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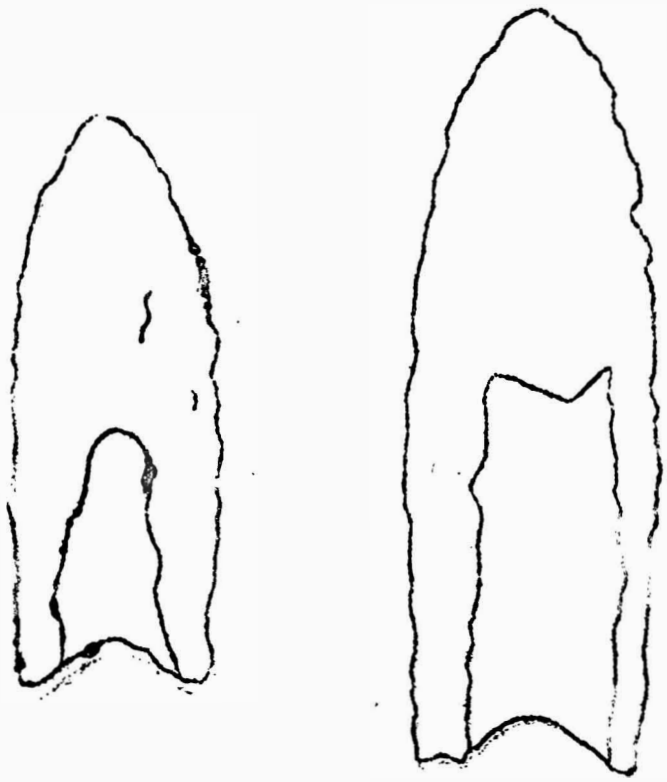

A PRELIMINARY DESCRIPTION OF A MILL CREEK CEMETERY NEAR THE BROKEN KETTLE MIDDEN MOUND

David Lilly and Roger Banks
Edited with Additions by Dale Henning, University of Wisconsin

A cemetery area located on a ridge some 1400 feet east of the Broken Kettle site (13 PM 1) was discovered by the landowner, Mr. Donald Banks, in September, 1964. Mr. Banks noted parts of a human skull in dirt thrown out of a badger hole and reported the find to the authors who investigated the area the following day and decided to test. Artifacts recovered attest to the conclusion that the burials are of Mill Creek culture.

The burials were located on a high ridge which slopes downward gradually towards the northwest. The slope drops at approximately 12% to the Broken Kettle Creek valley floor some 150 feet below the burial area. The burial area was under cultivation for many years during which much erosion took place, but it is now under permanent brome grass pasture. The soil type is Ida, characterized by a shallow 'A' horizon (top soil) and light buff 'B' and 'C' horizons with numerous primary and secondary carbonates. Soil evidence of great erosion is noted in the presence of secondary lime concretions on the surface. With Ph of 8.5, the soil is sufficiently alkaline that skeletal material is well preserved.

Documented evidence for burials related to the Mill Creek culture is not plentiful. Orr (1963 Vol. XII 49-53) discusses three ossuaries located (1) 3/4 mile northwest of Broken Kettle, (2) on a bluff top southeast of Broken Kettle and (3) located to the east, southeast of Broken Kettle. The ossuaries yielded very little cultural material. Orr also notes that seven burials had been found within the Broken Kettle midden at the time of his writing in 1939 (Orr 1963 Vol. XI:54).

According to local informants, the area near the burials reported herein has yielded many others to relic hunters as well as serious amateurs. An unknown professor from Morningside College, Sioux City, spent much of one summer excavating on a single knoll half a mile south of the current project. Burials in the immediate area, all located on high ground, have been dug and plowed out. Mr. John Behrens (personal communication), a former tenant of the present Banks farm, regularly plowed up portions of burials and artifacts in the cemetery area and once picked up two columella pendants (Pl. I, A, B) and 14 shell disc beads (probably all of conch or whelk) (Pl. I, C, D), at a point some 150 feet down slope on the same ridge. Mr. Behrens also recovered a complete pottery vessel from a point approximately 25 feet northwest of the recent excavation.

Burials on the high hills near other Mill Creek sites on the lower Big Sioux River valley have been dug by relic hunters, according to local landowners, but no information of the burial form or artifacts is available. Quite commonly, no artifacts are recovered. It is important to note that the general pattern of burial is that of multiple interment on high hills near the sites.

The Excavation

A grid system was established which encompassed the badger hole and extended well beyond in order to tie in prospective future excavations. Eventually, two squares were dug to sterile soil at 32 inches, one square was dug to 18 inches and three half squares were dug to allow removal of several burials. Each square

was excavated in three inch levels until skeletal material was encountered. Burials were then pedestalled, photographed, measured and sketched on grid sheets, according to the suggestions of Bass (1962). Unarticulated human skeletal material was encountered from the surface to a depth of 36 inches. A few rodent bones were also present. Cultivation had disturbed the upper eight inches and rodents and intruded burials resulted in much disturbance to the lowest level. Some disturbance by rodents was evident on every skeleton, although only very recent rodent holes could be discerned. Grave boundaries could not be seen, probably in part due to the extensive disturbance by rodents and man. Excavations were carried out by the authors with the diligent help of local enthusiasts on September 6, 7, 13, 20 and 27, 1964. Mr. Charles R. DeBusk, Director of the Sioux City Public Museum, lent much support and co-ordination to the project.

