufacture, or patent number. Such artifact assemblages offer an additional line of evidence to investigate issues such as links to trade networks, consumer choices, ethnicity, and socio-economic status. Archeology provides an entirely different source of information about the Historic period and serves to greatly expand the available information.

Based on major trends, the Historic period of Kansas can be subdivided into five parts:

1. Exploration and Contact with Native Kansans, 1541-1820
2. Exploration and Settlement, 1820-1865
3. Rural and Agricultural Dominance, 1865-1900
4. Time of Contrasts, 1900-1939
5. Recent Past, 1939 to the Present

Exploration and Contact with Native Kansans, 1541-1820

In 1541, the area that was to become the state of Kansas was occupied by a number of American Indian groups. They were living a successful lifestyle that relied to varying degrees on agriculture, hunting, and gathering of wild plant foods. These people were the Wichita, the Kansa, the Pawnee, and the Plains Apache. Their lifestyles can be documented with varying degrees of success, but in no cases can they be traced very far into prehistory.

Wichita

Coronado's 1541 expedition documents the Wichita living in large villages of beehive shaped grass covered houses surrounded by agricultural fields. Later ethnographic and archeological information indicates that villages also contained a number of other types of structures including grass-covered arbors and semi-subterranean pithouses.

Wichita subsistence focused on corn, beans, and squash, supplemented by local gathering and hunting. One or more extended hunts per year was probably an important means of obtaining food and raw materials for clothing and tools. While Wichita archeological sites are numerous in south-central Kansas, by the time of intensive Euro-American settlement the Wichita had moved to Oklahoma, where their reservation is located today. As noted earlier, it was after this relocation that the Wichita began to adopt Euro-American material culture in significant amounts.

Kansa

During the early Historic period, the Kansa lived in northeastern Kansas along the Missouri and Kansas rivers. In 1800, the Kansa moved to the vicinity of Manhattan on the Kansas River where they remained until 1830. The Kansa are probably associated with the protohistoric Oneota aspect, a culture represented in Kansas at the Fanning site (14DP1) in Doniphan County. The Oneota aspect was a relatively recent intrusion into the Midwest. Its origins were to the east. As such, the Kansa, along with related groups such as the Osage, Ponca, Quapaw, and Omaha are probably best viewed as relatively recent arrivals to the Plains.

During their tenure in Kansas, the Kansa lived in relatively large villages, made up of circular earthlodge and elongate bark-covered dwellings. Subsistence was based on corn, beans, and squash agriculture. There was localized hunting and gathering, as well as semi-annual bison hunts. Large, subterranean cache pits located throughout the villages stored food for later use.

Archeology associated with the Kansa of this period has been restricted to the Doniphan site, located on the Missouri River, and the Blue Earth Village site (14PO24), located on the Kansas River near Manhattan. The Doniphan site (14DP2) was occupied during the early eighteenth century. It is the only early, documented Kansa village site for which archeological evidence has been found. Work at the Doniphan site has been limited because of the site's apparent poor preservation. Movement of the Missouri River may have destroyed much of it. Information about this site comes mainly from human burials found on the ridge above the village site. Like the Doniphan site, work at Blue Earth Village has been limited because of the site's condition. Most of it has eroded into the Kansas River. Enough work has been done, however, to show that by 1800 the Kansa obtained most durable goods from trade with European or American traders.

Pawnee

Unlike the Kansa, the Pawnee appear to have relatively deep roots in the Central Plains. During the early Historic period, the Pawnee were known to live in north-central Kansas and Nebraska. While direct ancestry is not documented, there is a great amount of similarity between the early Pawnee sites and sites of the Upper Republican and Smoky Hill cultures, both part of the Central Plains tradition.

Like the Kansa, the Pawnee lived in villages with large circular earthlodges. Large bell-shaped cache pits are characteristic of Pawnee villages. The pits stored produce from their corn, beans, and squash agriculture. Semi-annual bison hunts and local hunting and gathering added to the Pawnee diet.

Only two Pawnee village sites are known in Kansas. Both have been investigated. The largest, the Kansas Monument site (14RP1) or Pawnee Indian Village State Historic Site, is

located near the Kansas-Nebraska border along the Republican River in Republic County. The Bogan site (14GE1) is in Geary County and is also located along the Republican River. Although the Bogan site is substantially smaller than the Kansas Monument site, both were fortified and both appear to have been occupied during the early part of the nineteenth century. The Bogan site, however, may have been occupied for a relatively short period of time.

