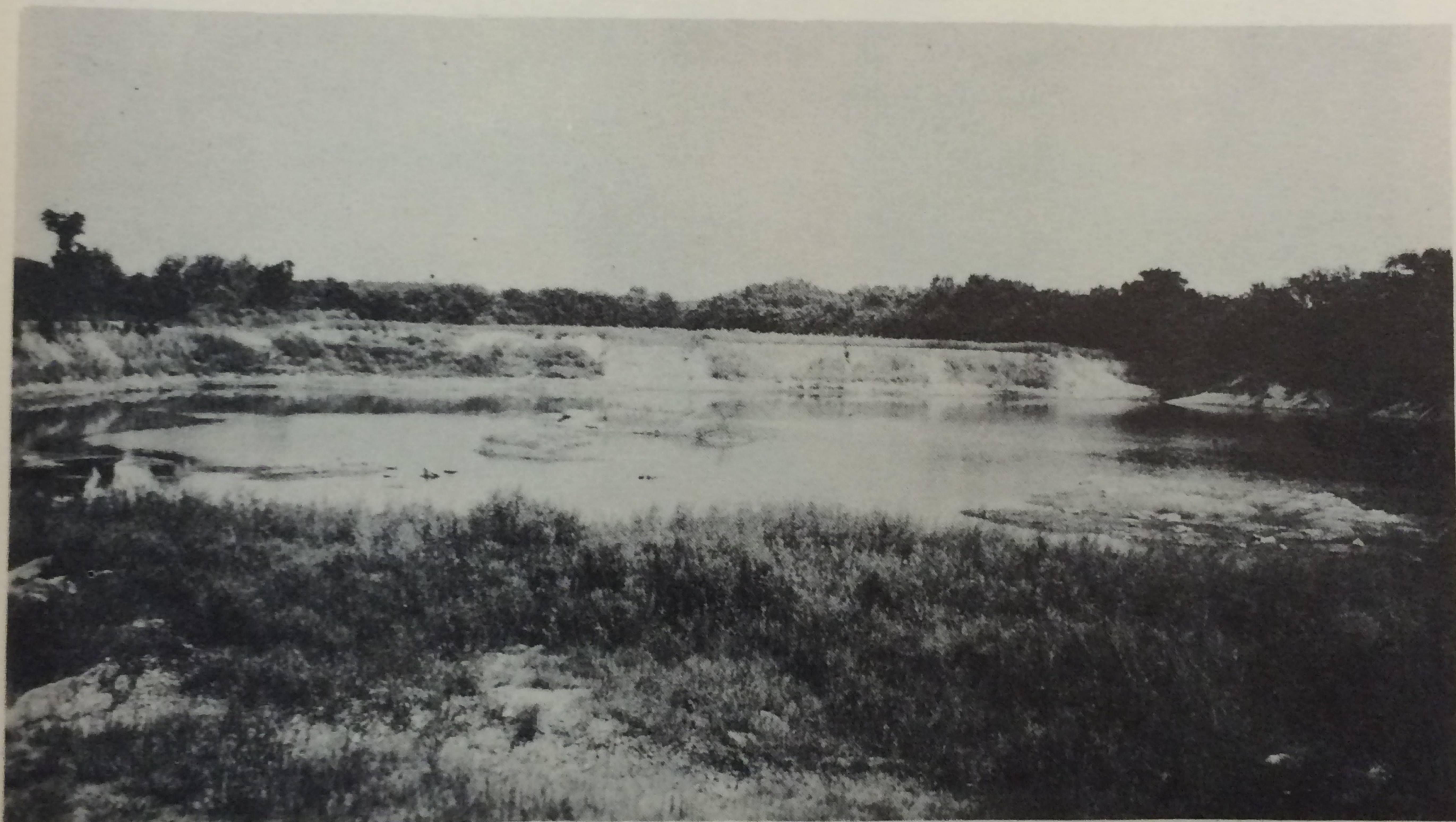


# The Peoria Academy of Science

APRIL, 1939

## THE KINGSTON VILLAGE SITE

BY A. M. SIMPSON







Effigy pipe 6" long and 4" high. The bowl of the pipe is in the small of the back and the stem hole in the rear of the figure.



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BY A. M. SIMPSON

## FOREWORD

We are very grateful to Mr. George N. Childs, President of the Kingston Lake Gravel Company, for permission to excavate at the site described and for interest shown in the work.

We extend to Mr. Thompson, superintendent of the company, our appreciation for the courtesies and favors shown us while collecting the artifacts described herein.

Our thanks are also extended to Dr. Frank Collins Baker, of the University of Illinois, for his painstaking work in identifying the remains of animal life found. Also to Dr. Donald F. Hansen, of the University of Illinois, for the identification of the fish scales collected and to all who have contributed a helping hand in collecting, photographing, and tabulating the collection, we are grateful.

ARCHAEOLOGICAL SECTION OF THE

PEORIA ACADEMY OF SCIENCE,

PEORIA, ILLINOIS.

## DESCRIPTION OF SITE

The Kingston village site is on the north bank of Kingston Lake, fifteen miles southwest of Peoria, Illinois. Kingston Lake is a long, narrow lake paralleling the Illinois river for a half mile and separated from it by a wooded sandbar 150 yards wide.

The village site is located on a terrace of the river and occupies an area of about 15 acres. The terrace is composed of a layer of black river silt from one foot to four feet in depth overlying a loess-like body of clay from zero to three feet in thickness. The floor of the old village rested on the layer of clay, from one foot to three feet below the present surface.

To the south is a wide, marshy flood-plain extending up and down the Illinois river--a haven for wild game. On the north is a higher plain, rich in humus, suitable for agriculture. The Illinois river served as an arterial highway to the villages north and south, and the terrace was a vantage point from which to view the approach of friend or foe.

That this site had been occupied by prehistoric peoples had been known for many years because of the presence of a truncated pyramid mound. This mound was 160 x 165 feet at the base and 12 feet high. It was located near the northeast corner of the site.

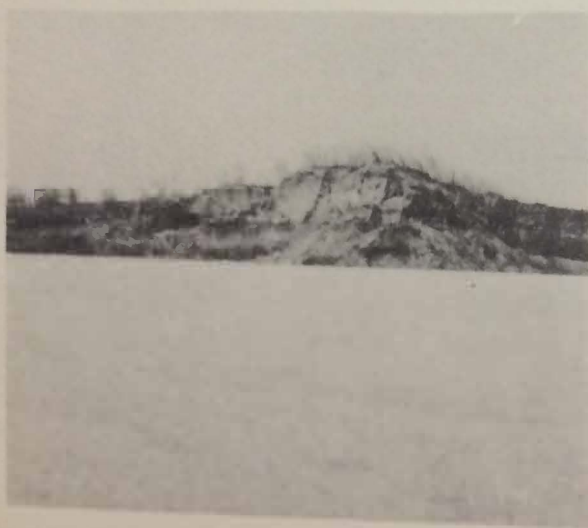
## HISTORY OF OPERATIONS 1931-1932

Although the mound had been known for years, the discovery of the village site, perhaps the richest site so far discovered in Illinois, was an accident. In 1931 the Kingston Lake Gravel Company, owner of the site, started to dig gravel at the location. They intended at first to build a railroad switch connected with the main line of the T. P. & W. railroad at Mapleton and to transport the gravel by rail. To this end, they stripped a considerable area of the black loam and clay and heaped it up to form a grade for the proposed railroad. In the stripping operations, the village floor was exposed and many pieces of broken pottery, clam shells, and many kinds of bone and stone tools were found. Mr. George N. Childs, president of the gravel company, says that many burials, also, were uncovered when stripping the black soil, as many as seven or eight in one day being uncovered.

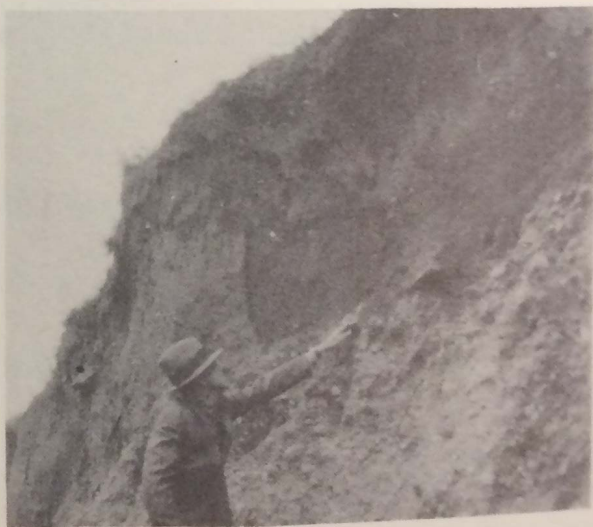
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After making a railroad grade several rods in length, the gravel company decided to abandon the idea of rail transportation and to dig the gravel by hydraulic methods and ship it by barge. When the hydraulic dredge began operations, it further exposed the nature of the old Indian village. The removal of the gravel caused the clay and loam above to topple in, bringing to view a cross-section on the embankment of the village floor, outlined by ash, charcoal, shells, bones, potsherds, circular fireplaces, and storage pits.



Remnant of the temple mound just before it was completely destroyed.



Face of bank showing storage pit resting upon the gravel beneath. The old village floor is at the level of the top of the pit. These pits were rich in artifacts.