Materials Recovered

The following information is presented in short form in order to conserve space. Each burial is discussed separately; the artifacts recovered with each and the location of each item with respect to the skeleton are briefly described.

Burial 1

An adult male, tightly flexed on back, oriented with skull toward southeast, depth at 9 to 12 inches. Immediately to the right of the thorasic cavity, a granite mano (10 cm. diameter, 3.8 cm. thickness) with flat, worn opposing sides was resting upon an unmodified bison rib fragment and a broken spatulate bone tool or awl base. Beneath the bone objects within a circular area eight inches in diameter were seven smooth pebbles and one modified granite sphere (Pl. III). The items had apparently been placed in a container or small pit. One anculosa bead (Pl. IV, G) was found beneath a thorasic vertebra.

Burial 2

An adolescent, supine, extended, oriented with skull toward southeast, depth 10-16.5 inches. The skull was found face down over the right clavicle. The right fibula and tibia and left foot bones had apparently dropped into the badger hole. A bison (?) rib tool with rounded ends (Pl. IV, A) 17 cm. in length was beneath the right scapula lying parallel to the body axis. A series of cuts along one long edge indicate use as a chipping tool. An antler tip 14.5 cm. in length (Pl. IV, C) lay parallel to and inside the left femur near the proximal end. It also bears evidence near the tip of use as a flaking tool.

Burial 3

An adult male, supine, extended, oriented with skull toward southeast at depth of 11 inches. The skull was resting on the pelvic region of burial 2. Near the ankle, a single grit-tempered, buff-colored polished bodysherd was recovered. A small piece of bird bone bearing surficial evidence of cutting was located near the distal end of the right tibia and fibula.

Burial 4

An adult female, supine, extended, oriented with skull toward southeast at 14-20 inches depth. All small bones of the feet were missing. The left leg was crossed over the right at the tibia. The burial probably intruded into burials 6, 8 and 9. An anculosa shell bead was found under the mandible.

Burial 5

An adult male, tightly flexed on back oriented with skull toward east at 13 inches depth. No artifacts were recovered in association.

Burial 6

An adult partial burial, tightly flexed on back, the upper parts suggesting orientation toward the west, at 12 inches depth. A mandible was located 12 inches west of the pelvis on the same plane, but may not be associated. The skull and upper body were probably removed when burial 4 was intruded. No artifacts were recovered in association.

Burial 7

A mass burial covering an area approximately 48 by 60 inches and extending into the square walls. Bone was encountered from 7 inches depth and continued to 18 inches. The excavation was halted, although bone was obviously forthcoming from beneath that depth, due to time limitations. Several bone fragments were charred, but had not been burned in place. At least ten individuals were represented. No bone was articulated. Two pieces of grooved clinker, probably abraders, were recovered at 9 inches. Two tubular shell beads, three unmodified small riverine snail shells and two minute bodysherds were also recovered.

Burial 8

An adult male (?), supine, extended, oriented with upper body toward the south east at 31 inches depth. The skull is missing and may have been removed upon interment of burial 4. Two triangular, sidenotched and basalnotched projectile points (Pl. IV, J, K), measuring 3.3 x 1.4 cm. and 2.3 by 1.6 cm., lay along the right side of the thorasic area.

Burial 9

A young child, supine, extended with skull oriented toward the east at 15 inches depth. The lower portions were missing, probably due to intrusion of burial 4. Beneath the skull, a single shell disc bead of 7 mm diameter (Pl. IV, D) was recovered. A decorated fragment of thin bone (Pl. IV, I), possibly part of a bracelet, was found beneath the left rib.

Burial 10

An adult male, tightly flexed on back with skull oriented toward the southeast at 23 inches depth. The skull rested directly upon the thorasic area of burial 11. A small child's skull, burial 13, was encircled by the raised right arm and fingers of burial 10. Two small flat circular stones (Pl. IV, L, M), both ground to dimensions, were recovered to the left of the left orbit. One is of red-orange sandstone, measures 6.1 cm. in diameter, 1.7 cm. thick and has flattened edges. The other is of gray limestone and measures 5.9 cm. in diameter by 1.7 cm. thick and has rounded edges. These circular stones might be classified as discoidals by some workers. A bone awl (Pl. IV, B) probably manufactured of a deer metapodial and measuring 9.6 cm. in length was encountered 1 inch beneath the sandstone circular stone.