At the point of the initial European *entrada* into Kansas in 1541, the area was occupied by a large population of Wichita and perhaps by the Plains Apache as well. These groups had, however, abandoned the state by the first half of the eighteenth century. The Pawnee also may have been present in the state in 1541, although documented Pawnee sites have not been found that date before the nineteenth century. These Pawnee sites were probably abandoned by about 1830. It is uncertain when the Kansa first moved into the state, but starting in the eighteenth century and lasting until well beyond the close of this period, their presence is well documented.

Those recording the native populations for history were Europeans and Euro-Americans who were largely transient explorers, trappers, and traders. Their importance is best seen in their impact on indigenous Indians whose sites show an increasing reliance on goods traded from Europeans and Euro-Americans. An exception to the pattern of temporary contact is the permanent French settlement of Fort Cavagnolle. It operated during the 1740s and 1750s as a fur-trading outpost. A number of accounts note that it was on the Kansas side of the Missouri River, north of Leavenworth. Intensive search for this site and the Kansa village that was reportedly nearby has failed to find a trace of either, although isolated finds of trade goods from this period have been found in the vicinity.

Exploration and Settlement, 1820-1865

Kansas history between 1820 and 1865 saw significant settlement of emigrant Indians and Americans in the state. Although the once indigenous Pawnee, Wichita, and Plains Apache were no longer permanent residents of Kansas, the Kansa and Osage Indians remained important in the state. During this period and especially the latter part, groups of Plains Indians who led

nomadic lives characterized western Kansas. Especially important were the Kiowa, Comanche, Cheyenne, and Arapaho.

Archeological work has been conducted at two Kansa sites from this period. These are the Blue Earth Village site near Manhattan and the Hard Chief's Village (14SH301) site near Topeka. Just prior to moving to Hard Chief's Village, the Kansa were at Blue Earth Village. Excavations at Blue Earth Village show a Kansa lifestyle that relied heavily on manufactured trade goods. The same could be said of life at Hard Chief's Village, which may now be the best preserved Kansa site in the state. Although a short occupation may be the cause, the artifacts at this 1830s site are notably sparse when compared to those of the Blue Earth Village site.

Resettlement of numerous American Indian groups from the eastern woodlands to eastern Kansas began during the late 1820s and 1830s. Groups represented were the Ottawa, Potawatomi, Sac-Fox, Illinois (Peoria, Wea, Kaskaskia, Piankeshaw), Cherokee, Chippewa, Iowa, Miami, Munsee, Delaware, Shawnee, Otoe, Quapaw, Kickapoo, Osage, and Wyandot. In most cases, these groups lived in Kansas for only a short time before they were moved elsewhere. Most were removed by about 1870. Several sites associated with these groups have been the subjects of archeological excavation. Included is Shawnee mill (14JO365), a saw and grist mill constructed for the Shawnee Indians in 1836-1837; a burial (14DP26) from the 1840 to 1860 period and thought to be that of a Sac Indian; and a trash pit (14SH315) that was probably associated with a Potawatomi settlement dating from about 1850. Another site, designated as 14JO340, was originally thought to be the location of the Shawnee Indian Council House. Excavation, however, has dated the site as a much later American settlement, probably a farmstead.

Along with the emigrant Indians came Americans who sought to trade with and missionize the Indians. Three sites serving in such capacities have been excavated. These are Wea Mission (14MM322) near Paola, Jotham Meeker's farmstead (14FR308) at the Ottawa Baptist Mission in Franklin County, and the Pottawatomie Baptist Mission Training School (14SH325) near present-day Topeka. The Wea Mission operated during the 1830s, the Meeker farm from 1844 to about 1860, and the Pottawatomie Mission from 1849 to 1861.

Commerce and transcontinental migration resulted in a significant level of activity in Kansas. Much activity centered on a number of major trails through Kansas. Perhaps the most significant of these was the Santa Fe Trail, which became a major trade route in the 1820s. Also important were trails such as Oregon-California Trail routes, a variety of trails to Denver, and commercial livestock trails. Commercial settlements and towns in the eastern part of the state—as well as trading posts, campsites, and military outposts—grew up along the trails.