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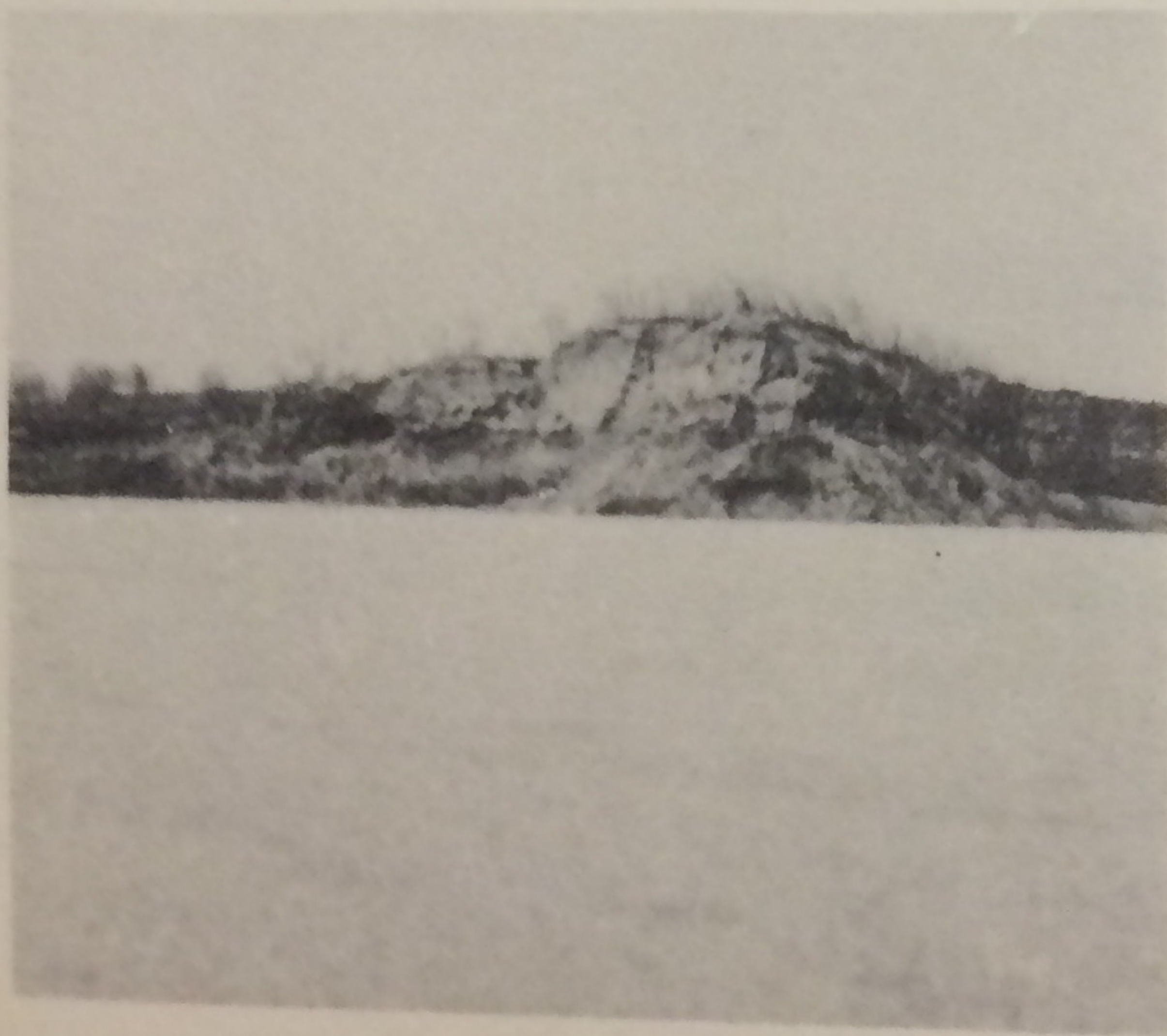
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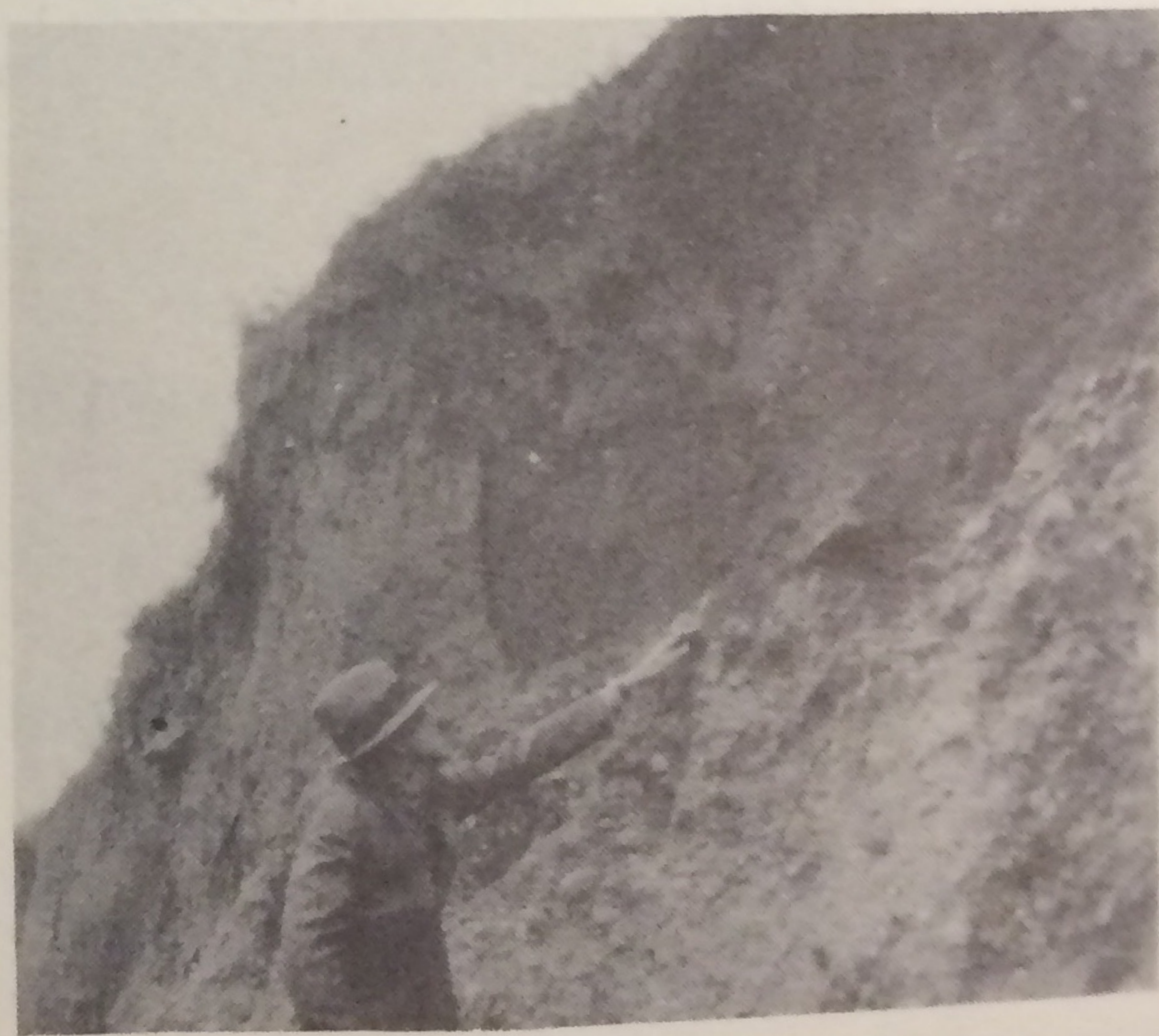
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On February 16, 1932, the archaeology section of the Peoria Academy of Science was established, with A. L. Epstein, V. H. Chase, A. M. Simpson, and F. L. Barloga as members. At a second meeting on March 9, 1932, these four were joined by F. A. Buck, John Voss, Dr. M. F. Simpson, Stanley Tess, and Dr. Charles D. Sneller. Mr. A. M. Simpson was made leader of the group.

Mr. Simpson and Clarence Hammon now made a call upon Mr. George N. Childs, president of the gravel company. Mr. Childs gave the archaeology section permission to work the site as long as they did not damage anything and kept out of the way of the dredging operations. This necessitated doing most of the work on Sundays when the dredge was not operating.

The first recorded trip to the site for actual work was on Feb. 28, 1932 by V. H. Chase, Dr. Charles Sneller, John Voss, and F. L. Barloga. The richness of the site is attested by the fact that on this trip more than 100 specimens were collected where the dredge had been working. Mr. Chase made a report of the finds, which included: 1 perfect pottery disk, 2 broken human femur bones, several rodent bones, bird bones, one-half of lower jaw of sheepshead fish, carapace fragments of turtle, 1 broken horn tool, fragments of Virginia deer bones, fragments of bones and horn of wapiti, flint fragments, 1 arrow point, 2 flint knives, 5 species of mussel shells, 1 perforated mussel shell, 1 horn chisel from bone of Virginia deer, 1 perforated shell hoe, and 90 pottery sherds. About half of the sherds show textile impressions, while the rest are plain, with traces of tool marks and finger prints. All the sherds are tempered with crushed shell. Some of the sherds are large enough to determine the size and shape of the vessels from which they came and, using these sherds, the vessels have been restored.

The necks of the represented pots were narrow and short, with a deep turned lip, a few as much as 90 degrees, color gray to a brick red, walls from 1/8 inch to 3/8 inches thick, diameters from 5 inches to 11 inches. A few sherds are of a very dark color, highly polished with their walls giving a metallic ring when struck. The lips of these are perpendicular to the diameter of the pot and decorated with lines on the inside in groups of 12 to 16 lines in different conventional forms. They were evidently made while the pottery was plastic.

It is unfortunate that the above record is the only record of 1932 now available. The leader made a record of each trip but the remainder of the 1932 records have been misplaced. Perhaps future years will bring them to light again. Throughout this year numerous trips were made to the site by Mr. Simpson in company with various other members of the Academy and a wealth of material was found. During this time many of the fire pits and storage pits exposed by the dredge were dug out and much of the material found came from these pits.

### 1933

In January, 1933, Mr. L. P. Elliott, together with his son, John, made a blue print of the site as it then existed, showing the location of the edge of the bank to which the gravel digging operations had progressed and of the large mound mentioned.

The work in 1933 was intensely prosecuted. The first trip of the year was made on February 2nd and the last on December 23rd. Twenty-three trips in all were made by Mr. Simpson in company of other members of the Academy. To this should

be added sporadic trips made by a few others that were not reported. Mr. Simpson's reports show the following members to have accompanied him on one or more of these trips--Dr. Charles D. Sneller, Mrs. Sneller, L. P. Elliott, John Elliott, Dr. M. F. Simpson, Al Schradski, Clarence Hammon, Mrs. Hammon, Robert Poehls, V. H. Chase, George Schoenbeck, Howard Simpson, and Sarah Simpson.

The specimens found this year ran into the hundreds. These came mostly from the storage pits that were constantly being exposed by the operations of the dredge. During the middle of the summer, when the ground was too hard for digging, a considerable number of specimens were taken from the old village floor. Toward the last of the season, several burials were found and these yielded a few very fine specimens.

