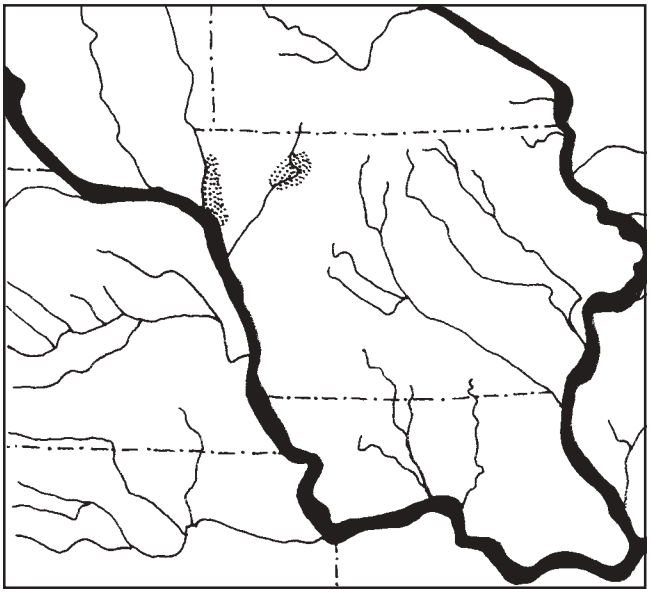
OFFICE OF THE STATE ARCHAEOLOGIST
EDUCATIONAL SERIES 5

MILL CREEK

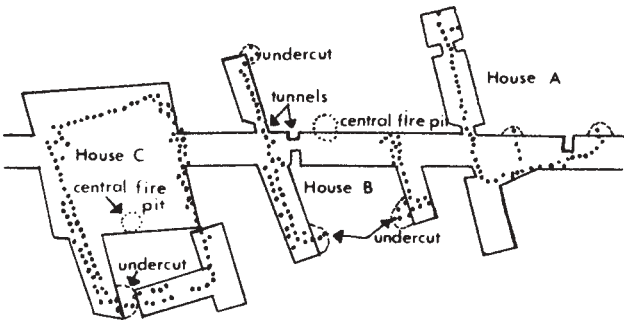
A THOUSAND YEARS AGO sedentary farming communities were established along the Missouri River and its tributaries in northwestern Iowa, South Dakota, and southern North Dakota. Archaeologists group these sites into what is called the Middle Missouri tradition. The Iowa sites of this tradition make up the Mill Creek culture. Mill Creek sites occur on terraces above the Big Sioux River and its tributary Broken Kettle Creek in Plymouth County, and along the Little Sioux River and its major tributaries Mill Creek, Brooke Creek, and Waterman Creek in Cherokee, O'Brien, and Buena Vista counties.



Distribution of Mill Creek sites in northwest Iowa.

Mill Creek sites often consist of large mounds, sometimes 10–12 feet deep, which may extend for as much an acre. These mounds have formed as a result of the accumulation of village refuse and the construction and eventual disintegration of mud walled houses. In some cases, the remains of as many as three houses have been found superimposed over one another.

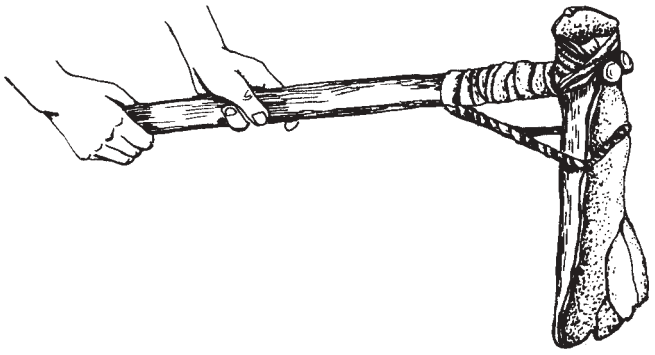
Evidence from the Kimball site in Plymouth County suggests that some Mill Creek houses were arranged in an orderly row. At other sites, such as Chan-ya-ta in Buena Vista County, a more haphazard arrangement is indicated. Each house was constructed within a semi-subterranean pit and had an extended entryway at one end. Vertical timber posts were connected with a latticework (wattle) of small branches that was plastered with grass-tempered mud (daub) to form the walls. We are not sure of the arrangement of the timber posts supporting the roof, but it may have included two rows of posts running along the length of the house on either side of the fireplace.



Mill Creek house plans recovered at the Kimball site.

As in contemporary Plains village houses, the floors of Mill Creek structures were dotted with large basin and bell-shaped storage pits (cache pits) designed to store surplus food and other items. Cache pits also occur outside of houses. We know from historical accounts of people like the Mandan and Hidatsa, that rodents would sometimes disturb these pits or their contents would rot, and they would be emptied. Since it was dangerous to have a large, open pit on the house floor, the inhabitants would quickly fill them with rubbish—broken pottery, tools, and garbage—and a cover. These are the kinds of remains the archaeologist finds in the pits when they are excavated.