Burial 11

An adult male, supine, extended with legs at a 30 degree angle from the body axis, with skull oriented toward the southeast, at 25 inches depth. It was immediately beneath burial 10. No artifacts were associated.

Burial 12

An infant, supine, extended with skull oriented toward the southeast at 17 inches depth. Several portions of the skeleton were missing, probably due to rodent activities. An unmodified red quartzite flake was found 2 inches below the skull.

Burial 13

An infant skull and scapula fragment resting within burial 10 right arm, oriented in same direction as burial 10 at 23 inches depth.

Burial 14

An old adult female, tightly flexed on back with skull oriented toward the southeast at 22-24 inches depth. The burial was placed in a plaster cast and is now on display at the Sioux City Public Museum. A complete Mill Creek vessel (Pl. V), of Mitchell Modified Lip type (Ives 1962: 14) was found inclined toward and touching the skull.

Other

One tubular conch shell bead (1.6 cm. length, 1.1 cm. diameter), drilled from both ends, was recovered from the fill. Also recovered from the fill were a small (7 mm. diameter) shell disk bead and an unworked river mussel shell.

Concluding Remarks

The burial area excavated is unique in yielding artifacts in association with the skeletons which allows fairly definite assignment to the Mill Creek culture and probably to those who occupied the Broken Kettle site. Other burial areas have been dug and described, but the artifacts in association were not definitely attributable to Mill Creek manufacture or were removed by relic hunters, not reported upon and their context lost forever.

Considerable variation in burial practice is suggested. Some were apparently forced into small graves (burials 10, 11, 12, 13 and 14). Tightly flexed individuals may have been bound into position some time after death when the flesh had decomposed or been removed. With the exception of burials 6 and 7 (the mass burial), all were buried with the skull oriented upslope toward the southeast. Burial 7 is of particular interest. It is probable that it is evidence for secondary burial similar to the ossuaries described by Orr. The burned bone encountered in burial 7 suggests cremation of some individuals. Our information suggests four burial types for the Mill Creek hilltop cemetery areas: (1) fully flexed on the back; (2) extended and supine; (3) secondary, scattered non-cremated; (4) secondary, scattered cremated. It is possible that all forms were practiced simultaneously or that burial patterns changed through time. Grave offerings are not plentiful and are not of particularly high quality in workmanship. Broken artifacts appear to suffice as well as complete specimens. It is possible that further excavations might reveal status differences in the form of burial and presence, absence and form of grave inclusions.

This undertaking was merely the testing of a potential site. We hope that in the near future funds will be made available for professional work on this or another nearby Mill Creek burial site.

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AUTHOR'S NOTE: The single phrase "Edited with Additions by Dale Henning" does not begin to give Dale enough credit for the work he did on this article. Dale will make a final analysis on the artifacts at a later date. Dr. Wm. Bass will take the skeletal remains and study them. Tenative plans are for him to pick up the skeletons when he comes to Sioux City to do a special program for Mr. DeBusk at the Sioux City Public Museum, probably at the end of March. When all aspects of the final report are ready, we hope it will receive publication by some journal.

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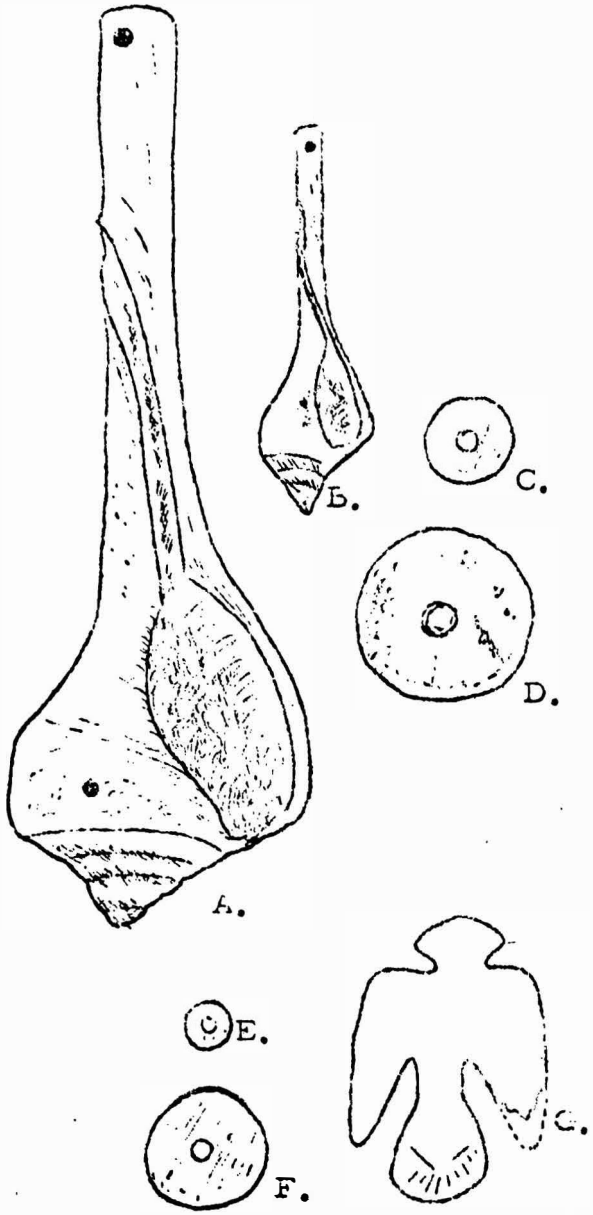