The specimens secured from the pits and village floor this year included: FOOD REMAINS, bones and portions of antlers of Virginia deer, wapiti bones, fish bones, turtle bones, beavers' teeth, and several species of mussel shells; POTTERY, body sherds of deep vessels, sherds of plates with both shell and sand tempering, rim sherds, black polished sherds, both plain and decorated ears or handles of pots, a complete bowl 5" x 7", and plain and decorated pottery disks; STONE IMPLEMENTS, flint knives, flint arrow points, flint scrapers, celts, anvil, hammer stones, net sinkers, and a 7" x 10" x 5/8" paint mortar; BONE IMPLEMENTS, two types of awls, game bones, and deer jaw hoes; SHELL OBJECTS, many shell hoes, a broken shell ornament; HORN IMPLEMENTS, horn awls.

The most important finds of the year were contained in a burial found on December 7th by Mr. Simpson and Robert Poehls. This burial was close to the bank. Mr. Poehls noticed a bone and a piece of bark protruding from the bank where the dredge had worked. On investigation he found it to be a bark-lined grave with three skeletons. One skeleton was of a young person about 12 to 14 years old, which had apparently been scalped but otherwise was complete. This skeleton had been buried in the flesh. Near it were found two small triangular chert points, one under each shoulder. The other two had also been buried in the flesh but the skulls were missing. Between the two skeletons, near the shoulders, was found a wooden ear spool which had been jacketed with copper of which a thin film was still attached to one end of the spool. At the head of the grave in the right-hand corner was found a mottled double-disked discoidal stone weighing 6 pounds, 3 ounces. In the grave were also three hammer stones and many fish scales which have been identified by Dr. Donald F. Hansen, zoologist, University of Illinois, as from crappie.

A second burial was found on December 23rd. The bones were badly decayed but appeared to have been from three skeletons. No artifacts were found with these.

During this year, also, the big mound was destroyed. In April the gravel company notified Mr. Simpson they would be taking it down in the near future. They also notified the Department of Anthropology, University of Chicago. On July 27th about half of the mound had been excavated when the department made a graph of what remained. The mound was found to be a ceremonial mound and no burials were found in it. At three different heights in the mound were found a layer of ashes, indicating it had been built up at successive periods.

### 1934

The same unfortunate circumstances surround



the reports of 1934 as of 1932. The records, with two exceptions, were turned over by Mr. Simpson to others and have been misplaced. However, the work proceeded the same as the year previous and many artifacts were added to the various individual collections of members.

One exception to the records remaining is a report made by V. H. Chase of the contents of one garbage pit 3 1/2' in diameter extending 3' below the level of the surface. Mr. Chase kept track of every piece found, which totaled 551 pieces, as follows--100 pottery sherds from 1" to 6" in diameter, 65 smaller sherds, 18 sections of carapace and plastron of turtles, 60 fragments of bones of mammalia, 3 jaws containing teeth, 2 large teeth, 1 large broken tooth, likely of beaver, 16 pieces of split bones found lying parallel in the pit, 185 whole and broken bones of fish, birds, etc., 1 piece weathered human skull, 3 fresh water snail shells, 12 fresh water mussel shells, 1 broken shell hoe, 1 mussel shell containing 27 fish bones, 1 mussel shell containing 19 fish bones, and 82 fish scales of black bass, dogfish, sucker, and sheepshead. No day or month of this find is given on the report. The contents of this pit are typical of those of other pits except that this one was deficient in implements and tools.

The other exception in records of this year is a report of a burial found by Robert Poehls on May 6th. The grave had passed through the black loam and a layer of clay twelve inches thick to the gravel below, on which rested two skeletons side by side, extended, and with heads to the south. The arms of one were flexed across the abdomen. The bones were very soft.

The grave contained a comparatively large amount of grave goods. On the right arm of the first skeleton was a sleevelet made of 694 clam-shell disk heads, against which rested a 12-inch flint blade with the point toward the shoulder. Near the elbow of the left arm was a 1-inch crystal bead. Just below the feet was a group of 24 triangular notched chert points. At the head of the grave between the skeletons were four copper cups one-half inch in diameter. The cups were on what appeared to be the remains of a woven mat, or, perhaps, a medicine bag. At the head of the second skeleton was an 8" bowl and a grooved sandstone sharpener. At the feet were two more bowls. All the bowls were crushed but have now been restored.

While no date is now available, Mr. Simpson is of the opinion that a stone lined grave was also found this year. This was a platform form burial. It consisted of a rectangular dirt platform seven feet long, two feet, four inches wide, and fourteen inches high, encircled by a layer of three-inch stone slabs on which rested two rows of stone slabs set on edge, forming a continuous wall around the dirt platform flush with the floor. On this platform rested the skeleton of an adult with head to the west and body not flexed. A large spawl scraper lay near the pelvic bone. Nothing remained of the skeleton but a few fragments of bone, bone dust, and the enamel caps of the teeth.

### 1935

In 1935 the first recorded visit to the Kingston site is on June 1st. From now until December 8th many trips were made. The leader worked this year with L. C. Anderson, H. L. Spooner, A. L. Spooner, and A. R. Buis. Most of the material was taken from storage pits, some of which were dug with difficulty on account of the hard ground. This year was rich in imple-

ments of stone, bone, and shell, as well as of food remains.

Several items different from what had been found in previous years were found. These included carbonized corn, raw potter's clay mixed with fragments of river clam shells ready for the potter, a stone pipe, a mammoth tooth, carbonized melon seed and pumpkin seed, a fragment of an engraved clam shell, shell spoons, and a slate or shale gorget probably used as a breast-plate. It had a hole drilled through it and looked as though it was stained with copper.

In one of the pits were found 16 pottery disks, of which 11 were broken. Another pit had a layer two inches deep of small clam shells entirely covering the bottom. The pit was 28 inches below the village floor and 4 feet in diameter.

Although most of the members had given up the site because they figured it was about worked out, the leader and L. C. Anderson on July 28th excavated a pit which yielded fragments of 19 plates, 5 corded pots, 3 deep bowls, 1 beaker, 1 bottle top, 55 shallow bowls, a total of 84 different vessels, together with elk bones, beaver jaw, turkey bones, 4 mammal jaws, dog bones, deer bones, fish bones, turtle carapace, turtle plastron, bird bones, 5 sandstone sharpeners, 4 shell hoes, 1 flint spawl, 3 perforated clay disks, 3 arrow points, 2 incisor teeth of beaver, 1 incisor tooth of muskrat, 1 canine tusk, 1 game bone, 2 bone awls, 3 antler prongs, 2 broken fish hooks, 1 red hematite paint stone, 2 deer jaw hoes, 11 flint chips, 5 flint implements, 1 fish bone tool, carbonized corn, charcoal, 1 melon seed, 4 pitted hammer stones, and 1 paw paw seed.

This year also revealed three burials. The first of these was found on June 16th. The body was flexed, inclined to the right. The bones were in fair condition. The gravel scoop had broken away most of the skeleton. It was likely an intrusive burial as the head was about four inches above the old village level. The grave was 3'2" deep and about the same in diameter. The north wall was perpendicular but the south was sloping, upon which the skeleton rested. No artifacts were found with the body.

The second burial was of a child about six years old, found July 21st. This grave was shallow, about 18 inches deep and was partly above the old village floor. No artifacts were found with it. It was likely an intrusive burial also.

On July 28th was found the third burial. This was also intrusive, being located partly over the top of the pit described on that date. The skeleton was badly decayed and the skull was missing. The head was to the north and the legs were flexed.

### 1936

The work in 1936 continued, but on account of the dry summer, the ground was too hard to work easily. By this time, the dredging operations had limited the workable area a great deal also. Twenty trips were made. Some of the new objects found were two clam bakes found on April 18th and June 7th. The first contained 9 and the other 7 large clam shells that had been put in the ground to bake but never taken out. Burned clay was on top and around the shells. Several new effigy pot handles were found and a bone bodkin or needle. Several butternut hulls, carbonized, were found in the pits. The leader's helpers this year were L. C. Anderson, H. L. Spooner, Robert Poehls, A. R. Buis, F. B. McGowan, and A. L. Spooner.



## 1937

The ravages of the dredge had made the available ground for working quite small. Nine trips were made this year from March 19th to late in the year. The leader was accompanied by various members among whom were Robert Poehls, Clarence Hammon, Mrs. Hammon, A. R. Buis, and Mr. and Mrs. George Schoenbeck. Nothing unusual was found this year except a small mottled celt.

The last trip was made in connection with a field trip by the Illinois Archaeological Society. On this trip, besides a considerable number of pottery sherds and bones of various animals was found an effigy of a child's forearm, evidently the handle of a pot, a large fragment of black polished plate, which has been restored, red ocher, and several fish scales identified by Dr. Hansen of the University of Illinois as from a gar pike.

## 1938

As this is being written, on April 10th, only one recorded trip has been made. This was on March 11th and the leader was accompanied by Mr. and Mrs. George Schoenbeck. In addition to the usual run of pit material, four celts were found by the Schoenbecks. Two of these are of a belted stone somewhat like slate but harder. These are thought to be from a culture further south than the great mass of material found. Mr. Simpson found a peculiar sandstone celt. The Schoenbecks also found a paint metate weighing 2 1/2 pounds. A scapula of some large animal thought to be buffalo was also found.

## SUMMARY

Summing up the distinguishing features of the Kingston site, they were: 1st, a large platform mound used for ceremonial purposes and containing no artifacts; 2nd, many burials in the top soil stripped off; 3rd, the village floor covered with considerable food refuse and broken pottery; 4th, storage and fire pits containing much refuse, broken pottery and implements, with occasionally perfect pieces.

## BURIALS

It is unfortunate that nobody from the Academy was present when the first stripping operations were performed to see the character of the many burials which Mr. Childs said were encountered. Of the seven burials recorded by Mr. Simpson, five types were met.

Of these five types, some indicated carelessness while others showed great care in preparation to honor the dead. Carelessness was clearly manifested by fragments of human bones, skulls and mandibles scattered about on the village floor and by many old storage pits containing fragments of human skeletons, also shallow pockets in the village floor holding parts of human skeletons.

The five types of burials, which have been described, were: TYPE NUMBER ONE, a stone-lined platform type burial, containing no artifacts except a spawl scraper; TYPE NUMBER TWO, a bark-lined pit burial of three skeletons, containing also a fine discoidal, a copper-jacketed wooden ear spool and other artifacts; TYPE NUMBER THREE, a deep pit burial containing two skeletons and very prolific in grave goods, indicating persons of much importance; TYPE NUMBER FOUR, a shallow conical pit containing a

flexed skeleton and no artifacts; TYPE NUMBER FIVE, a shallow grave with the skeletons in the overburden of the village site and partly over a garbage pit.