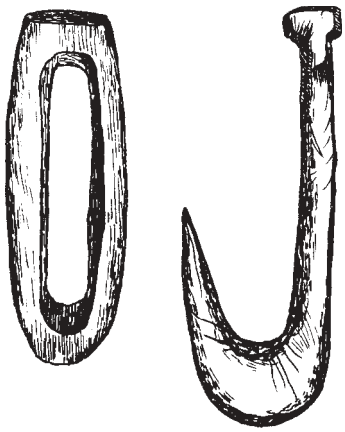
The prolific number of bone tools, pottery, and charred plant remains found at Mill Creek sites suggests that these people were successful horticulturists who maintained garden plots of corn, beans, squash, pumpkin, and sunflower. The prairie sod of the Midwest is characterized by grasses that have a tough, thick root system that is almost impossible to cultivate without the use of the modern steel plow. Thus, prior to European settlement, Native American horticulturists generally farmed the loose, rich, river bottomland using bone hoes made from the scapula (shoulder blade) or skull of large mammals and bone or wooden digging sticks. These



Scapula hoes may have been hafted to a forked shaft in a manner similar to those of the Hidatsa.

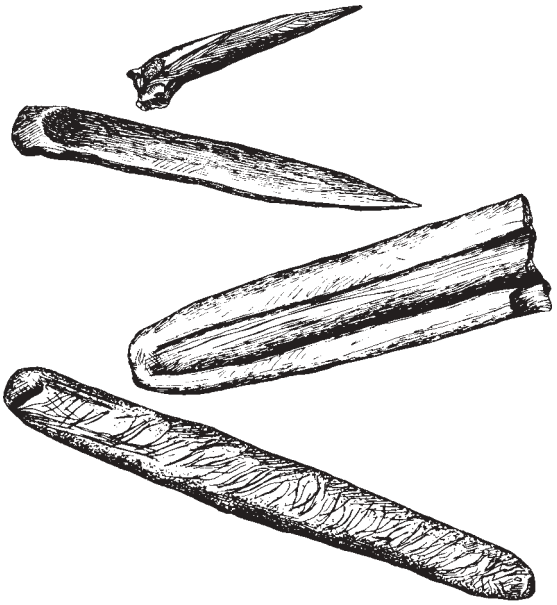
hoes are a common item in Mill Creek sites and were most frequently manufactured from bison scapula. The scapula was also used to make a blunt-ended knife that had a straight edge on one side and a convex-concave edge on the other. This was probably used in cutting garden produce such as squash, as were similar knives in historic times. Recent research at the Litka site along Waterman Creek has provided evidence of a ridged field or raised garden bed on a terrace above the creek. Ridged fields may have provided an alternative to floodplain gardening, insuring a crop during those years when the bottomland garden failed.

The presence of an abundant bone tool industry points to hunting as another important activity in the Mill Creek economy. According to the evidence at some sites, Mill Creek people probably abandoned their village at certain times of the year to hunt. While individuals took smaller game, fish, and birds throughout the year, bison were most likely hunted communally at specific times. For instance, once crops were planted in the early summer, a communal bison hunt could take place with most of the able-bodied population participating. Some members would probably stay home to take care of the crops, the aged, and the very young children, but most would be out on the hunt. A second bison hunt may have taken place in the fall. Animals would be killed with bow and small, side-notched projectile points. Butchering probably occurred at the kill site, and certain chunks of meat were brought back to the village to be dried and stored for the winter ahead. We infer this practice from the high percentage of certain bone elements found in the village sites and the absence of others. These missing bones probably represent parts of the animal processed or eaten immediately after the kill and left at the butchering spot.



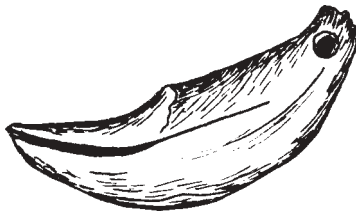
Fishhooks are believed to have been manufactured from bone "blanks."

While we assume that many of the animal bones found at an archaeological site reflect the diet of prehistoric people, others were utilized for additional purposes. The bones of mammals, fish, and birds were made into a wide variety of items. Hide grainers, shaft straighteners, hoes, knives, sickles, and flaking tools were all utilitarian implements manufactured from the bone of bison, elk, and deer. Mill Creek peoples caught large catfish using bone fishhooks. These hooks had a bulbous end on their shaft which making it easier to attach them to a line. Fine bone needles and pointed awls of bison or bird bone or the dorsal spine of drum fish allowed Mill Creek people to sew skins and work basket fibers. These skins and baskets were probably decorated with porcupine quills flattened with spatulate pieces of bone. *Leptoxis* shell and conch shell beads, shell pendants, carved bone pins, and a variety of teeth including those of bear, dog, and beaver were other decorative items which Mill Creek people acquired as byproducts of hunting and through trade.



