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ARCHEOLOGICAL SALVAGE AND SURVEY IN NEBRASKA:

Highway Archeological and Historical Salvage Investigations in Nebraska, 1965 to 1968

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A Preliminary Report of the Point of Rocks Archeological Survey, 1971

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as suggested by fragments exhibiting similar pleats. Undoubtedly the size of the garment has been altered by a certain amount of deterioration and the fragmentary condition of the specimen. The following measurements may, however, give some clue: 60 cm. long from bottom of neck opening to base of garment, 48 cm. wide (sleeve length unknown, sleeve diameter unknown, and size of neck opening unknown).

Woodwork: Very little woodwork was noted in the collection from the Genoa burials, although such items as cradle boards and bowls have been found in other Pawnee burials (Wedel 1936).

Mirror Frames (Plate V B, 1) These are circular rosettes of wood of unknown type in which small trade mirrors were set. A groove was cut into the outside edge of the rosette and a narrow leather thong was tied around it. Only one complete example was found within Grave 662, and its relationship to the interment is unknown. It was undoubtedly used as an ornament, perhaps as a pendant worn around the neck or attached to the shirt. The rosette measures 42 mm. in diameter and 7 to 9 mm. in thickness. The groove cut around it is 1 mm. wide, and the remains of the leather thong still adhere to it. A faint red color is still present in the wood, indicating that is has been painted. A description of the mirror will be found in the section on artifacts of Euro-American manufacture which follows.

OBJECTS OF EURO-AMERICAN MANUFACTURE

Textiles: *Woven Fabric* – A single fragment of soft woven fabric was found in Grave 662. The fabric appears to be a twill weave of cotton and silk. There is no way of determining the nature or size of the finished article, of which the sample is obviously only a remnant.

The soft material is woven in the uneven threeshaft twill. That is, the filling yarn interlaces two of the warp yarns. On each successive line, or pick, the filling yarn moves the design one step to the left, forming the diagonal. On the reverse side the design runs opposite to the face of the fabric. More filling yarns than warp yarns show on the face, a weave commonly called fillingface twill. The warp yarn, probably cotton, is dark, almost black in color; and the filling yarn, probably silk, is green.

A small fragment of black wool was found adhering to one of the brass infantry buttons found in Grave 663. The weave is plain and resembles crude homespun. The filling threads pass under and over alternate warp yarns similar to the early blanket weave of material known as strouding or blanket cloth. The fabric may have been used for a lining made of black wool.

A second example of woven material or fabric was recovered from Grave 662. The specimen was in such a poor state of preservation that it was removed in the clump of matrix in which it was found. The fiber appears to have been the hair of a bison. The cloth seems to be made of a moderately heavy two-ply closely S-twisted yarn of approximately thirteen twists per centimeter, which has undoubtedly been modified as a result of deterioration. The weave is of the "basket" style, in that two filling yarns pass under and over two warp yarns. Wedel mentions that twilled and checker work were the principal styles of weaving noted from other Pawnee sites (Wedel 1936). The cloth is soft, flexible, and was probably not dyed. The color of the specimen is dark brown. It was used presumably for robes and winter clothing. In this case the cloth was probably used as a funerary shroud.

The remains of an article of woven yarn and metal thread was found in Grave 662. The specimen represents the corner of some sort of small container such as a pouch or bag. The edges are folded over and are woven together. The metal appears to be long narrow strips of brass and is associated with two-ply cotton yarn of two sizes. The coiled basket weave has been used. Each coil is made up of one filling yarn, with the metal thread passing under and over three warp yarns in an S-shape pattern. Each filling yarn consists of two yarns in an S twisted about six turns per centimeter. The warp thread is the same yarn as the fillers but not twisted, simply double strand. The metal is of light gauge and measures 1 mm. wide.

Leather – A small fragment of a shoe sole was found in Grave 662. It was apparently from a small shoe or boot worn by the rather young child interred in the grave. Size and style of the shoe or boot is unknown. The leather appears to be tanned cowhide and measures 2 mm. thick.