A. & B. Columella Pendants

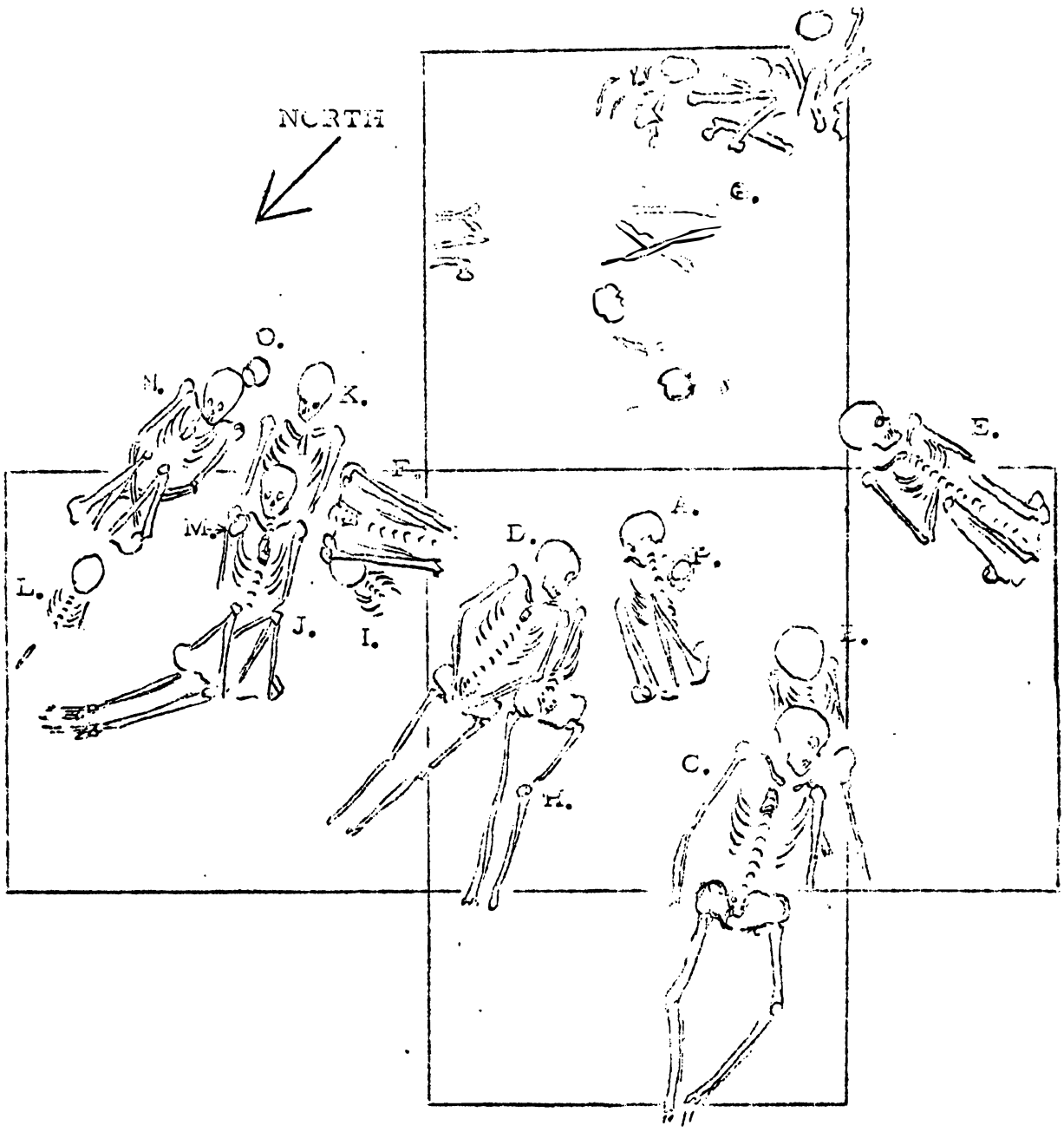
C. & D. Smallest and largest shell disc beads found by Mr. Behrens

E. & F. Smallest and largest shell disc beads found with

G. Thunderbird shell effigy by Tom Fugle several years ago. Associated with a burial - no other information available at this time.