Excavated sites associated with overland commerce and migration are relatively numerous. Included are Fort Leavenworth (first called Cantonment Leavenworth), established along the Missouri River in 1827; Fort Scott (14BO302), in operation between 1842 and 1853 and extensively investigated in conjunction with restoration by the National Park Service; Santa Fe Trail-related sites in Osage County, including McGee-Harris Stage Station (14OS399), 110-Mile Creek Crossing, Havana Stage Station (14OS1301), Dragoon Creek Crossing (14OS1303), and Soldier Creek Crossing (14OS1302), and in Marion County, the Cottonwood Creek Crossing and Campground (14MN1309) near Durham; Fort Riley, established in 1853 and located in Geary County; Hollenberg Station (14WH316), associated with nearby Oregon-California Trail Cottonwood Creek Crossing (14WH333) and Campground (14WH334) in the late 1850s and with the Pony Express in 1860; Allison's Ranch, a trader's store from 1855 to 1868, and Fort Zarah (14BT301) at the Walnut Creek crossing of the Santa Fe Trail from 1864 to 1867; Fort Ellsworth (14EW26), in operation from 1864 to 1867 to protect the Smoky Hill Trail and the Fort Zarah Road; the site of the 1854 to 1858 government bridge (14EW105) crossing the Fort Zarah Road over the Smoky Hill River in the vicinity of Fort Ellsworth; and a section of the Smoky Hill Trail or Denver Express Road, in operation from the 1850s until about 1870. Investigations at most of these sites have been limited to fairly minimal testing, but large-scale excavations are included as well.

With Kansas Territory established in 1854 and the admission of Kansas to the Union in 1861, American settlement of the eastern third of the state began in earnest. Settlement was characterized by the establishment of towns, farms, schools, and roads, and by the completion of official land surveys. Many of the places established during the territorial period were short-lived because of competition or instability of the times. However, with statehood and the end of

the Civil War, a period of greater stability began. Settlements from this period are relatively common on the landscape. They consist of abandoned and active towns and farms, as well as commercial and industrial enterprises.

Sites associated with the territorial and early statehood periods are fairly numerous. One of the most extensive historical archeology projects conducted in the state falls in this period, and involves excavation of the Quindaro townsite (14WY314). Quindaro existed between 1856 and the very early 1860s. Two other townsites established during this period also have been investigated, although only at the testing level. These are Chelsea (14BU1012), in existence from 1858 to 1870, and the Marmaton townsite (14BO4), occupied between 1858 and 1882. Extensive excavations were conducted at Fort Larned (in operation between 1859 and 1878) in conjunction with its restoration by the National Park Service. There were also investigations of Camp Kirwin (14PH6), in use in 1865 to protect government land surveyors; Fort Bend (14BU1009), a civilian fort garrisoned in 1861 and 1862; the first site of the Topeka Cemetery (14SH338), in use between 1855 and 1859; the John Ritchie house (14SH370), an 1856 Topeka residence; the Riggs house, burned in 1863 during Quantrill's raid on Lawrence; and the Guest house, a Lawrence dwelling constructed in 1857.

Rural and Agricultural Dominance, 1865-1900

Between the close of the Civil War in 1865 and the turn of the century, Kansas was transformed from an undeveloped frontier into a state with a diversified economy. In 1865, population was concentrated in the eastern third of the state where many American Indian groups still resided and where American settlement tied to Missouri River and overland commerce had developed since 1854. In the late 1860s and 1870s, most of the emigrant Indian groups were relocated to reservations in Oklahoma. This opened more land for settlement in Kansas. Starting in the late 1860s, railroad construction in Kansas began in earnest. Railroads were a significant force in deciding the location of towns throughout Kansas and in promoting agricultural settlement in the western part of the state. A site representing this era, the Union Pacific Railroad telegrapher's house (14WC306) in Wallace, has been tested.