Glass and Earthenware: *Glass Beads* – Glass beads of various sizes, colors, and shapes were taken in great numbers from all of the graves. Little difference in the types of beads was noted from each grave other than the presence or absence of a given type of bead. This may have been determined by the type of garment or

ornaments and also the sex of the individual found in each grave.

Most common in the collection are the small "seed" beads. They average 1 to 2 mm. in diameter and run, when strung, about nine to ten to the centimeter. In shape and size they are quite variable, and many have the perforation off-center. Several publications are available which describe the basic glass-working techniques used and which give distinctive characteristics of the bead produced by each technique (Pratt 1961, Ure 1835: 601, Parks 1883). On this basis the beads taken from the Genoa burials might be divided into at least four main types, with supplementary observations on modifications of these types and on size ranges and color present.

The most numerous type of bead found was made from glass tubing (Plate V B, 11). This method seems to vary little from one manufacturer to another through time. The method was essentially this: a mass of molten or liquid glass was picked up on a pipe. A central cavity was formed by blowing, which was maintained to keep the cavity from collapsing. The desired cross-section could be obtained by manipulating the glass with special tools. At a given temperature the molten glass was drawn rapidly until the desired size and shape of the tube had been obtained. After cooling, the tubes were broken up into smaller sections to be sorted for approximate diameter and then broken into bead-length by running them against a measuring device and breaking them over the edge of a chisel with a blunt tool (Parks 1883: 50).

The tubular beads from the Genoa burials have a circular inside cross section. These are commonly called basket beads. The most common form of beads made in this manner are the so-called "seed" and "pony" beads. These were made from short sections of glass tubing mixed with sand and wood ashes or with graphite and plaster. The glassworkers placed the mixture in a pan. The mixture was then heated to a sufficient temperature to soften the glass, which was then stirred, thus rounding the ends. Later this was accomplished by a rotating vessel of iron within a special furnace (Knight 1881: 254). Knight further comments that the packing mixture helped keep the beads from adhering to one another and kept the center holes from collapsing. The beads made in this manner are characterized by a slightly flattened spheroid shape with a smooth-edged center perforation. Variations in length of the beads is a result of the inaccuracy in breaking off the initial section. With this in mind we can readily refute the terms "seed beads" and "pony beads" as inaccurate terminology. The two words imply the existence of two size ranges as distinct manufacturing products. The beads from the Genoa graves range from about 0.9 mm. in diameter to 3 mm. diameter. However, considering the beads with respect to color and glass type, we find groups can be readily discerned. The greatest number of beads fall into a size range between about 0.9 mm. to 1.2 mm. with the next group ranging from about 1.2 mm. to 1.5 mm. Color and type of glass represented in these brackets vary, indicating that perhaps a simple screening method was used to sort sizes produced from the processed tube sections. One must also consider the item to be decorated with beads and the fact that Indian craftsmen sorted their beads for uniformity prior to use. Larger beads were used when decorating items which would come under hard use, usually the larger pieces such as blanket strips, legging strips, and saddle bags, while smaller beads were used on smaller items (Lyford 1940: 56-65).

The Genoa burial collection contains common beads in a wide variety of color, including:

clear transparent
slightly milky transparent
white opaque
light blue transparent
light blue opaque
medium blue transparent
dark blue translucent
dark blue opaque
light green transparent
light green translucent
dark green transparent
iridescent surface
yellow transparent
yellow translucent
gold
red transparent
red translucent
bronze opaque
black opaque

Two distinct variations of the common red transparent and red translucent beads were plentiful at Genoa. The smaller red transparent were made from a composite, producing beads with a white opaque core and a red transparent exterior. These fall in a size range from about 0.9 mm. to 1.1 mm. The second type of red bead is slightly larger, about 1 to 2.5 mm. These are beads of a type referred to as "wire-wound" or mandrel-wound beads.

The manufacture of these beads involves heating a rod of glass to the melting point and drawing out a thin thread of glass from it, then catching the thread and winding it in spiral fashion on a rotating tapered iron mandrel (Orchard 1929: 82). After the glass has cooled it can be slipped off the mandrel. Larger, thicker-walled beads of more variable design than those made from tubing were made in this fashion. Mandrel-wound beads are easily identified by their special grain structure and are often rather poorly made. The aforementioned red beads are poorly made compared to the larger white opaque and dark blue translucent beads also represented.