## TYPES OF ARTIFACTS

The site indicated a considerable variety in the materials used for making tools and implements. These included clay mixed with crushed shell or with sand or crushed rock, bone, horn, shall, flint, and several other kinds of stone.

## POTTERY

### CHARACTER

Many thousands of pottery sherds or fragments were found on the village floor and in many refuse pits. A considerable number of the sherds were large enough so that the shape and size of the vessels could be accurately determined. Using the measurements revealed by these sherds, several vessels have been projected. The largest of these has a content of seven gallons and the smallest nine ounces.

### PASTE

The paste of the potsherds was tempered with find to coarse crushed clam shells with the exception of the comparatively few sherds of black polished ware, which appears to have included some crushed shale. The fine tempering was found mostly in the smaller and deeper vessels, the coarse in the thick-walled shallow vessels.

The character of the paste used was revealed by finding several large chunks of unused, unfired tempered paste all ready for use. These varied in color from yellowish-brown to very dark brown. The darker colors may have included some shale in their temper. These colors and tempering were common throughout the many thousands of sherds preserved.

### SURFACE

All the sherds, considering the surface finish of the outer wall, fall into two classes; first fabric impressed, and second, smooth. About 15 percent of all the sherds fall in the fabric class. The fabric no doubt was used to support the vessels while the building and drying process took place, rather than for the purpose of decoration, as the imprinting on many was partly rubbed out and on others was re-covered with paste. The re-covering appeared on the thick-walled shallow vessels. A few sherds found were slipped and a small number were painted.

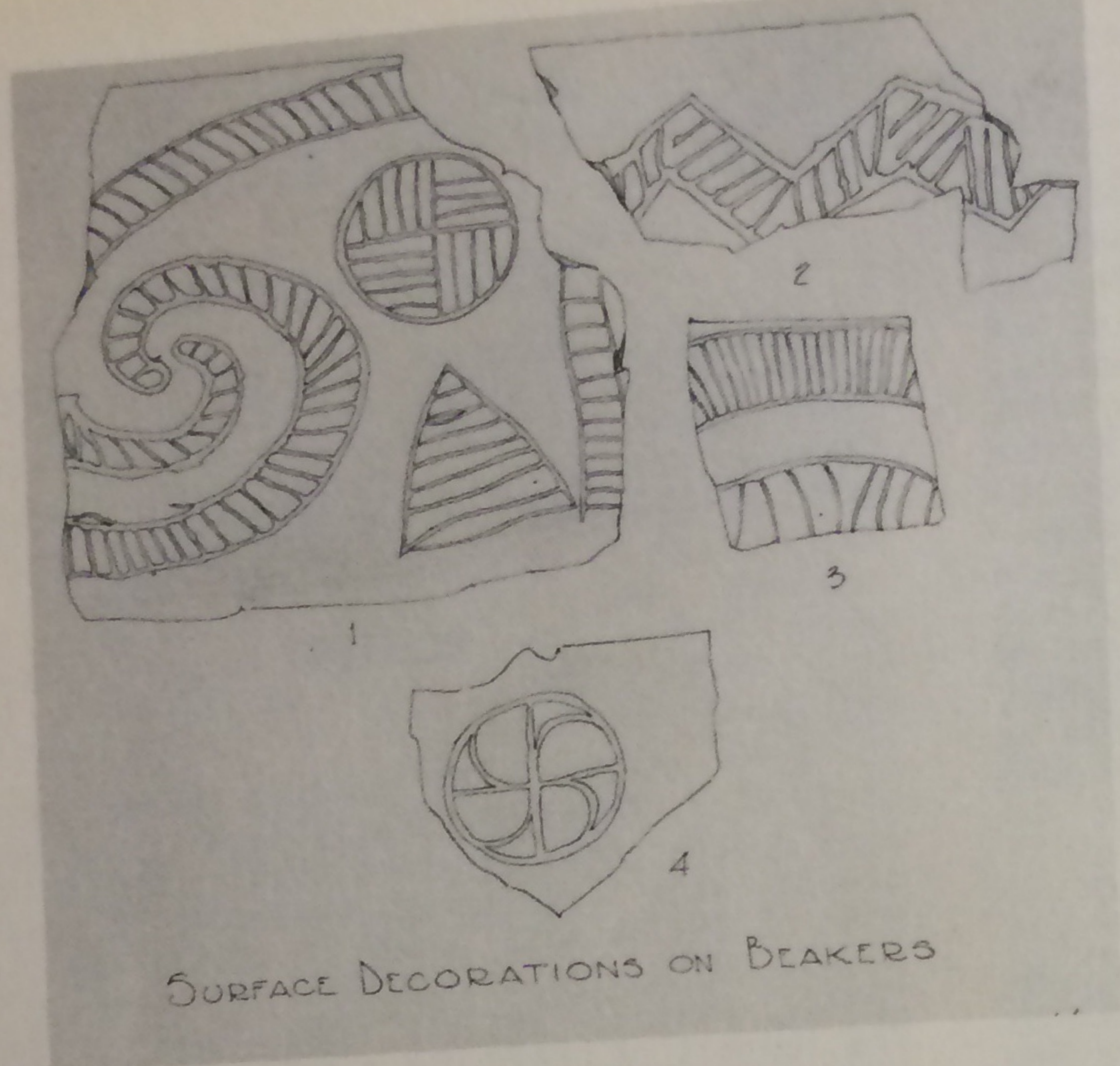
### TYPES OF VESSELS

Many rim sherds were found along with body sherds. Of the sherds that are large enough to indicate the shape of the vessels to which they belonged as well as the projected vessels and a few that were found entire, five types or shapes of vessels are represented. These five types are ollas, plates, shallow bowls, bottle-top vessels and beakers.

### OLLAS

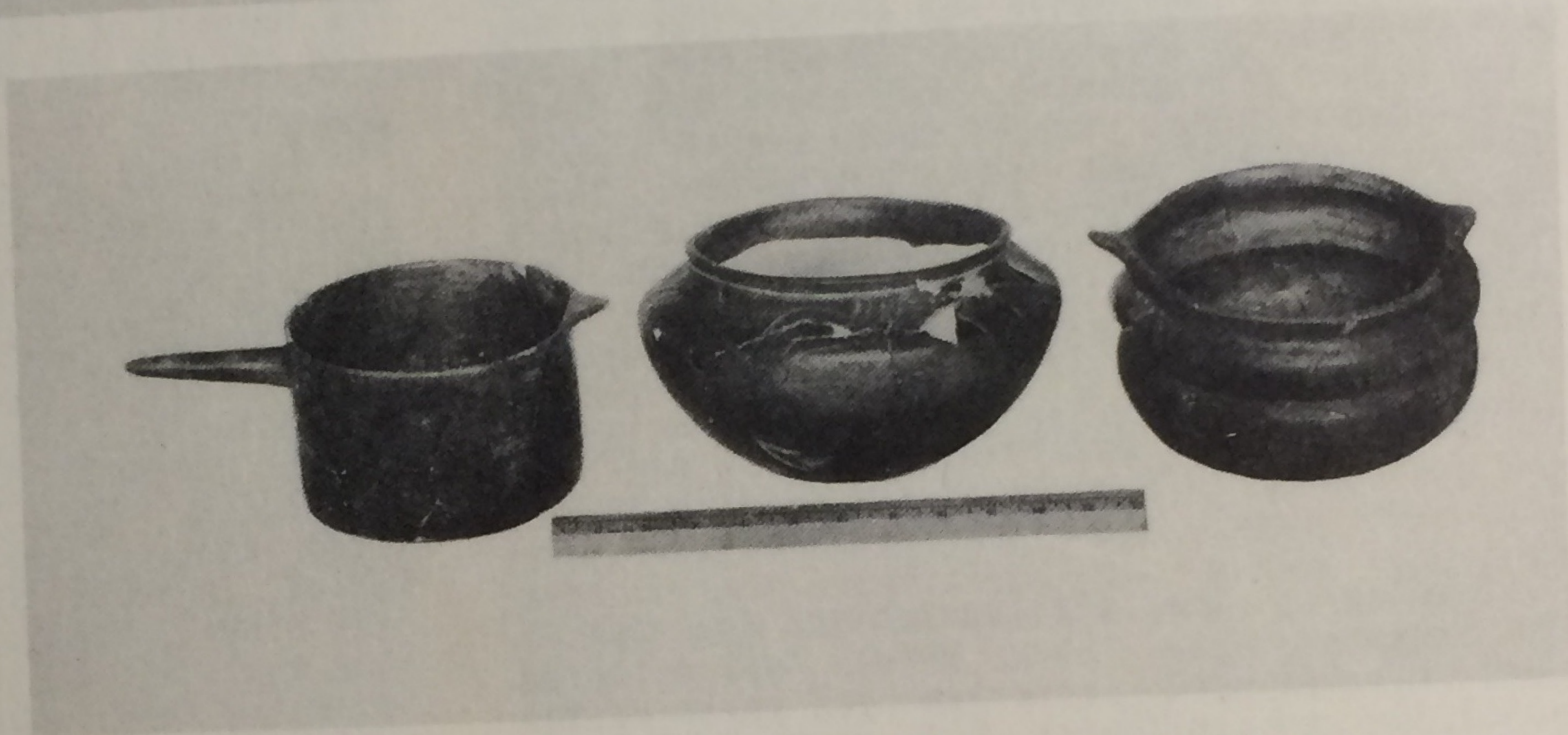
The ollas found are globular-shaped vessels with their outer surface either textile-imprinted or smooth. The smoothing was evidently done by a process of combing, scraping, and tooling, as if worked over by a round pointed tool such as a deer horn or a round piece of wood or bone. A few show finger prints both on the inner and





Types of decorations used on beakers.

Three types of vessels,  
all shell-tempered.



outer walls. The rims of the ollas also have a wide range of style such as flaring, vertical, rolled, and flat. A few are without rims, the walls ending abruptly in a round or flat lip.

The decorations of the ollas consist mostly of incised geometrical designs on the shoulders. A few have scratched designs and others are fluted as if made by a deer horn point. Many of the ollas have loop handles of various designs. A few are effigy-like forms more for decorative purposes than utilitarian because they are too frail to support the vessel and its contents. The handles are fastened to the pots by a riveting-like process or by adhesion, the latter being formed simultaneously with the making of the pot.