By 1870, settlement covered roughly the eastern half of the state. By 1890, the entire state was settled. Settlement in Kansas during these years, and particularly in the western half of the state between about 1870 and 1890, was partly a response to land availability and partly a response to promotional efforts of the railroads and of local town developers. Railroads were responsible for attracting many European immigrants to Kansas. Many times, immigrants represented the population of an entire village from their home country. Group immigration during the 1870s and 1880s created distinctive ethnic pockets throughout Kansas. Particularly in the state's western half, German-Russian Mennonites and Roman Catholics, Swedes, and Czechoslovaks settled in significant numbers.

The transition of the western part of the state from a frontier was not without hardship, part of it coming from conflict with disgruntled Plains Indians. An Indian war starting in 1864 led to the establishment of Forts Dodge (14FD315), Harker (14EW310), Hays (14EL301), and Wallace (14WC303) in western Kansas. These supplemented Forts Leavenworth, Riley, Larned, and Zarah, which were already established. Extensive archeological excavations have been conducted at Ellis County's Fort Hays in conjunction with its interpretative development by the Kansas State Historical Society. The Historical Society also conducted excavations at forts Dodge, Harker, and Wallace.

In 1867 and 1868, several hundred settlers were killed by Indians, and a number of military and civilian expeditions were mounted to punish those guilty of the depredations. A Cheyenne village site (14NS403), associated with the Hancock punitive expedition of 1867, has been excavated. This village site was burned by Hancock's troops after it was abandoned. Hostilities occurred again in 1877 when a large group of dissatisfied Cheyenne left their Oklahoma reservation and crossed Kansas on their way north, killing many settlers along the way.

From 1865 to 1900, the state's economy focused on agriculture. It was significantly tied to wheat agriculture and to livestock production and processing. During the first two decades of this period (1865 to 1885), the state became a shipment point for cattle driven from Texas to the railheads in central and western Kansas. Several ranches in central Kansas associated with this cattle economy have been tested, including the site of the Black ranch (14EW119), established

by 1878, and the Millett ranch (14EW152), established by 1879. Also tested were the Faris Caves (14EW7) and the Farisville Post Office (14EW103), contemporary sites located in the same general area as the Black and Millett ranches. Archeological investigations have been carried out at the Cottonwood Ranch (14SD327), a sheep ranch in Sheridan County, established by Englishman John Fenton Pratt in 1885.

Other sites associated with this period's agricultural economy have been the subjects of test excavations. These sites include the Steele house in Douglas County; dozens of farmsteads of varying ages in Butler, Chautauqua, Cowley, Greenwood, Montgomery, Republic, and Wilson counties; a corncrib at the Huse farmstead (14RY603); and a late nineteenth-century dwelling (14BO6) in Bourbon County. The rural agricultural community of New Chelsea (14BU1007) in Butler County, chartered in 1870 and abandoned by 1900, received test excavations, and the blacksmith shop at this site was intensively excavated. Intensive excavations also have been conducted at the Mahaffie farmstead (14JO356), established in 1858 and in use during the balance of the century.

A number of commercial sites from this time period have been investigated: a restaurant (14RY382), blacksmith shop (14RY384), and two residences (14RY365 and 14RY393) in Manhattan; the Morehead townsite (14LT378 and 14NO397), straddling the Labette-Neosho county line; and a saw mill and canning factory in Leavenworth (14LV389). The boom that characterized economic development and new settlement in Kansas following the Civil War ceased by 1890, and an economy supported by overextended investment collapsed. This had the greatest impact on the western half of the state where the marginal environment quickly proved to be incapable of supporting the population level there. The economic downturn encouraged development of industry and mining for oil, gas, coal, and salt.

Time of Contrasts, 1900-1939

Between the turn of the century and the start of World War II, Kansas agriculture continued to develop. However, there were major changes in the industrial sector and in improved transportation. Agriculture became increasingly mechanized and diversified, and the

automobile began to become a dominant means of transportation for people and goods. Industrial expansion in southeastern Kansas occurred in mining zinc, coal, and oil, and in production of cement, glass, and brick. In central Kansas, salt production from mines continued to grow. Production of oil and natural gas eventually spread across southern Kansas. Survey and test excavations were conducted at the Midian townsite (14BU381), an oil field town that developed during the early decades of the twentieth century.