It appears noteworthy to comment further on the peculiarities of the red translucent mandrel-wound beads found at Genoa. It became apparent while preparing the beads for analysis that there was a considerable number of fragmentary red beads in our collection. An examination of these beads under a microscope disclosed minute cracks or fractures in the beads, causing them to be extremely brittle. The beads appear dull as the result of what appear to be incrustations of alkaline carbonates laid down as a product of the deterioration of the glass. A coating of alkaline carbonate appears on the fracture facets as well. Apparently a very sub-quality glass was used in manufacturing these beads. Plenderleith describes the process of glass deterioration as follows:

> The decomposition of glass is generally accompanied by the liberation of free alkali, and the form taken by the disintegration will be determined by the nature and amount of the alkali liberated. Free alkali is more or less hygroscopic, and liberation of lime and soda will cause deposition of moisture. Carbon dioxide will be absorbed from the atmosphere by this moist alkali, with the result that an incrustation of alkaline carbonates is gradually laid down, interspersed with silica, and with tiny flakes of semi-decomposed glass, the result being the creation of a surface that is opalescent [Plenderleith 1962: 335].

He further comments that this form of deterioration renders the glass very brittle. The characteristics of these beads could be considered diagnostic. Wedel reports similar beads taken from graves in the Mobridge, South Dakota, area which date circa 1803 to 1832 (Wedel 1955: 150).

Two other forms of mandrel-wound beads are represented in the Genoa collection. Both of these would be considered "necklace beads" and measure 6 mm. to 12 mm. in diameter. The smaller beads are a dark, transparent blue (Plate V B, 13). The small ends are irregular, indicating that they had been broken apart after being removed from the mandrel. The second example of simple-turn wound beads is coated with coral-colored lacquer. These along with the large white opaque glass beads may represent earlier bead types (Lyford 1940: 56-60).

These larger beads are uniform in size and appear to be glazed (Plate V B, 12). The core is dull, and the small end has been ground, forming almost parallel sides from end to end. The spiral striations indicate that they were made by the mandrel-wound method. The beads were found above and below the cervical vertebrae of Burial 663.

No examples of pressed glass or blown glass beads were found in the Genoa burials. The latter two methods are considered rather late and may not have been available to the Pawnee in large numbers until after their removal to Oklahoma in 1875. Evidence of native-made glass objects with the burials investigated at the site was also lacking.

Bottle – From the burial of possibly an adult female in Grave 662 was taken a small glass bottle (Plate VI A, 10). It measures 102 mm. long by 23 mm. in diameter and is complete even to the presence of a portion of the cork stopper. The bottle is round with no markings, has a narrow square collar, and is made of clear transparent bluish glass. This type of bottle is typical of the kind used for medical purposes.

Mirrors – Three small circular glass mirrors were found in Grave 662 (Plate V B, 1-3). They were made from thin, slightly iridescent glass circles measuring 23 mm. to 34 mm. in diameter. Two of the mirrors are identical in size. Only the glass remains of the smaller specimen. The two large specimens are metal bound and mounted on wood, as described earlier. There are no indications that the other example was set in a wood frame.

METAL ARTIFACTS

Iron

The objects made of iron constitute the greatest number of metal specimens taken from the Genoa burials. All are heavily oxidized and many are in a very poor state of preservation. We have not thought it worthwhile to remove the rust because of the generally fragile condition of the specimens. For the most part the objects

slightly convex edge or bevel and nearly straight sides. It appears to have been broken off about halfway down from the bevel and later retouched along the broken edge on the lower surface. It measures 25 mm. wide and 7 mm. thick. It was probably intended for use with a rifle or musket.

Trade Silver: This is a small irregular fragment of thin sheet silver with one plain surface and one decorated. The decoration consists of a gently undulating engraved line about 0.5 mm. wide created from a series of closely spaced, connected zigzag strokes.