Mill Creek sites are characterized by a wide variety of bone implements including (from top): a fish spine awl, split mammal bone awl, flesher, and quill flattener.

In addition to bone tools and decorative ornaments, the skins and feathers of animals were incorporated within ceremonial items. The case of birds is a particularly interesting one. We know from ethnographic accounts of historic Plains groups, such as the Osage, Omaha, and Arikara, that medicine bundles composed of bird skin wrappings filled with sacred objects were used on ceremonial occasions. Stuffed bird skins also served as personal fetishes believed to bring good luck to their owners. In order to give some form to the

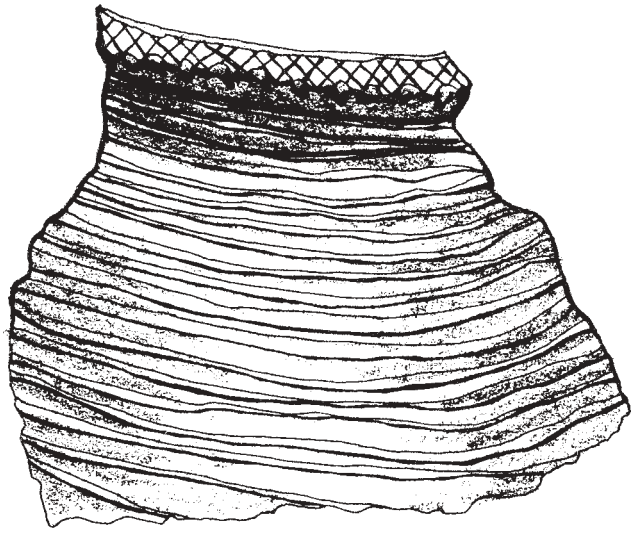


A bear tooth pendant.

bundle, the skull and bones of the wing and feet would be left attached to the skin. Although we are not certain of the existence of these bird bundles in prehistoric times, the abundance of bird bones from the feet, wing, and skull found together in an archaeological site strongly suggests their existence.

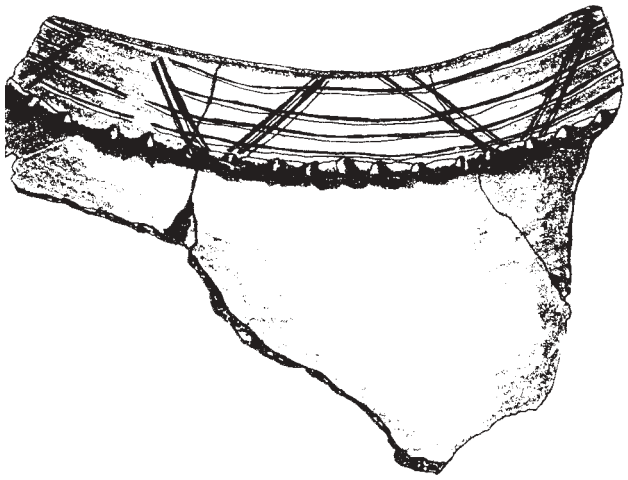
Other ceremonial or decorative items manufactured from birds, such as headdresses, claws, and wing or tail fans, are also indicated by archaeological findings. At the Brewster and Phipps sites in Cherokee County, the lower wing and foot bones of raptorial birds, hawks, eagles, and falcons, were particularly abundant. This suggests that Mill Creek people were hunting or trapping such birds not necessarily for food but to be used in the manufacture of decorative and ceremonial objects.

The bones of animals utilized by Mill Creek people in Iowa in some cases represent species, like the passenger pigeon, which have since become extinct or are no longer native to northwestern Iowa. At the Brewster site and the Broken Kettle site in Plymouth County, the remains of the river redhorse, a type of sucker, were recovered. As this fish has not been reported in Iowa since the turn of the century, and as it is a species which prefers clear stream conditions, we assume that the silty nature of some of our modern streams has resulted in its disappearance from the state.



Mitchell Modified Lip.

Mill Creek potters were equally skillful, manufacturing a wide variety of vessels including bowls, flat-bottom rectangular pans, seed jars, wide-necked bottles, hooded water bottles, jars, and ollas (wide-mouthed water jars). The majority of the pottery has been tempered with crushed granite or sand, although pulverized clamshell occasionally occurs in pieces of trade ware. The surface of the pot almost always has been smoothed, and decoration is found on the lip, rim, or shoulder area. Decoration includes incised or excised patterns, modeling, red slipping (where a liquid mixture of water and colored clay is applied to the pot before firing), and black paint. Design motifs are usually geometric patterns like triangles or diamonds. More distinct motifs include the so-called running deer and weeping eye. Some of the pots have loop handles or effigy handles representing small animals or birds.