#### PLATES

The plates vary in size from five inches to sixteen inches in diameter and from one inch to four inches deep. Two restored plates have diameters of 16" and 15 1/2" respectively. The walls are from 1/8" to 5/8" thick. The bases are flat or slightly oval. The rims are extended at a right angle to the plate wall and are from 5/8" to 3" wide. A few have concave rims ending in a round lip while a few have scalloped lips. The decoration of the plates is on the rim and is similar to the decorations of the ollas except that a few have scroll designs. A few are painted red, and others black. Most are highly polished.

#### SHALLOW BOWLS

The shallow bowls are of various sizes, with a maximum diameter of 19 inches. They have thick walls, which are rimless, ending abruptly in a flat or rounded lip. The surface finish is rough or somewhat smoothed. Several show textile markings on the base. They have no decorations but a few were painted within.

#### BOTTLE-TOP VESSELS

The bottle-top vessels are globular with contracted necks and narrow rims. They vary considerably in size. The largest one found measured 11 inches in diameter and has a three-inch neck. The smallest is four inches in diameter. They show no decoration or coloring.

#### BEAKERS

Beakers are the most unique of all the types found. The walls are thin and vertical or slightly flared. The bases are flat and the pots small compared to the other types. The tempering is of fine crushed shell, well worked into the paste. Red and black colors predominate. The decoration is a scroll design of incised lines, covering the outer wall of the vessel. The handles are long and tapering and project from the vessel wall. Some have effigy-like forms for handles, such as a child's forearm with closed hand. Others have effigy forms attached to the vessel lip.



## UNUSUAL FORMS

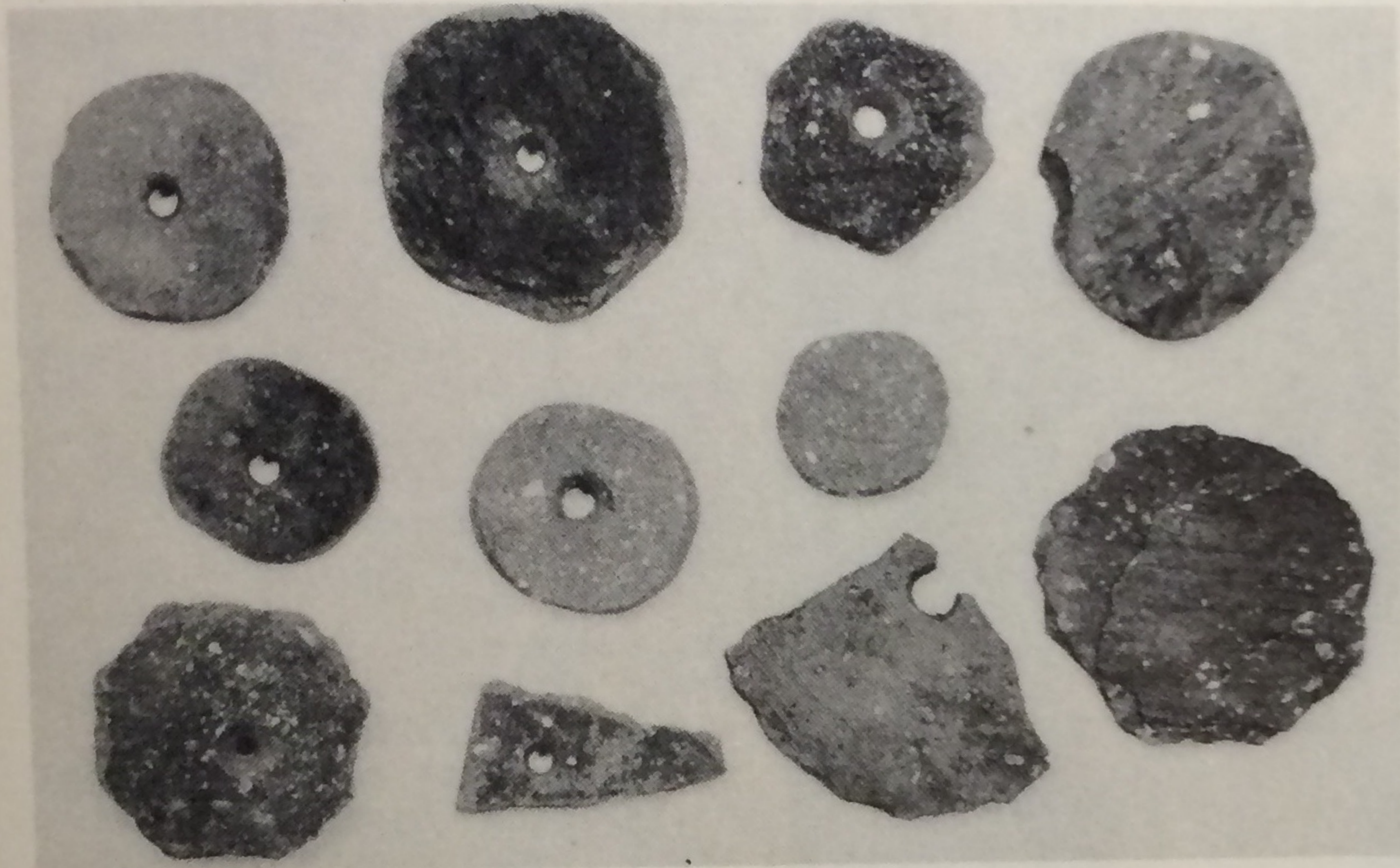
While the great majority of the sherds are of the type described, evidently belonging to the Middle Mississippi culture, a few of unusual type were found, showing a blending of two cultural types. A few sherds are tempered with sand or crushed stone and indicate the Woodland culture, while others seem to belong to the Lower Mississippi culture.

One unusual specimen is a complete pot, olla type but more compressed. It is 7" in diameter, 5" deep, and has a vertical rim 1 1/4" thick with an out-turned scalloped lip. It has round loop handles, with a scroll design covering the rim and shoulder. It is of black color and po-

lished. Obviously this pot belongs to neither the Middle Mississippi nor the Woodland culture.

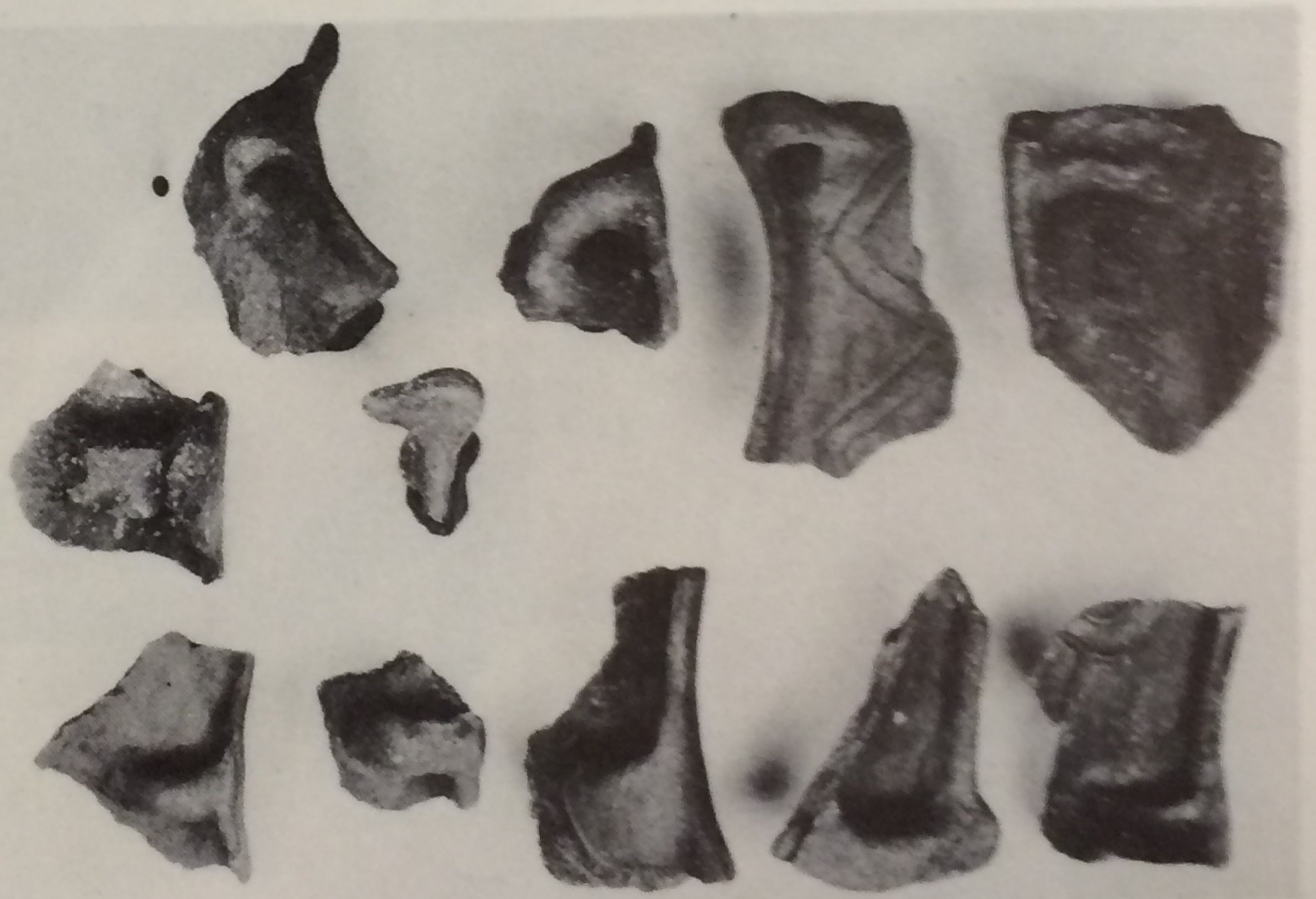
## OTHER POTTERY FORMS

In addition to 15 complete pots and 3 complete plates, several other pottery forms have been found. Among these are 36 of what appear to be pottery ornaments of various kinds. 51 pottery disks of various sizes and finishes, some entire and some perforated through the middle have been secured. Several potsherds collected had been broken or sawed into the shape of a hoe or scoop with the edges sharpened. The average size is 4" by 7". A pottery tool of the mushroom type was another find.



Pottery disks, or whorls,  
all shell-tempered

Various types of pottery handles.



## BONE IMPLEMENTS

### TYPES

The Kingston village site has been very prolific in objects made of bone. To date, the following bone implements have been found and recorded: awls and needles, 139; celts, 4; ornaments, 23; game bones, 27; fish hooks, 7; knives, 2; beamers, 4; plaques of turtle shell, 2; deer jaw hoes, 49.