Trade Beads: Two specimens are included. Both were made from tubes of glass 3 mm. in diameter. One bead is blue green in color and was tumbled to round off its edges after being cut to length. It is 2 mm. thick. The second bead is white and was not tumbled, leaving it with somewhat diagonal, sharp edges. It is 3 mm. thick.

Boat Spike: Square in cross section, the spike has a chisel point and a circular head that has four flat tapered sides and a flat top. There are a number of transverse ridges near the head on two opposite sides and also on the chisel tip. This is the 12-inch (measured from under the head) by 0.5-inch type. Probably traded to the Indians for tent pegs and other miscellaneous uses.

Lead Ball: This small, nearly spherical specimen is just over 4 mm. in diameter. Its size would indicate that it was used as shot rather than as a bullet. Possibly it is intrusive.

DISCUSSION

All in all, the impression one gets on examining this new material from the Yutan Site, especially the pottery, is that it is very similar to that which has been recovered from the various historic Pawnee sites that have been excavated in the past. This lends support to earlier findings at the Yutan Site. No evidence of possible multiple occupations by different cultural groups was found. There is the possibility that this is not the Oto village site mentioned by early travelers; but, if not, that site would have to be quite close by, according to early descriptions. A thorough survey of the river bluffs on both sides of the site, and perhaps on the opposite river bank, would seem to be the logical first step in attempting to solve this perplexing problem.

25 SD 19

A portion of this site may have been destroyed by county road construction. The site is situated on the southern end of a north-south running ridge that forms part of the north side of the Salt Creek valley. It is about ¼ mile south of Ashland. Flint spalls and flakes are plentiful in an area roughly 200 by 200 feet. No diagnostic material was found during the survey but stemmed projectile points were observed in the collection of the informant, Donald Graham. The site was not tested, since much of the material seems to be restricted to the plow zone. Cultural affinity is unknown, but in view of the point types found a late Archaic occupation is suggested.

25 SD 20 (Memphis Lake Site)

The Memphis Lake Site was discovered near the north end of Memphis Lake, which is in the southeastern corner of Saunders County. The site is on the east bank of the lake. A materials pit was located here, and much of the site was destroyed as a result of the removal of sand during the construction of roads in Memphis Lake State Park. Dale Blake of Waterloo, Nebraska, who discovered the site and informed the Nebraska State Historical Society of its existence, has found projectile points and blades on the surface. When the site was investigated, a thin, dark cultural level was seen in the east wall of the sand pit. This occupation level was noted to be 18 inches from the surface and contained charcoal, flakes, a few bone splinters, and fire-cracked rocks. Testing along this face produced no diagnostic artifacts.

Blake's collection from this site includes narrow expanding-stemmed projectile points and possibly other forms, judging from incomplete specimens. This points to an Archaic occupation at the site. Some of the material may be somewhat younger in age, although no pottery has ever been found. Further examination of the part of the site that remains is needed to clarify its cultural and chronological positions.

been hand made, lacks this flattening but may have been broken off on that end. The first specimen measures 100 mm. long, 99 mm. wide, and 7 mm. thick (below the butt). The second measures 128 mm. long, 88 mm. wide, and 4 mm. thick.

Scraper Blade (?): Illustrated in Plate XII B, 5, this lone specimen may have been intended for use with an elkhorn L-shaped scraper haft. It is a rectangular piece of iron 41 mm. long, 32 mm. wide, and 4 mm. thick. It is in a very rusted condition, but one of the shorter edges appears to have been sharpened.

Boat Spike: This single incomplete piece (Plate XII B, 9) is very similar to a complete specimen found at the Yutan Site, 25 SD 1 (see page 51 of this report). The complete spike is of the 12 inch long by ½ inch wide type and has a chisel point. Since this spike is broken off, its original length is unknown. In other details, such as width, head type, and the presence of transverse ridges on two opposite sides, it duplicates the complete specimen.

Iron Stake: Square in the cross section, the one stake specimen is 370 mm. long by 15 mm. wide and is flattened and splayed somewhat on both ends from pounding. One end narrows as if it may have had a chisel point before it was deformed from pounding.