International events that had a significant effect on Kansas during this period were World War I and the Great Depression. The Dust Bowl drought of the 1930s, although affecting primarily the southern and central Great Plains, had a significant impact on western Kansas. To date, the only site of this period to be excavated is 14MT306, a group of steam tractors that was used for stream bank stabilization in Morton County sometime between 1935 and 1942. Archival research was accomplished on the Tunnerville Work Center (14MT305), a late 1930s Soil Conservation Service land utilization project work camp. In addition, a number of tested or excavated sites established prior to 1900 were occupied into the twentieth century.

Historic-period sites have their own features and artifact inventories. Artifacts can include hunting rifle cartridges, covered wagon parts, china doll pieces, factory-produced crockery sherds, or window glass. Features may be the remains of a chimney, a stone floor, a drainage trench, or a rock-lined well. These artifacts and features, like those from the prehistoric era, help us understand how people lived and worked at a particular time.

Recent Past, 1939-Present

The period between 1939 and the present saw many major changes and the involvement of Kansas in events such as World War II. Events and processes of this period have had varying impact on the archeological record of Kansas. One of this period's major trends is the decline in rural settlement. Small towns and farmsteads have lost population or have been abandoned altogether. In turn, architectural preservation in these areas has been affected. Large-scale land leveling and agricultural terracing has also had a negative impact on site preservation. Other trends of major importance include the continuing transformation of transportation. Railroad

transportation has declined—particularly for passengers. At the same time, the use of highways and airways has risen.

Major events such as World War II added to the diversity of archeological sites. One type—never before present in Kansas—are the prisoner of war camps established throughout Kansas during World War II. The Cunningham Helium Plant (14KM317), a World War II-era site, was the subject of archival research. The state also received a portion of an ambitious federal reservoir construction program. This significantly changed the landscape and added many new resource types. Kanopolis Reservoir, the first such reservoir, was begun in 1940.

To date, no sites dating from the 1940s to the present have been tested or excavated in Kansas, because sites less than 50 years old generally are too recent to be considered for the National Register of Historic Places. This, combined with the lack of archeologists with research interests in this period, has contributed to a lack of excavated materials.

Other Types of Sites

The archeological record for Kansas contains several site types that are not easily assigned to specific cultures. Included are lithic quarries and collection stations, rockshelters, tipi rings, stone alignments, earthen constructions, petroglyph and pictograph sites, and some human burial locations. Too, specific cultural information is not yet available for many of the camp and village sites that have been found. Sites often are recognized by the presence of artifacts on modern ground surfaces, but we need particularly informative artifacts—like pottery or projectile points—to assign a reliable cultural identification to specific sites. Archeological sites from the Historic period represent an even more diverse array of special function sites. These include commercial sites, such as a 1850s ranch and trading post that was located just east of modern Great Bend, or industrial sites, such as a brick factory. In addition, some sites from the Historic period are tied to specific short-term events. One example is the Mine Creek Civil War Battlefield site in Linn County. Military posts, such as Forts Scott, Leavenworth, and Hays, are another category of special function historic site.

Kansas is well supplied with the raw materials for making stone tools and arrow points. Aboriginal quarries and collecting stations for obtaining hard, brittle rocks for flintknapping are known in several areas in Kansas. These special function sites are often accompanied by extensive workshop areas where prehistoric and early historic peoples performed the initial shaping of stone tools. The best known of Kansas materials are the various cherts of the Flint Hills Upland. Quarry sites are known from at least Cowley County on the south to Pottawatomie County in the north. Many collecting locales have been identified where the chert could be obtained from ground surfaces. Cherts found in the Flint Hills are typically buff to blue-gray in color and occur in limestone deposits where the limestone has selectively been replaced by chert. Several Permian limestones in the Flint Hills contain chert in appreciable quantities; the most widely used are Florence, Threemile, and Schroyer cherts.

In northwestern Kansas and southwestern Nebraska, another major source of knappable stone is Smoky Hill Jasper or Niobrarite. This is a silicified chalk or chalky marl found from Gove and Trego counties up into Nebraska. While this source has a tremendous color range—black, red, white, green, and brown varieties—the brown-colored stone was the most widely used by prehistoric peoples. Some quarries for this stone are known, but rather than quarrying, people more commonly collected stone from eroding material. Both jasper and the Permian-age cherts were used widely during all known cultural periods and by diverse peoples. Quarries and collection stations generally were used for only short periods, and the nature of activities carried on at these sites was mainly collection and only initial shaping of tools. This means that it is often impossible to associate quarries with specific archeological cultures.