Scale: Actual size

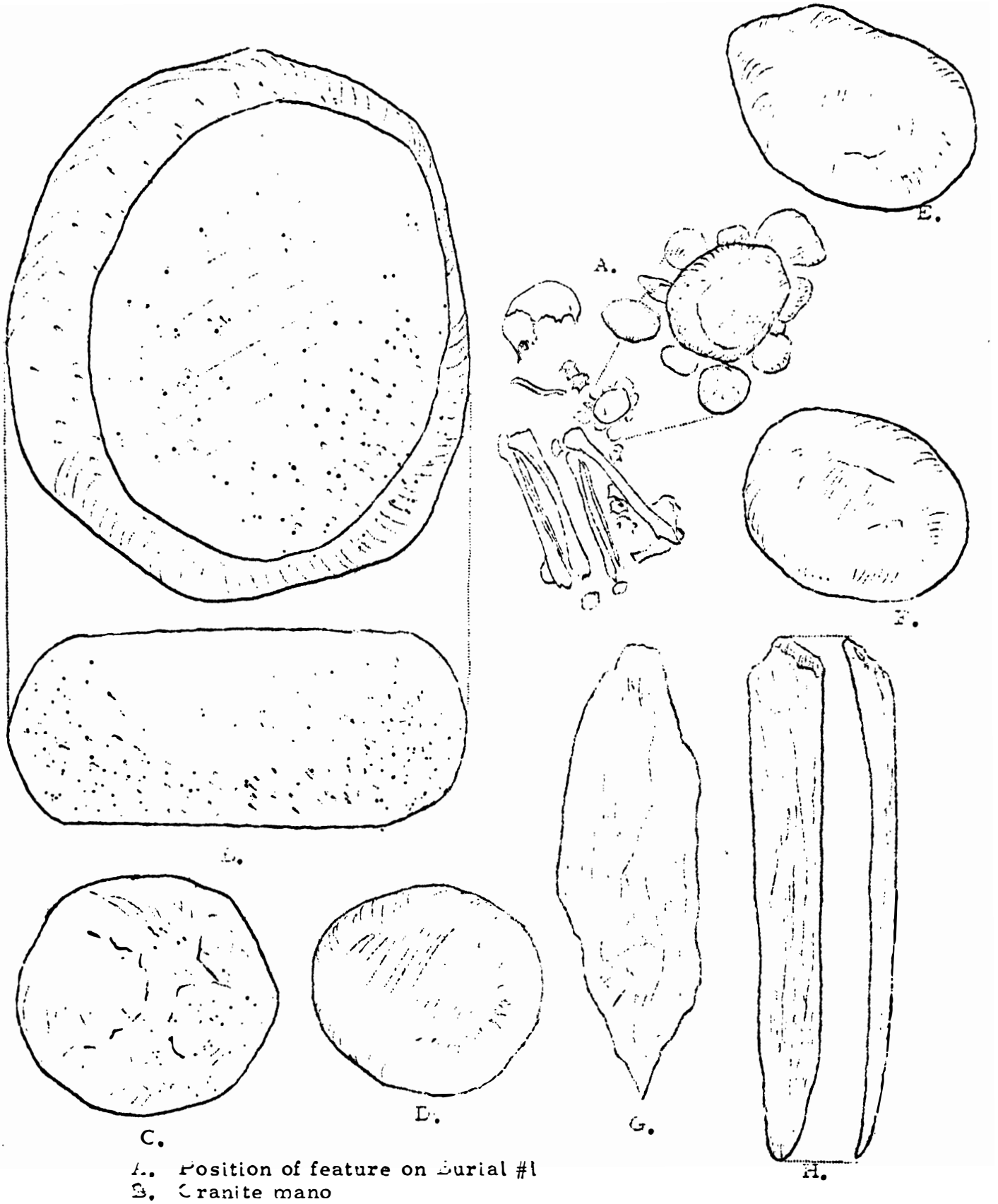
PLATE I



A.	Burial #1	L.	Burial #12
B.	" #2	M.	" #13
C.	" #3	N.	" #14
D.	" #4	O.	Pottery Vessel
E.	" #5	P.	Rock Feature
F.	" #6		
G.	" #7		
H.	" #8		
I.	" #9		
J.	" #10		
K.	" #11		

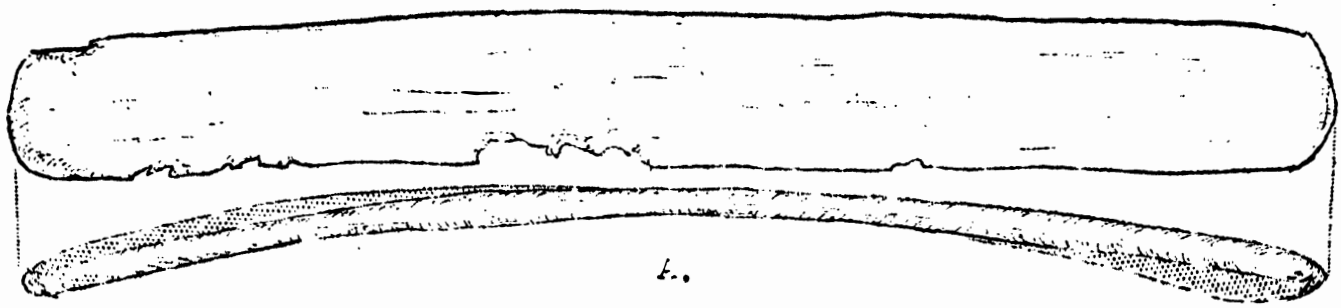
Scale: ½" = 1'