Skillet Handle: The one specimen present (Plate XII B, 1) has been fashioned from a length of iron with flattened surfaces and beveled edges. One end was thinned down and bent into a loop, the tip then being welded back against the main shaft. The opposite end was flattened out, making a circular area for attaching the handle onto the skillet with rivets. The three rivets are still present at this end. Measurements are: length, 370 mm.; width of shaft, 15 mm.; thickness of shaft, 15 mm.; width of fastening end, 37 mm.; thickness of fastening end, 2 mm.

Kettle Leg: This single incomplete piece, triangular in cross section, tapers from 22 mm. at one end to 12 mm. at the other end. "This specimen appears to be a leg from a late trade kettle, which was made of iron, and should date roughly from 1830 to 1850 [Harris 1969]."

Iron Ring: One plain ring made from a rod 7 mm. in diameter is illustrated in Plate XII B, 4. Ring diameter is 57 mm. Its use is unknown.

Lead Ring: One specimen, probably intended for a finger ring, consists of two complete coils of an irregularly shaped strip of lead (Plate XII A, 10). The two ends are pointed. Width of the strip varies from 3 mm. to 4 mm. Maximum diameter of the ring is 24 mm., width is 7 mm., and thickness is 4 mm.

Silver Fragment: One specimen was found (Plate XII A, 11). It is a small piece of trade silver, the original size or shape of which cannot be determined. There is no engraving or other markings. Two circular holes are present in the piece, one slightly over 1 mm. in diameter, the other 4 mm. in diameter.

Unidentified Iron: These eighty-five fragments range in size from large sections of sheet metal, possibly cut from hoe blades, to very small amorphous lumps of rust. The smaller pieces are the most common, occurring usually in pit fill or in the excavations near the floor level. Fragments of several different types of tools and other articles are probably represented.

Sheet Brass: Twenty-one fragments are various sizes and shapes of thin sheet brass. Several of the pieces show evidences of cutting along the edges or have holes cut in them. Some of the smaller, more deliberately shaped pieces appear to have been intended as ornaments.

Glass Trade Beads: Seven specimens are included. The Bead Chart referred to below is listed in the bibliography (Harris and Harris Ms.). Further information by the same authors concerning glass beads, including a photograph of representative beads of the types defined by the Harrises, can be found in a report by Harris, Harris, Blaine, and Blaine (1965: 307-15).

Specimen 1338 (Plate XII A, 13) –

This is a glass bead: Type No. 13 on my Bead Chart, described as follows: "large, dark Bluebird Blue, translucent, olive-shaped necklace bead of simple construction. The glass is often cane-like in appearance. Tumbled." This bead begins to show in the trade around 1685 in small numbers. From around 1700 to 1740 however, it occurs in the trade in large numbers. After 1740, it drops down to very small numbers, and seems to completely disappear after 1770 [Harris 1969].

Specimen 1676 (Plate XII A, 14) –

This is a glass bead Type No. 56 on my chart which describes it as follows: "Small, but long (bugle type, 9 mm. long and 4 mm. in diameter), Brittany Blue, opaque, tube-shaped, probably a necklace bead, of simple construction. The glass of this bead is porcelain-like in texture. Tumbled." This bead has the same time range as Type No. 13 above [Harris 1969].

Specimen 1140 (Plate XII A, 15) –

> This is a glass bead Type No. 46 on my chart which describes this specimen as follows: "Small, Peacock Blue, opaque, donut-shaped seed bead of simple construction. The glass of this bead has the sugar-cane-like texture of Bead Types 9, 10, and 11. Tumbled." This type is not definitive because it occurs from about 1685 to 1850 in about the same percentages [Harris 1969].

Specimen 4040 (Plate XII A, 16) – "This is the same as Specimen 1140 above, my Type No. 46, and is not definitive [Harris 1969]."

Specimen 3225 (Plate XII A, 17) –

> This is Type No. 45 on my chart, which bears the following type description: "Small, white, opaque, donut-shaped seed bead of compound construction. The two layers of glass in this bead are the same as those in Bead Type No. 4. Tumbled." Like Type No. 46 above, this bead occurs from about 1685 to 1850 and is not definitive [Harris 1969].