In eastern Kansas, Plattsmouth, Winterset, and Westerville cherts of Pennsylvanian age were collected and utilized by early peoples. Similarly, even more ancient cherts of Mississippian age were collected and quarried in extreme southeastern Kansas and adjacent portions of Arkansas, Missouri, and Oklahoma. That chert, called Tahlequah, is white in color and somewhat grainy in texture.

The tough and modest quality cherts of Kansas can be dramatically improved by first heating them under controlled conditions. This process, heat treatment, was known in Kansas since Paleoindian times, but not all people heat treated the rock. One of the earliest recordings of

a prehistoric heat-treatment feature was made by amateur archeologists J. Mett Shippee and Charles Shewey at a site near Tuttle Creek Reservoir in 1963. They found a prehistoric pit that had a layer of ashes on the bottom and a layer of chert cores and flakes overlying it. The remainder of the pit had dirt and limestone. Shippee suggested that this was a pit for intentionally heating chert or flint as a preparation for flintknapping. Modern flintknapping experiments have shown that this pretreatment of the stone can make a stone of poor quality into a very workable material.

Many other cherts and flints, some of local derivation and some trade materials, were used by prehistoric and early historic inhabitants of Kansas. Some of the distinctive materials, like Alibates agatized dolomite from Texas and obsidian from the Rocky Mountains, give clear indications of contact or travel to other areas. In addition, at least two silicified sandstone sources, one in central Kansas and one in southwest Kansas, were used by prehistoric knappers to make tough and durable tools that lacked the extremely sharp edges of chert, flint, and obsidian tools.

Several rockshelters have been investigated in southeastern Kansas and at least one in central Kansas. Rockshelters are shallow cave-like depressions located at the base of bluffs or vertical sandstone or limestone outcrops. They are natural geological features that were created by either wind or water erosion. They provided ready-made temporary shelters for a variety of prehistoric peoples in Kansas. Some of the investigated shelters offer layered evidence of successive short-term use.

Surviving tipi ring sites have so far been observed only in extreme western Kansas. These are a relatively common site type on the northwestern plains of North America. Sites are identified by the rocks used as weights around the tipi's edge to hold down the cover. This was a common practice for such nomadic horse-using groups as the Cheyenne and Comanche during the 1800s, and it is likely that most tipi ring sites date from the relatively recent past when horses gave increased mobility to bison hunters of the High Plains. It is suspected that the large tipis of historic times are directly related to the efficient use of horses for transportation. A large tipi required 20 or so poles, each approximately 25 feet long. This would have been an extreme

burden for people to transport if they were traveling only on foot or had only dogs as pack animals.

Kansas contains numerous carved rock (petroglyph) sites and far fewer painted rock (pictograph) sites. Both belong to a category of sites that contains rock art, a variety of pictures and designs carved or painted on rock. Both the function and age of these sites are open to question. Some depictions are obviously of animals and humans. Others appear to be portrayals of mythological creatures. Objects, such as tipis and bow and arrows, are sometimes represented. Other rock art contains seemingly meaningless geometric shapes. We would presume that all or most of the rock art from Kansas had symbolic meaning for the people who produced it, but we are unsure which specific groups were responsible. Depictions of horses and cows on some petroglyph panels clearly indicate a recent origin. Too, the soft nature of most sandstone and limestone cliffs where the glyphs occur indicates that most of the Kansas rock art is of relatively recent origin. At least one stone alignment of possible prehistoric or early historic age is known from Kansas. This unique site, the Penokee Stone Man site in Graham County, consists of an outline of a human male figure done with small rocks. It is approximately 60 feet long and is situated on a high, prominent hilltop. A litter of waste flakes from knapping of jasper is also on the hilltop. It is possible that the figure was made by the group that occupied this hilltop in prehistoric times. A unique, shallow and sinuous trench was found on a hilltop in Rice County within an area where several large Quivira or early Wichita villages were located. The feature has been interpreted to be a snake intaglio, a snake-like figure produced by excavating a shallow trench.