PLATE II

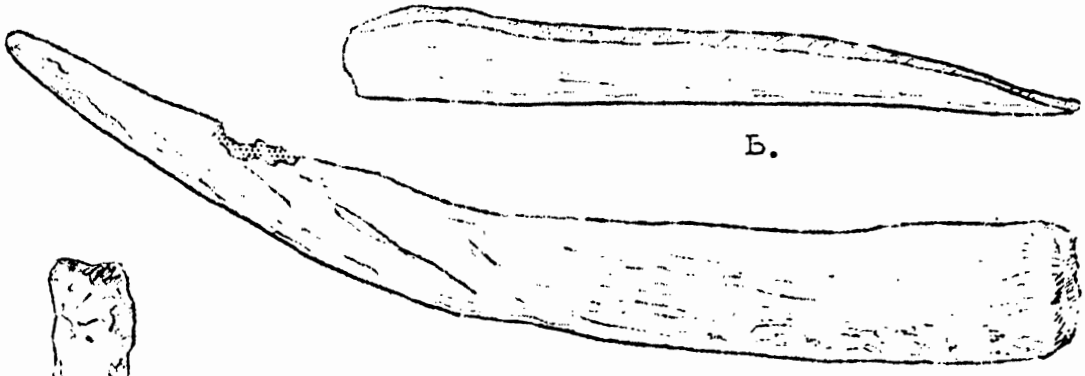


A. Position of feature on Burial #1
B. Granite mano
C. Modified granite sphere
D. - F. Water-smoothed pebbles
G. Bison Rib fragment
H. Bone tool

Scale: Actual size
Feature associated with Burial #1
PLATE III



A.



B.

C.

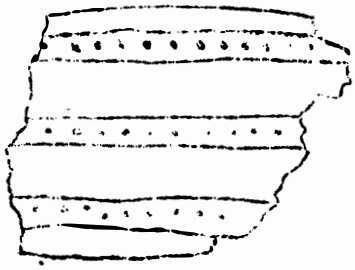
D.

E.

F.

G.

H.

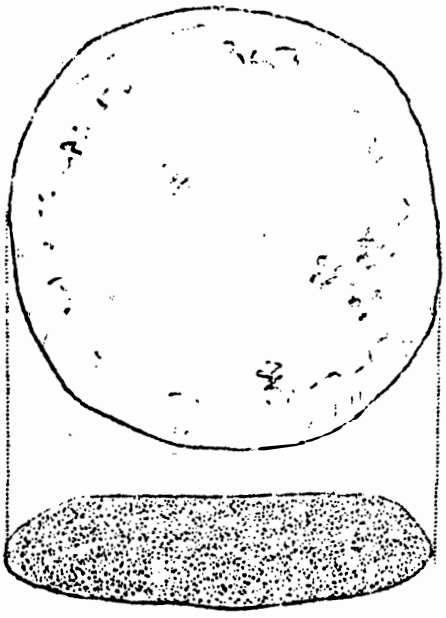


I.

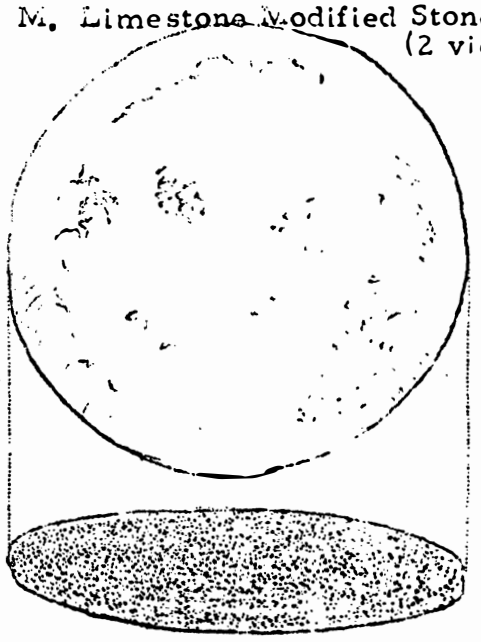
A. Rib Tool (2 views)
B. Bone Awl
C. Antler Tool
D. Shell Disc Bead
E., F. Shell Tubular Bead
G. Abraded Anculosa Bead (3 views)
H. Cut Bone Tube
I. Thin, Incised Bone
J., K. Projectile Points
L. Sandstone Modified Stone (2 views)
M. Limestone Modified Stone (2 views)

J.