Specimen 3509 – "This bead is so fragmentary that little can be said about it [Harris 1969]."

Specimen 3429 (Plate XII A, 18) – "This is the same type as Specimen 3225 above. It is not definitive [Harris 1969]."

Shell Trade Beads: The largest of these four beads (Plate XII A, 19) is a shell hair pipe of the type made from the lip of the West Indian conch *(Strombus gigas)* from the 1770's to the 1880's (Ewers 1957: 42-45). It is just over 60 mm. long, has a maximum diameter of 7 mm. at the midpoint, and tapers to less than 5 mm. on each end. The hole is 2 mm. in diameter. The other three specimens (Plate XII A, 20), all straight-sided tubular beads, are of the type sometimes referred to as "wampum beads." They are 4 mm., 7 mm., and 10 mm. long and all about 3 mm. in diameter.

These beads were nearly all that remained of a burial that had been disturbed by grading equipment. If they were, in fact, originally all close together in the grave it may indicate that they were used in a hair pipe necklace rather than as hair ornaments or some other type of adornment. In necklaces the hair pipes were sometimes strung together with the smaller clam-shell wampum beads (Ewers 1957: 56, pl. 21, b).

Gaming Piece: A single disk of glazed earthenware, white on the interior surface and mottled blue and white on the exterior surface, was discovered and is illustrated in Plate XII B, 12. It has been cut to shape and then ground around the edge to form an imperfectly round piece with a maximum diameter of 25 mm. It is 5 mm. thick. Similar specimens have been reported from Fort Pierre II (Smith 1960: 145, pl. 30, a-c) and Fort Atkinson (Kivett 1959: 65, pl. V A, 10). A description of the way these pieces were employed in Indian gambling is given by Denig (1930: 567-69, pl. 72).

Glazed Earthenware: Two different patterns are represented in the three fragments. One fragment is dark blue in color on both surfaces (Plate XII B, 11); the others are white on the interior surfaces with white, black, brown, and light tan areas on the exterior (Plate XII B, 10). These fragments are too small to determine the nature of the pattern. All are 5 mm. thick.

Stoneware: Both of the two fragments represented (Plate XII B, 13) are glazed on the exterior surfaces only with what appears to be a salt glaze. Color of the paste is buff, decreasing in darkness from the interior outward. The clear or nearly clear glaze gives the exterior surfaces a yellowish cast. Thicknesses are 8 mm. and 9 mm. Both are probably from the bodies of jugs.

Bottle Glass: Two colors were found, olive green (five fragments) and aqua (two fragments). The olive green pieces (Plate XII B, 15) appear to be from hand-blown wine bottles, while the two aqua fragments (Plate XII B, 16) are from bottles that were blown in molds, possibly medicinal bottles. No embossing is present on any of the fragments.

Clay Pipe: One fragment was found (Plate XII B, 14), the bowl portion of an elbow pipe intended for use with a reed stem. It is gray in color and decorated around the bowl with a series of raised, vertically oriented parallel lines. These are slightly bent to the right in the middle, forming a herringbone pattern. Maximum diameter of the bowl is 25 mm. A complete specimen of apparently identical design from Fort George, occupied during the 1840's and 1850's, is illustrated by Smith (1968: pl. 14, i).

FAUNAL REMAINS. Unworked animal bone was quite abundant in most of the features excavated during the 1967 to 1968 investigations. Over 900 pieces were collected. Unworked shell fragments, on the other hand, although present in almost every feature, occurred in only