Several historic, and possibly prehistoric, trails are known in Kansas. The Santa Fe Trail and Oregon Trail routes, both oriented basically east to west, are the best known. In some places, Santa Fe Trail and Oregon Trail ruts are still visible. There were, however, many other trails, including some that were oriented north to south. Some archeologists believe that rock cairns, as well as occupation site placement, provide evidence for a number of early trail locations. The diversity of known site types and for those that have not yet been recognized is considerable. For example, early land surveys started in Kansas in the 1820s, and some of the early surveyors reportedly marked certain important survey points with large rock cairns that they laboriously

assembled. It is likely that some of these still exist. They should be treated like other archeological sites since, aside from the fact that they are already well past the 50-year guideline for National Register of Historic Places nomination, it is necessary to plot their locations so that future researchers do not confuse them with earlier prehistoric rock cairns and mounds.

Burial Sites

Archeologists sometimes encounter physical remains of the very people that they study through artifacts and sites. There typically are separate cemetery or burial areas, but human remains sometimes are found within a camp or village site. Burial sites are less commonly encountered than most people might suppose. However, when they are discovered and studied, they yield unique information about early people. This information is of two basic types: 1) the bones and other human tissue and 2) cultural information that accompanies these bones. Actual study of human bones and other physical evidence is usually conducted by a physical anthropologist who specializes in studies of human biology. All archeologists, however, are trained to properly uncover human burials, make initial studies, document burial position, study accompanying grave goods, and describe the cultural context within which the human burial occurred.

Study of human bones is a specialized and highly technical field. It provides historians and archeologists with actual information about the appearance and health of past human populations. It should be stressed that, for prehistoric populations, we have no other way of gathering this information. Specialists can, with a high degree of reliability, study human bones and discern such diverse information as age, sex, race, height, facial appearance, musculature, diet, cause of death, and traumas during life ranging from broken bones to periods of starvation. Specialists can sometimes determine blood type, genetic relationship to other human remains from the same site, and a host of other pieces of information. When a population rather than an individual is represented, as in a cemetery or mass grave, it may be possible to gather enough information to compare one human group with another.

Cultural information that accompanies human burials is considered just as scientifically important as artifacts and features. Here the archeologist deals with location of burial place, burial type, burial position, relationship to other burials, evidence for cremation, grave goods, and later intrusions into the burial area. Some cultures buried their dead in prominent locations, such as on hilltops overlooking valleys. Others buried their dead inconspicuously at the edge of villages or camps. One popular burial pattern about 2,000 years ago was to place the dead in or under rock constructed mounds that were usually located on very visible hilltops. These burial mounds often contain evidence of several individuals, and cremation was a common practice. Some groups placed their dead first in trees or on scaffolds and then retrieved the bones later for reinterment in burial areas. Prehistoric people clearly did not use specially prepared boxes for burial, but they may have wrapped the bodies in robes. In some cases, the dead were buried in clothing.

Burial positions recorded for Kansas range from seated burials to extended burials where the body was laid out with legs and arms straight and horizontal to the ground. Perhaps the most common prehistoric pattern for burials is a flexed or semi-flexed position, with legs drawn up and arms folded over the chest. In some cases, it seems that the dead were buried with the tools and personal property that they had while alive. It is also likely that specially prepared burial goods were interred with them. All special preparations of the dead—burial location, burial type, accompanying grave items—are interpreted by archeologists to be ritual or religious behavior that provides clues to a group's culture.

Excavation of human burials by archeologists became a controversial issue during the last decades of the twentieth century. Some American Indian groups and others have protested such excavations, accusing archeologists of desecration. The truth is that the majority of archeologists see ancient human burial areas as places that contain the kinds of information that usually cannot be learned in any way other than by excavation. At the same time, most of us are sensitive to the religious beliefs of others. We try not to offend these beliefs by our actions. In Kansas, archeologists and anthropologists worked closely with American Indian representatives and others to draft a state law concerning treatment of unmarked human burials found in the state. This law, enacted in 1989, set up an advisory burial board and a consistent set of guidelines

to follow when it is clear that the human remains are not modern. The law, while allowing for sufficient study to establish possible kinship relations, ensures that most unmarked burial sites will either be left in an undisturbed state or, if removal of the remains is necessary, these remains will be reburied. This law applies to all lands in Kansas, except for lands under the direct control of the federal government or a tribal nation. It applies equally to all unmarked human burials. It was not written with any specific ethnic group in mind. A similar federal law governs finds of unmarked human burials on federal and tribal lands in Kansas.