K.



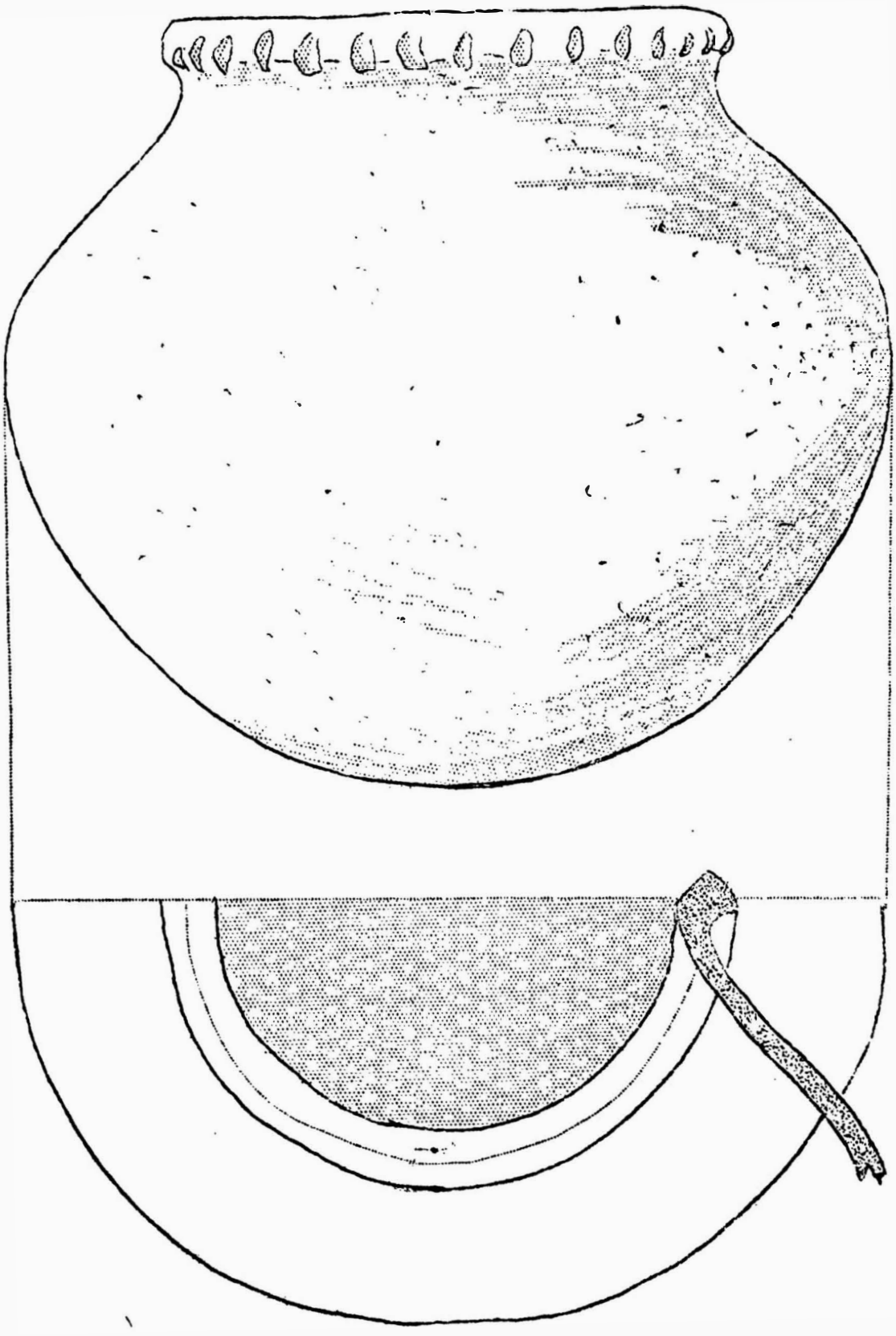
L.



M.

Scale: actual size

PLATE IV



Pottery Vessel

Sanford Ware
Mitchell Modified Lip
Grit Tempered

Scale: Actual size
PLATE V

DISK BOWL PIPES IN NORTHWEST IOWA

by
JOHN R. VINCENT

A recent examination of catlinite fragments in the Sanford Museum collection and private collections in the area has produced an unusually large number of pipe blanks and partially completed pipes. The collection contained 30 fragments, all of which had been obtained from Oneota and Mississippian sites in the immediate area. In analyzing the fragments, a definite sequence in the major steps in the manufacture of disk bowl pipes became more evident.

Before considering the methods used in manufacture of the pipes it may be well to first examine some characteristics of catlinite itself. A deposit of catlinite occurs near the town of Pipestone in Southwestern Minnesota where aboriginal quarry operations exposed a thin stratum of the red stone nearly a mile in length. Catlinite, presumably from this quarry, is found in abundance on many village sites in Northwest Iowa.