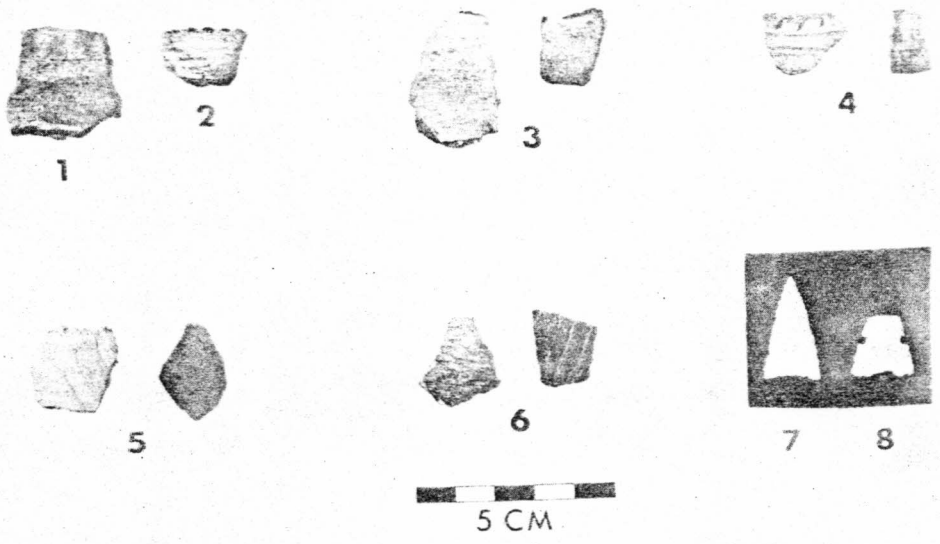

PLATE V A: ARTIFACTS FROM MADISON COUNTY

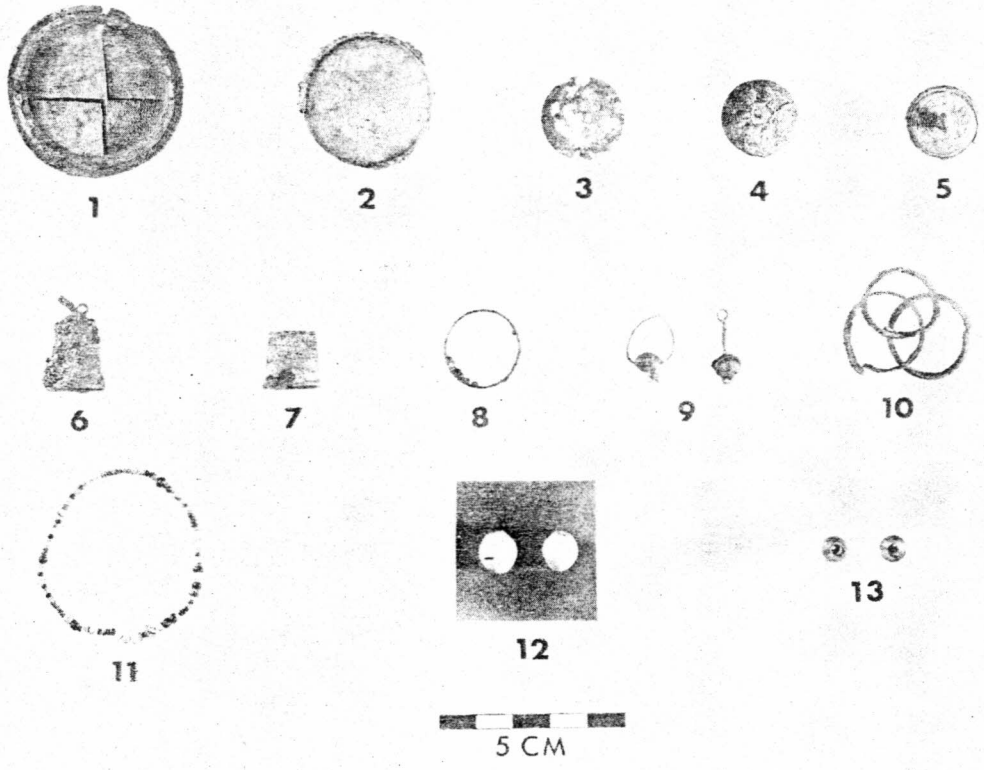

PLATE V B: ARTIFACTS FROM 25 NC 20, NANCE COUNTY