Cultural Continuity and Change

People have lived in Kansas for at least the past 12,000 years, developing diverse and efficient ways to use the environment and provide for their basic needs and wants. Archeology enables us to look at this diversity and to speculate about the reasons for it and the changes that occurred through time. Some of this diversity relates to the environments in Kansas. For example, the state's extreme western portion obviously holds less potential for farming techniques than does the relatively better watered eastern part. Thus, it is not surprising that hunting and gathering cultures dominated the High Plains well into historic times. Changes in technology, subsistence practices, and settlement patterns through time were likely stimulated both by innovations of the resident cultures and by diffusion of ideas and traits from other areas in North and Central America. Thus, development of localized and highly efficient gathering and hunting communities during the Archaic may be an indigenous development, while the adoption of maize, bean, and squash agriculture was clearly a result of contact with established farming cultures from other areas.

Evidence for the foods that people ate, their methods for obtaining this food, and their ways of preparing food are commonly found at archeological sites. Studies of subsistence, the ways that people satisfied the minimum food and shelter requirements to support life, are central to archeological studies. The Kansas environment offered many possibilities to prehistoric and historic cultures for attaining the needed subsistence. Different cultures used the environment in different ways. When the environment changed, so did the way people adapted. Plant and animal

resources available to Paleoindian peoples at the close of the Pleistocene were certainly different than those available in the post-Pleistocene period. Changes in technology also had considerable impact on how people met their dietary and shelter requirements. For example, efficient and portable containers (pottery vessels) were evidently first used in Kansas some 2,000 years ago. Their use correlates with a shift from hunting and gathering practices to agriculture. They reflect one way in which lifestyles changed and adapted over time.

Archeology teaches us much about the past. It can teach us a great deal more. Through archeological research, we learn how people in Kansas have lived and how their lives have changed over time. We learn about the physical environment and the cultures of various peoples, as well as how numerous changes marked peoples' lives. Studying both the prehistoric and historic past offers an opportunity to make informed decisions for preserving the archeological heritage of Kansas.

Glossary

Archaic period

The second archeological period for peoples in Kansas, beginning about 8,000 years ago and ending A.D. 1.

Archeologist

A person who studies past human lifeways by collecting information about structural remains, other features, and objects in a proper scientific way and analyzing and interpreting that information in light of existing scientific theories and methods.

Archeology

(Also spelled archaeology) Scientific study of prehistoric and historic cultures through systematic recovery and interpretation of material remains.

Artifact

A general term for tools, utensils, and other objects produced or shaped by human workmanship.

Ceramic period

The third archeological period for peoples in Kansas, beginning about 2,000 years ago and ending in 1541 when the Historic period began.

Complex

Any recognized prehistoric culture with distinctive traits exhibited in its material remains.

Culture

All the patterns of living created by humans and passed from one generation to another.

Excavation

Removal of soil to expose artifacts, features, or buried human remains.

Feature

Evidence of human activity that is not portable, such as a hearth, storage pit, grave, or a stone foundation.

Historic period

In Kansas this began in 1541 when the first Europeans entered Kansas, recording in written form their observations.

National Register of Historic Places

A list, kept by the National Park Service, of prehistoric and historic archeological sites and structures deemed to be significant and worthy of intense investigation and/or preservation.

Paleoindian period

The first archeological period, beginning at least 12,000 years ago and dating from approximately 9500 B.C. in Kansas.

Phase

Archeological sites in a specific geographic area with similar radiocarbon dates.

Pleistocene

Geologic time period, spanning from 2,000,000 to 20,000 years ago and encompassing the last ice age.

Prehistoric

Period of native habitation prior to European contact and written history, dating approximately from 9500 B.C. to A.D. 1500 in Kansas.

Radiocarbon

All living things accumulate the radioactive isotope Carbon-14, but at death Carbon-14 begins to decay. For example, the amount of Carbon-14 remaining in a piece of wood charcoal at a prehistoric site can tell approximately when the tree was cut.

Site

A place where people lived and/or worked.

Site survey

Inspection of an area to determine if there is evidence of a site.

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