Catlinite is a very fine grained argillaceous sediment that occurs in a nearly unbroken stratum varying from 10 to 20 inches in thickness. This stratum is composed of 5 distinct layers of stone that vary from a pale redish tan to a dark red and includes mottled areas of both colors. The stone separates into the five layers when removed from the dark red quartzite which is found above and below it. As a result of the lateral separation of the layers, quarried pieces are rarely larger than 3 to 4 inches in thickness. The even grain, softness and relative freedom from impurities makes this material workable with even the most primitive tools. Contrary to previous statements concerning an increase in hardness when exposed to the atmosphere, present workers of pipestone take no precaution to preserve "freshness". At Pipestone, Minnesota, a supply is quarried in the fall and kept in arid winter homes with no apparent change in hardness. Samples taken from the plowed surface of the village sites, where they have been repeatedly exposed to the elements, are still workable although slightly harder. Experiments by the author indicate that repeated heating to high temperatures, as would occur in a pipe bowl during use, renders the stone hard, brittle and unsuitable for further alteration.

We shall now consider the major steps involved in making disk bowl pipes, as indicated by the fragments studied. Examination of pipe blanks and partially completed pipes indicates that the shaping of a pipe may be accomplished with the stone tool assemblage found at any Mill Creek or Oneota site in the area. Experiments indicate that any chipped stone tool with a prepared edge of the type found on projectile points and knives will serve to rough out a pipe blank. A rapid sawing motion quickly produces a V-shaped groove in the soft stone. In every sample examined the catlinite slab had been cut only partially through one or both sides and then broken along an incised line.

Figure 1

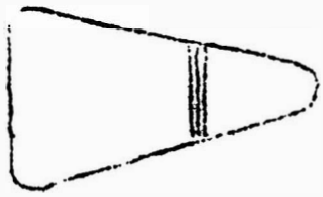


Figure 2

The completed pipe blank, as seen in Figure 1, is of a triangular shape which varies from an equilateral triangle to an acute triangle. The blanks are from 2 x 3 to 3/4 x 1 1/2 inches in size. The smallest blanks and partially completed pipes have stems with such small dimensions as to preclude drilling; these may represent rejected attempts at manufacture or perhaps were intended for only symbolic use.

After the blank was prepared, an initial cut was made across the top of the blank, thus separating the decorative front of the pipe from the disk bowl. (Figure 2.)

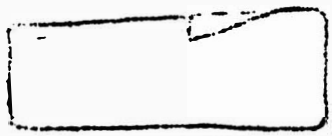


Figure 3

The decorative front was ground down at its juncture with the bowl to allow undercutting of the bowl, which then followed. (Figure 3.)

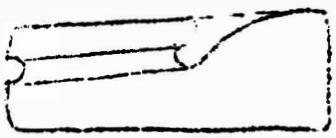


Figure 4

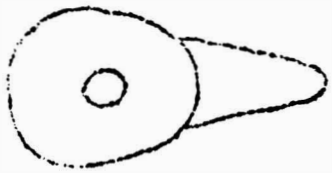


Figure 5

The disk at the top of the bowl was separated from the narrower column by a sawing technique similar to that used roughing out the blank. (Figure 4.) The bowl and stem were then rounded and prepared for drilling. (Figure 5.)

Figure 6

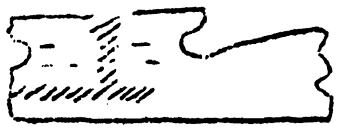


Figure 7

An examination of a number of fragmentary disk pipes indicates that the stem and bowl were drilled with a chipped stone drill of the type illustrated in Figure 6, which produced a V-shaped hole. Microscopic examination of the drill scars indicates that a continous rotary motion was used rather than a reciprocal twisting motion. Disk bowl pipes apparently had the stem hole drilled first, as indicated by excessively long stem holes. The bowl hole was drilled at a right angle and intersected the stem hole before its termination. (Figure 7.) This drilling procedure was not followed in the manufacture of single elbow pipes from the area. In the case of single elbow pipes, the larger bowl was drilled first and the stem hole was then drilled to intersect it. This would indicate that whatever the style of pipe, the largest drilling job was completed first and the smaller hole intersected it.

TWO CLOVIS POINTS FROM IOWA

Mr. Wayne Rummels of West Branch, Iowa, has been making surface collections in Southeast Iowa for a number of years and has an active interest in the archaeology of the area. He recently discovered two Clovis points in Cedar County near the Cedar River.

The projectile points are of a coarse white chert which is similar to material used for other types of projectile points found in the area. Both points are of lanceolate shape with slightly convex sides. The basel one-fourth of the edges and the concave base exhibit some attempt at smoothing. There are short flutes on each surface of the point formed by the removal of single flakes and irregular transverse flake scars which meet in the approximate center line of the projectiles.

Clovis points are often associated with extinct faunal remains in the southwestern United States and are thought to be from 10,000 to 15,000 years old.

Illustrations are actual size.