### AWLS AND NEEDLES

The awls and needles are of several sizes, shapes, and finish. In their making, the bones

of deer, turkey, bird, dog, and fish were utilized. One awl was fashioned from the lower jaw of the long-nosed gar. Awls made from deer bones are the most numerous. These are mostly of two types. One type is made from split rib bones, sharpened at one end and polished. The other is made from the calcaneus, or heel, bone of the deer, brought to a sharp point and polished. In both types the shaft is usually left in the rough.

The needle-like tools vary from very short to several inches in length. One fragment found



seems to be from the tusk of some animal as it has the appearance of ivory.

#### GAME BONES

The game bones were fashioned from the toe bones, or phalanges, of the deer. The lower joint was cut off and the smaller perforated either by drilling or by making a diagonal cut through the joint.

#### FISH HOOKS

The fish hooks are from 1 3/8" to 2" in length. The shaft is rounded, with a knob or groove cut near the end of the shaft. None are barbed. All were made from deer bones.

#### DEER JAW HOES

Deer jaw dibbles were common. The handle was fastened along the hinge line, probably by a cord or thong passing around the jaw back of the posterior molar and over the handle. All showed much wear at this point, also at the

point of use.

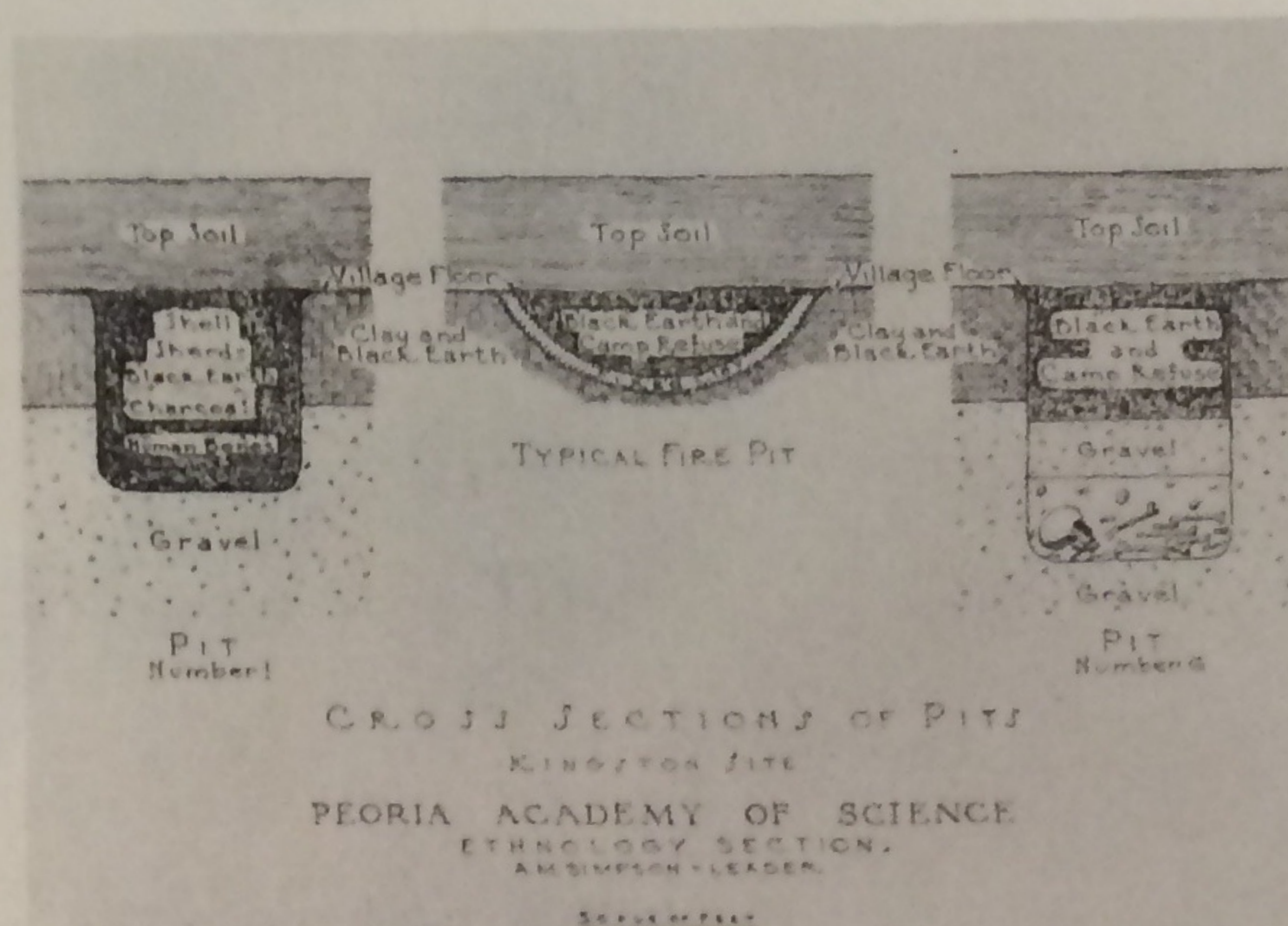
#### OTHER BONE IMPLEMENTS

Four bone celts or chisels were found. These are from the bones of the wapiti, are sharpened for use, and are plano-convex in shape. Among the bone ornaments found were several bracelets for the arms and ankles. These are very thin and are perforated for tying together. Two bone knives were collected. These are about three inches long, flat, and edged. Three bone beamers are represented. Two of these are made from the leg bone of the wapiti or deer while the other is from a rib bone of wapiti. Two bone plaques were secured. These are made from the sections extending between the legs of the plastron of the turtle. Each consists of four sections. They are polished on both sides. One of these is 2 1/2" by 3 1/2" in size.



Group of bone and shell implements. From left to right, top row shows a beamer, four types of bone awls, beaver tooth chipper, spatula, two deer jaw dibbles. Second row, shell spoon, pottery whorl, bone celt. Lower row, shell-tempered pottery tool, two shell hoes.

Cross sections of pits.



#### ARTICLES FROM HUMAN BONES

Human bones were also used in making utensils. Two human skull bowls were collected. In one of these, the edges were left in the rough. The bowl contained a coon bone and shells when

found. The other skull had been polished and the edges smoothed. A cut human lower jaw was also found, showing an attempt had been made to cut off the hinge.

#### HORN IMPLEMENTS

##### TYPES

Implements made from the horns of deer were quite numerous. These are mostly of two kinds,

awls and flakers. Of the former, 41 have been recorded and of the latter 15. A few horn projectiles were also found.



#### AWLS

The awl-like tools have a blunt round point and are well finished. They were probably used as a finisher or polisher for pottery. Many showed much wear. The potsherds have tracings apparently made by such a tool.

#### FLAKERS

The flakers are made from the horns of young deer. As a usual thing, the knob where the antler joined the skull is left on the tool as a handle. The other end is sawed off squarely, leaving a blunt end.

#### PROJECTILES

Horn projectiles were made by cutting off the tips of deer horns and sharpening them. Some were also socketed. Three were found that were unfinished.

#### OTHER HORN TOOLS

In addition to the tools mentioned, three wedge-like tools of deer horn were found. These are well tapered from two sides to the bit, which is rounded. The pole ends are much abraded.

### SHELL OBJECTS

#### TYPES

River clams of several species were very important in the economic life of the people who inhabited the Kingston site. Of all the food remains left in the garbage pits and scattered on the village floor, clam shells are second only to deer bones in number. Two entire clam bakes, one of 7 and one of 9, very large clams were discovered. Clam shells formed the bottom of at least one grave recorded.

Clams were not only a favored article of diet, but the shells were utilized in making various ornaments and implements. Shell hoes to the number of 170 have been recorded. 695 shell beads, 10 shell ornaments, and 2 shell spoons are on record.

#### HOES

The shell hoes were made by perforating the shell with a hole from 1/2" to 3/4" in diameter in the center of the shell. Nearly a hundred of the hoes are perfect. They are divided about equally between right and left valves. Five very

large ones were found in one cache. With two exceptions, all were made from one species of clam.

#### BEADS

The clam shell formed an ideal material for making disk-shaped beads. Of these, 694 were found with a burial. They were found on the right arm and extended for six inches above the elbow to four inches below the elbow. There were fifteen rows on the outside of the arm and 5 rows inside, with one row across at top and bottom. Besides these, one such bead was found in a refuse pit.

#### OTHER SHELL OBJECTS

Two shell spoons made from clam shells were recorded. These were formed by grinding off the hinge and beak of the shell and polishing outside. In addition to the shell objects mentioned, several tools made from the columnella of conch shells and one made from a large clam shell were collected.

### COPPER OBJECTS

#### TYPES

The number of copper objects revealed was small, only eight having been reported. Four of these consisted of fragments of sheet copper. A

wooden ear spool had been covered with this and a small amount was still attached to the spool. Four small copper cups were found with a burial.

### CHIPPED STONE IMPLEMENTS

#### TYPES

The chipped stone implements are represented by six types: projectiles, of which there are 143; scrapers, totaling 150; drills to the amount of 11; knives numbering 34; a few chisels; and 1 hoe. These for the most part are made of chert, an impure flint.

#### PROJECTILES

The majority of projectiles collected are of thin, triangular, edged, unnotched type, characteristic of the Middle Mississippi culture. A few are of the notched type.

#### SCRAPERS

Scrapers are quite numerous and of five styles. The most common are the bunt variety. The least common are the long three-faced type. The material is mostly chert.

#### KNIVES

The knives reported represent two types. One of these is the larger chipped variety. A majority are of the thin, flaked, edged type.

#### DRILLS

The drills reported are mostly of two forms. One of these has the ordinary straight shank and the other has a T-shape shank.