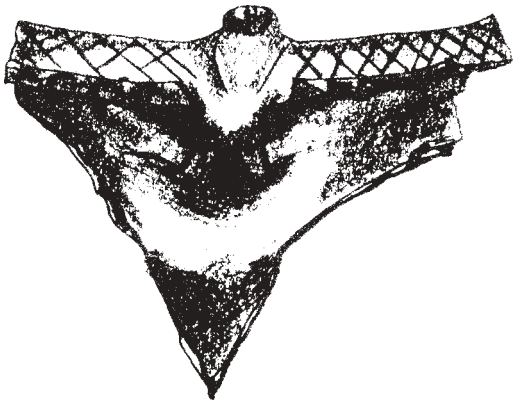


Foreman Incised pottery.

The origin of Mill Creek has been a puzzle to archaeologists for some time. It used to be thought that Mississippian people from the urban center of Cahokia in Illinois had migrated to Iowa and become the ancestors of Mill Creek. There are a number of items found at Mill Creek sites which suggest connections with Cahokia. Earspools (pulley-shaped stone or bone earrings), chunky stones (discoidal stones probably used in athletic games), shell pendants, scalloped-edge shell gorgets, the use of shell temper, *Leptoxis* shell beads from the southern U.S., and marine shell traded from the Gulf of Mexico are common to Mill Creek sites and to those in and around Cahokia. However, all of these items could have been acquired as a result of trade or the diffusion of ideas. Long-distance contact along major rivers such as the Missouri, Des Moines, and Mississippi, or overland along well-known

Ceramic effigy heads of human and animal form often decorate the rims of Mill Creek pottery.

trails could explain the introduction of these items to Iowa. The Hartley Fort site in the northeast corner of Iowa contained both Mill Creek and Mississippian pottery, suggesting that it was a point of contact between these two distant areas.



Mitchell Modified Lip with effigy handle.

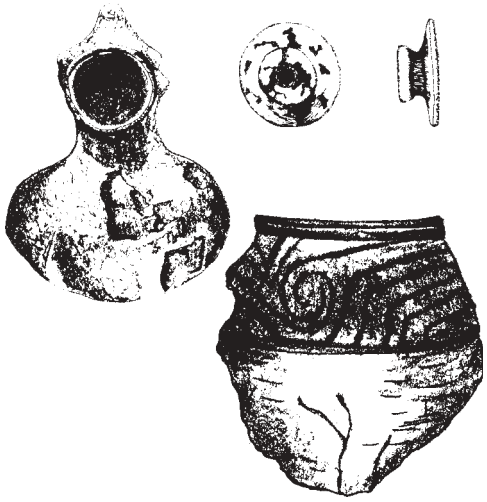
Most archaeologists today believe that Mill Creek represents a local development from Great Oasis which was influenced by other cultures in Iowa and neighboring states, such as late Woodland, the James River phase sites of South Dakota, and Mississippian.

While Mill Creek people may have traded peacefully with other groups, there is reason to believe that not all of their contacts were friendly. Mill Creek sites including Chan-ya-ta and the Double Ditch, Lange site, and Wittrock village in O'Brien County, were fortified with ditches on at least three sides. The fourth side faced the nearby stream so that these sites were protected all around. At Wittrock, a log stockade had been constructed on the interior side of the ditch, and this may have been standard at other sites as well. At Double Ditch two parallel ditches were constructed. One possible reason for the disappearance of Mill Creek culture from Iowa was pressure from hostile groups. Exactly who these hostile groups might have been is unknown at this time. Mill Creek villages may have been rivals with one another.

Chamberlain Incised Triangle pottery.

Other factors in the disappearance of Mill Creek were possibly changing climate or diminishing resources, particularly timber. Some climatologists suggest that about AD 1200–1250 the climate became drier and conditions for horticulture deteriorated. In addition, the amount of timber required for fuel and house construction over a generation or more probably meant the depletion of local woodlands. Faced with these conditions, Mill Creek people seem to have abandoned their villages and moved elsewhere before the end of the thirteenth century.

It has been suggested that Mill Creek people gradually migrated up the Missouri River and were incorporated in the later Middle Missouri tradition sites of the Dakotas. Archaeologists believe that from such a tradition Siouan-speaking groups such as the Mandan and Hidatsa developed. These people were living in large, permanent, earthlodge villages at the time of historic contact.



Evidence of contact between Mill Creek and Mississippian cultures is found in a series of items including (clockwise): stone and bone earspools, Ramey Incised pottery, and hooded water bottles.

Lynn Marie Alex, 2002
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