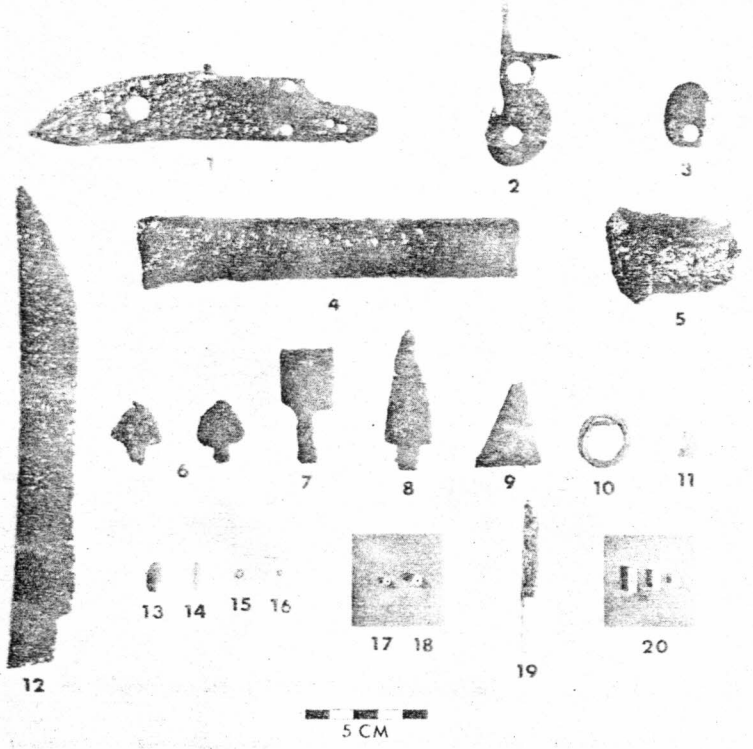

PLATE XII A: ARTIFACTS FROM THE LINWOOD SITE, BUTLER COUNTY

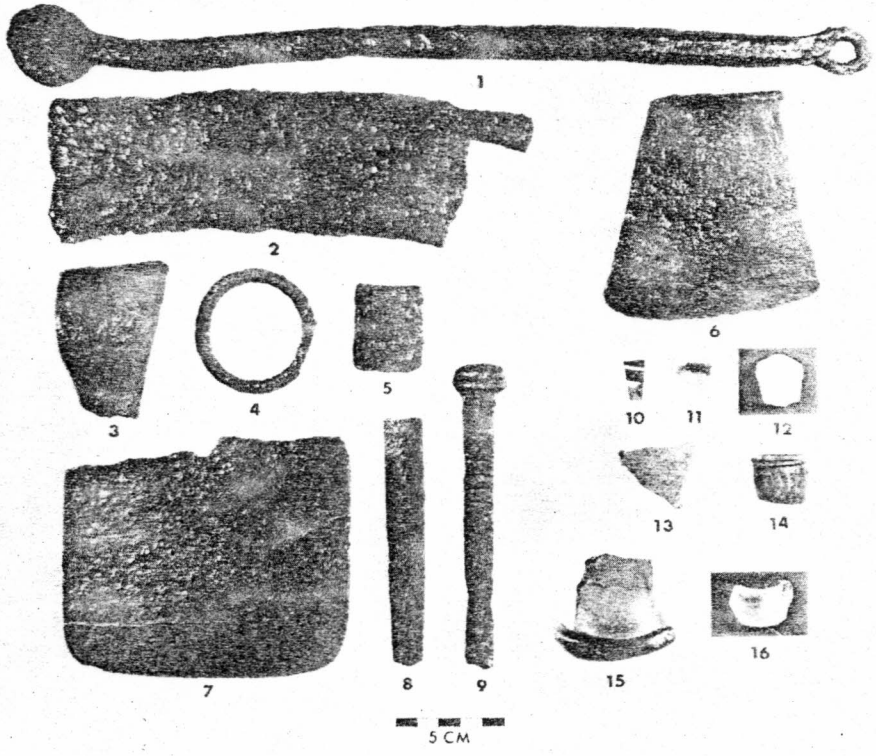

PLATE XII B: ARTIFACTS FROM THE LINWOOD SITE, BUTLER COUNTY