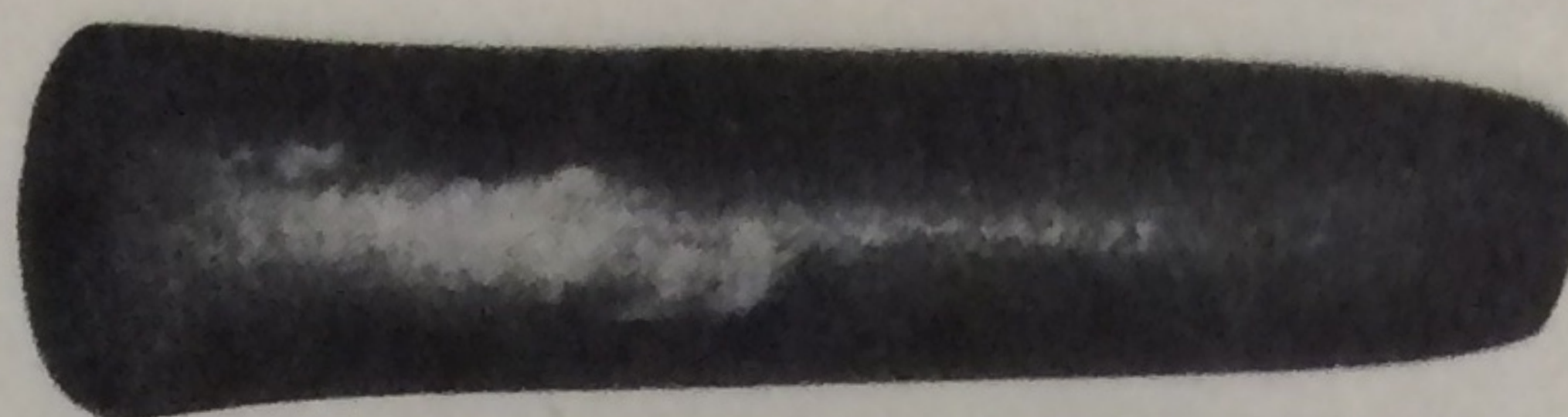
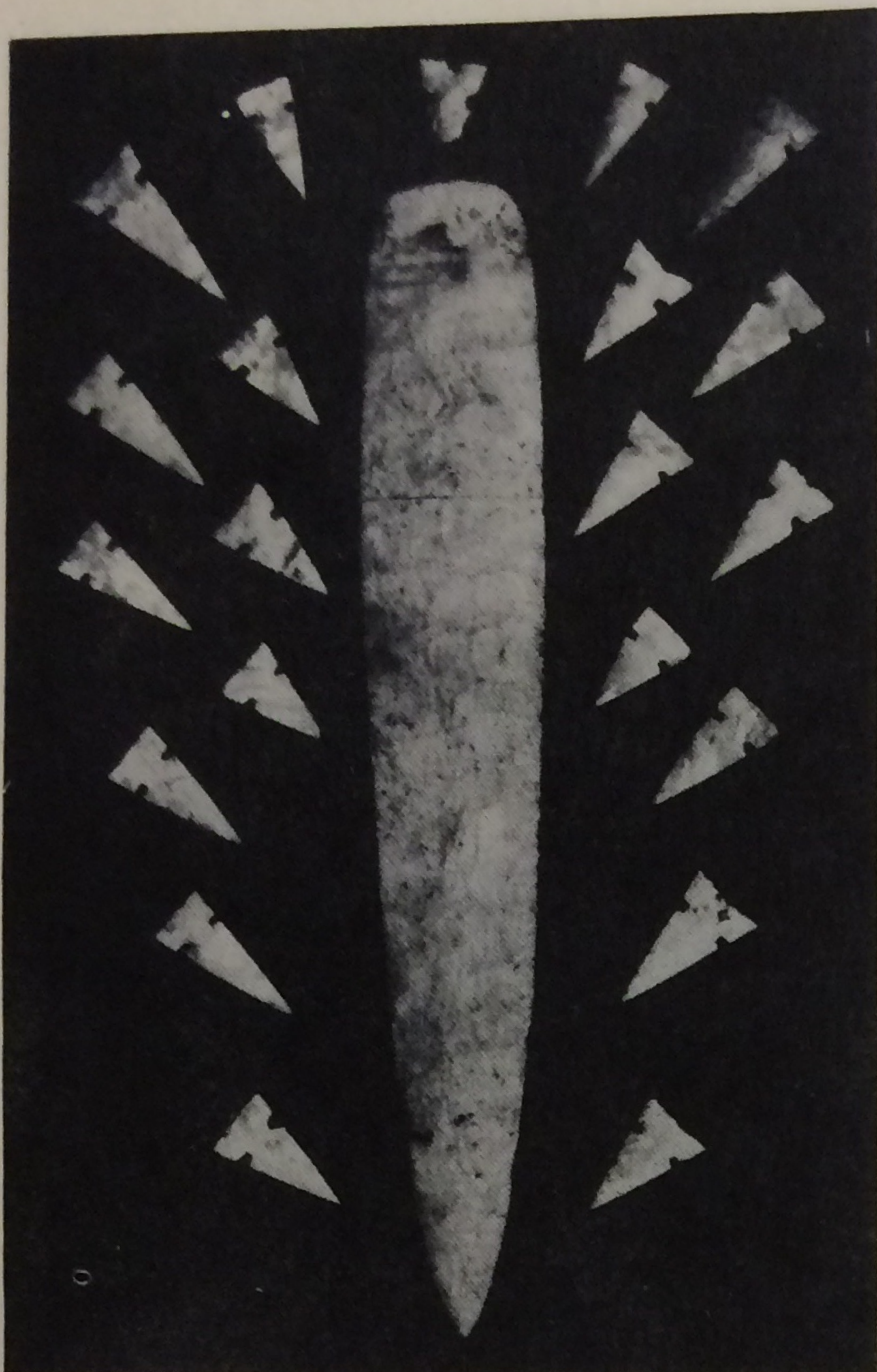
#### CHISELS

A few flaked chisels were found. They differ from flint celts mainly in having only one side of the cutting face sharpened.

#### HOES

Only one stone hoe or digger was secured. It was of chipped chert, 7 inches by 2 inches, notched near the pole. The bit was polished as if from use.





Round, black celt, highly polished.

Twelve-inch flint blade, or lance, and triangular points found in burial.

## GROUND STONE IMPLEMENTS

### TYPES

The ground stone implements found represent quite a variety. Of these, there were reported 2 pipes, 38 celts and chisels, 1 bead, 2 axes, a few discoidals.

### PIPES

Only three pipes of any material were collected and these are all of stone. One of these is of the tubular variety. Another is a small, stemless effigy type. The third one is also of the effigy type. It is about six inches long and four inches high. The bowl of the pipe is in the small of the back of the figure and the other opening is in the rear of the figure.

### CELTS AND CHISELS

The celt or ungrooved axe was quite common among the Middle Mississippi culture and that fact is indicated by the number of celts found at Kingston. These are of various sizes, shapes and materials. The average size weighs about one pound. One very interesting specimen, 7 1/8" by 1 3/8" in diameter, round, of black stone, highly polished from end to end, the pole

slightly tapering, was found. Mr. and Mrs. George Schoenbeck in March 1938 found four celts in one cache. Two of these are of belted Indiana chert and are thought to belong to the Cumberland culture and brought in from there. Mr. Simpson also found a sandstone celt about the same time.

Somewhat similar to the celts is the chisel. Several of these were found.

### DISCOIDALS

Several discoidals were collected. Most of these were rather small. One of the most valuable artifacts recovered from the site is a highly polished mottled granite discoidal. Both sides are identical, each with a secondary depression. The specimen is three inches by six inches and weighs six pounds, three ounces. It was found with a burial.

### BEADS

Only one stone bead has been recorded. This is perforated, the perforations being from both sides. It is an inch in diameter and is made of quartz crystal.

## ROUGH STONE IMPLEMENTS

### TYPES

The rough stone implements recorded are quite numerous and include: hammer stones, 142; pecking stones, 32; whet stones, 137; metates, 9; sinkers, 2; anchors, 1.

### HAMMER STONES

Of the rough stone implements, the pitted hammer stones are much more numerous than any other kind. These are merely stones picked up

from stream beds and used without any preparation.

### PECKING STONES

A few pecking stones were collected. Some show use on only one side and some on both sides.

### WHET STONES

A great many sandstone tools for abrasive



purposes were found. One type has one semi-cylindrical groove on only one face of the stone. These are assumed to be arrow shaft dressers.

Many have several grooves running at various angles. These are the most common. It is believed they were used as bone needle sharpeners.

#### METATES

Several mortars or metates were secured. They are of flat, round sandstone, are from 4 inches to 9 inches in diameter, and about one inch thick. They have one face ground smooth and usually covered with red pigment. One exception is of granite; It is a flat stone hav-

ing a hollow depression pecked out on each face, one of which is covered with red pigment. It weighs nearly six pounds.

#### SINKERS

Two rough implements, apparently sinkers, were found. They are of sandstone, fully grooved, about 1 inch in thickness and about 2 inches long, tapered to one end.

#### ANCHORS

What is assumed to be an anchor is a sandstone boulder with pecked ends and weighs 4 1/2 pounds.

### WOODEN OBJECTS

Only one wooden object was found, an ear spool. This had been covered with sheet copper, which preserved it. It is so perfect in shape that one might think it turned upon a lathe. A

small piece of copper still remained upon it when recovered and the entire spool has the characteristic color given by copper.

### TEXTILES

In the same burial with the wooden ear spool was found a small piece of textile attached to a black carbonized honey-comb material. Possibly

the textile had been used as a wrapper for this material.

### MISCELLANEOUS AND PROBLEMATIC OBJECTS

In addition to the numerous objects recovered which have a known, or at least theoretical, use were several other objects problematical in nature. One of these is a specimen rectangular in shape of a fine grained stone similar to soapstone, weighing 1 1/4 pounds, with rounded corners and convex surfaces. It has a low ridge extending across the long axis of the face. A slightly higher ridge crosses the long ridge at right angles a little to one side of the center axis.

Another is a piece of limestone with a groove extending completely around the specimen. Another is a flat disk of shale 3/16 inch in

thickness, similar to the pottery disks often found, but usually drilled in the center.

Then there is a problematical tool made of gray stone, a spherical black stone likely used for some kind of game, and a limestone tool of some kind, perhaps a pestle.

In addition to these, there is a piece of sandstone weighing 2 1/2 pounds. A number of these were used to floor and line the sides of one of the graves. This particular piece had a large part of its surface impregnated with hematite, showing it might have been used as a paint stone or metate before being used in the grave.

### FOOD REMAINS

The prehistoric inhabitants of the Kingston site utilized both vegetable and animal material for food. Unfortunately, but little of the vegetable materials remain. Two or three handfuls of corn, a few corn cobs, several butter-nuts and walnuts, a paw paw seed, and two or three melon or squash seeds are all that were recovered. These are carbonized from burning,

which protected them from decay.

The animal remains recovered constitute an amount greater than all the rest of the remains combined. They represent a great variety. They formed the subject of an article by F. C. Baker in the Transactions of the Illinois State Academy of Science of December, 1936. This article is reproduced here verbatim as follows--

#### Remains of Animal Life From the Kingston Kitchen Midden Site Near Peoria, Illinois

Frank Collins Baker  
University of Illinois, Urbana, Illinois

The kitchen midden pits in the Illinois Valley near Kingston, fifteen miles southwest of Peoria, have yielded a large number of species of animals, both vertebrate and invertebrate. Through the kindness of Mr. A. M. Simpson of Peoria quantities of this material have been submitted for study. Studies of this kind are of value not only to the archeologist but also to the zoologist for species now rare in the lo-

cality are found to have been common at the time the Indians made the kitchen middens. Also some species may be found to have had a wider distribution previously, as in the case of the rice rat herein recorded. Some material was reported from this site in a previous paper in the Transactions of the State Academy (Vol. 23, page 231, 1931.)

The Invertebrates consist only of Mollusca,



principally the naiades or river mussels. Twenty-one different species and races of clams and two species of snails were found in the material. Nearly all of the species are now living in the Illinois River below Peoria. This is the largest number of species of mussels reported from any kitchen midden deposit yet recorded.

The vertebrates are divided among the fishes, reptiles, birds, and mammals. Of the fish at least six species are represented, all common in the Illinois River at the present time. Of the reptiles only turtles were represented, belonging to the genera *Chrysemys* or *Pseudemys*, and *Amyda*. Of the birds 31 species and races are recorded, a very large number for one locality and more than twice as many as previously recorded. Among the bird groups represented are all ducks and geese, three hawks, and two swan. Of special note are the trumpeter swan, wild turkey, sandhill crane, and long-billed curlew, now rare in Illinois. The bones most usually preserved are the wing and the leg bones.

Of the mammals, 13 species are represented. Of special interest in this group is the beaver, now extinct in Illinois. This mammal must have been a favorite animal with the Indians for its skull or other bones are not uncommon among kitchen midden material. The otter, also, is now rare in southern Illinois and practically absent from the rest of the state. The rice field mouse (*Oryzomys*) is at present known only from southern Illinois and the record from near Peoria carries the former distribution well up into the middle of the state. The mammal bones preserved in these deposits consist usually of parts of the skull, leg bones, pelvis, and vertebrae.

All of the species contained in the kitchen midden material is listed below. The vertebrate material was identified by specialists in the United States National Museum, and the thanks of the writer are due these specialists for their trouble in identifying such fragmentary material. The naming of the several groups should be credited to the following people:

Birds. Dr. A. Wetmore, Assistant Secretary of the Smithsonian Institution, in charge United States National Museum.

Mammals. Mr. Gerrit S. Miller, Curator of Mammals, United States National Museum.

Fishes. Dr. G. S. Myers, Assistant Curator of Fishes, United States National Museum and Mr. Earl D. Reid, Aide in the Division of Fishes of the same institution.

Turtles. Miss Doris M. Cocran, Assistant Curator of Reptiles and Batrachians, United States National Museum.

Mollusca. Frank C. Baker, University of Illinois.

The asterisk preceding a name indicates that it was listed in the previous paper published in The Transactions of the Illinois Academy of Science.

#### SYSTEMATIC LIST OF SPECIES REPRESENTED

Mollusca (Clams and snails)

*Fusconaia undata trigona* (Lea). Three left valves, adult.

*Fusconaia ebenus* (Lea). One right valve, adult.

\**Megalonaias gigantea* (Barnes). One left valve, small specimen.

*Amblema rariplicata* (Lamarck). Two right valves, adult. One left valve, immature.

*Quadrula pustulosa* (Lea). One left, one right valve, adult.

*Quadrula quadrula* Rafinesque. One left

valve, adult.

*Cyclonaias tuberculata* Rafinesque. One right valve, adult.

*Pleurobema pyramdatum* (Lea). One left valve, half grown shell.

*Pleurobema coccineum mississippiense* F. C. Baker. One left valve of an adult shell does not differ from this common variety of the Mississippi River. It has not been found alive in the Illinois River near Peoria.

*Plethobasus cyphus* (Rafinesque). One left valve, half grown.

\**Elliptio crassidens* (Lamarck). One right valve.

*Elliptio dilatatus* (Rafinesque). Five right and four left valves, adult.

*Alasmidonta marginata truncata* (B. H. Wright). One left valve, adult.

*Arcidens confragosus* (Say). One left valve, adult but small.

*Actinonaias carinata* (Barnes). Three right and three left valves, adult.

*Plagiola lineolata* Rafinesque. One left valve, adult.

\**Proptera alata megaptera* (Rafinesque). One right and one left valve, about half grown.

\**Ligumia recta latissima* (Rafinesque). One left valve, adult but small.

*Lampsillis fallaciosa* (Smith) Simpson. One right valve, small.

*Lampsillis siliquoides* (Barnes). Two left valves, small.

*Lampsillis ventricosa occidens* (Lea). Two right valves, adult.

*Campeloma rufum* (Haideman). One specimen, adult.

*Pleurocera acuta lewisii* (Lea). One specimen, adult.

#### Pisces (Fish)

\**Amia calva* Linn. Dentary, clavicle, opercle, preopercle, suborbital.

*Lepisosteus Osseus* (Linn.) Long-nosed gar. Dentary and interopercle.

\**Ameiurus* species. Bullhead. Dentary, pectoral spine, clavicle.

*Micropterus* species. Black bass. Interhaemal spine.

*Ictiobus bubalus* (Rafinesque). Small-mouthed buffalo. Hypural, shoulder girdle, opercle, pelvic girdle, ribs, pectoral finrays, preopercle, interopercle, supopercle, supraclavicle, postclavicle, branchial arch, neural spine, interhaemal spine.

\**Aplodinotus grunniens* Rafinesque. Freshwater drum. Interneural spine, anal spine, hypural.

*Stizostedion* species. Pike perch. Dentary.

#### Reptilia (Turtles)

*Chrysemys* or *Pseudemys* species. Scapula, coracoid, humerus, lower jaw. *Amyda* species. Humerus.

#### Aves (Birds)

*Nycticorax hoactli* (Gmelin). Black-crowned night heron. Humerus and ulna.

*Botaurus lentiginosus* (Montagu). American bittern. Ulna.

\**Cygnus buccinator* Richardson. Trumpeter swan. Humerus and ulna.

\**Cygnus columbianus* (Ord) Whistling swan. Metacarpus and femur.

\**Branta canadensis* (Linn.) Canada goose. Metacarpus and coracoid.

\**Anas platyrhynchos* Linn. Mallard duck. Humerus, metacarpus, tibiotarsus.

*Dafila acuta tzitzihua* (Vieillot). Pintail



duck. Metacarpus.  
 \**Nettion carolinense* (Gmelin). Green-winged teal. Ulna.  
 \**Querquedula discors* (Linn). Blue-winged teal. Coracoid, humerus, metacarpus.  
*Aix sponsa* (Linn.) Wood duck. Humerus.  
*Nyroca valisineria* (Wilson). Canvas-back duck. Metatarsus and metacarpus.  
*Nyroca affinis* (Eyton). Lesser scaup duck. Metacarpus.  
*Nyroca* (affinis or collaris Don.) Caracoid and femur.  
*Charitonetta albeola* (Linn.) Bufflehead. Metatarsus and tibio-tarsus.  
*Lophodytes cucullatus* (Linn.) Hooded merganser. Humerus (2).  
*Buteo lineatus* (Gmelin). Red-tailed hawk. Metacarpus.  
*Buteo borealis* (Gmelin). Red-shouldered hawk. Metacarpus.  
*Buteo platypterus* (Vieillot). Broad-winged hawk. Metacarpus.  
*Haliaeetus leucocephalus* (Linn.) Bald eagle. Humerus and ulna.  
 \**Tympanuchus cupido americanus* (Reich.) Prairie chicken. Tibiotarsus, scapula, metacarpus, ulna.  
*Colinus virginianus* (Linn.) Bobwhite. Humerus and femur.  
 \**Meleagris gallopavo silvestris* (Vieillot). Wild turkey. Humerus, femur, metacarpus, coracoid, tarso-metatarsus, ulna, and tibio-tarsus.  
*Grus canadensis* (Linn.) Sandhill crane. Part of ulna.  
*Porzana carolina* (Linn.) Carolina rail. Tibio-tarsus and furcula.  
*Fulica americana* Gmelin. Coot. Metacarpus and tibio-tarsus.  
*Numenius americanus* Bechstein. Long-billed curlew. Ulna.  
*Philohela minor* (Gmelin). Woodcock. Tibio-tarsus.

*Limnodromus griseus* (Gmelin). Dowitcher. Humerus.  
*Colaptes auratus luteus* Bangs. Flicker. Ulna.  
*Agelaius phoeniceus* (Linn.) Red-winged blackbird. Humerus.  
*Quiscalus quiscula* (Linn.) Grackle. Ulna.

Mammalia (Mammals)  
 \**Odocoileus virginianus* (Bodd.) Virginia deer. Teeth, part of skull, part of lower jaw, heel and toe bones, vertebrae.  
*Sciurus niger rufiventer* (Goeffroy). Fox squirrel. Humerus, radius, tibia, ramus of lower law.  
 \**Sciurus carolinensis* Gmelin. Gray squirrel. Humerus.  
 \**Castor canadensis* Kuhl. Beaver. Pelvis, humerus, radius, tibia, fibula, ulna, rib, vertebrae.  
 \**Ondatra zibethica* (Linn.) Muskrat. Part of skull and lower jaw, pelvis, sternum, humerus, femur, tibia-fibula.  
 \**Mustela vison luteocephalus* (Harlan). Mink. Skull and lower jaw, femur, humerus, ulna, foot bones.  
*Lutra canadensis* (Schreber). Otter. Skull.  
*Procyon lotor* (Linn.) Raccoon. Left ramus of jaw, radius.  
*Lynx rufus* (Guldenstaedt). Wild cat. Bob cat. Humerus.  
 \**Canis familiaris* Linn. Skull and jaws, scapula, part of pelvis, femur, humerus, ulna, radius, tibia, rib, toe, bones, atlas.  
*Scalopus aquaticus* cf *machrinus* (Raf.) Prairie mole. Jaw, tibia.  
*Sylvilagus floridanus mearnsii* (Allen). Mearn's cotton-tail rabbit. Lower jaw, scapula.  
*Oryzomys palustris* (Harlan). Rice field mouse. Femur, tibia-fibula, skull.