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OF THE

Texas Archeological and  
Paleontological Society

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# Foreword

## TEXAS ARCHEOLOGICAL PROGRESS

Prior to the organization of Texas Archeological and Paleontological Society there was very little known concerning Texas archeology as a whole.

It is true that a few investigators widely scattered over the vast domain of Texas had been quietly collecting materials and data and preserving them against the future day when some cultural urge would be born in the minds of Texans to preserve to posterity both the remnants of its historic past, and the artifacts of the strange races which inhabited Texas in the remote mists of antiquity.

So early as 1907 Prof. T. L. Eyerly began research in the Slab House Culture on the Canadian River; later Floyd V. Studer and Warren K. Moorehead did research in the same field. Dr. J. E. Pearce at Austin had long investigated mounds in Central and East Texas. Prof. Victor Smith and associates had done research in the Big Bend Culture rock shelters; George C. Martin and associates had worked in the Coast area around Rockport and Corpus Christi; Col. M. L. Crimmins, Mrs. Eileen E. Alves and associates had investigated in the El Paso Region.

With the exception of an occasional college or university bulletin containing an article on archeology among those on various other subjects there was little published in Texas on the subject.

In between the local areas in which the few investigators had worked there existed areas which were in some instances hundreds of miles across, in which not only had no research been done but even the existence of any sort of prehistoric remains was not only utterly unknown to the populations living within the area, but equally so to scientists as well.

Archeologists usually wrote of the Plains Culture as though it were one homogeneous whole of culture traits, being ignorant of the facts they assumed that because the culture of the historic horse Indians was wide spread in its superficial resemblances, that therefore the same uniformity probably had always existed, and that it was in some manner dependent on the simplicity of making a living by following the bison herds, and that this induced a nomadic life little conducive to the development of arts, crafts, and civilization.

Perhaps the thought therefore that little spectacular was to be found in the Plains area, while a pot hunter's paradise awaited just beyond, influenced trained scientists to pass over the area as not worth the time and trouble of an investigation.

How mistaken they were has been abundantly proved in the past issues of this Bulletin. The discoveries in the Abilene Region have been especially startling. Among these are age-old stratified camp sites buried at 4, 6, 8, 15, 24 ½, 27 and 30 feet beneath land surfaces which yet bear on the present top soil surfaces above them flint reminders of the last flint workers of some one or two hundred years ago.

In addition skeletons of a strange long headed, low browed, thick skulled, curved boned race which lived in the region long ago and apparently made personal ornaments of bone, stone and other materials of workmanship which appears to have been of a better type than that of recent Indians.

Great campsites show that man lived for years in places where now no water may be found within miles of the sites.

Artifacts are found with thick shells of patina which must have taken many millenniums of time to accumulate. Mortar holes in great groupings in hard sandstone which have been there so long that rainwater alone has almost washed away those existing on any slight boulder slope although the sod filled holes on the level tops of boulders are 17 inches deep. Evidences of settled permanent towns which must have remained over periods of many years exist. These and many others which the Society has made known in its publications not only justify its existence but indicate the possibilities of the future. The time is now here when it is impossible for students of archeology in America to keep up with archeological progress and not be familiar with the publications of this Society.

Until the Bulletin of Texas Archeological and Paleontological Society appeared there probably was no reliable scientific publication on archeological subjects in Texas which impartially published the results of the researches of competent archeologists from all parts of the State.

### *The Society's Income*

The publications of The Society are financed solely by the dues payments of members, sales of Bulletins to museum, college, and university libraries and by voluntary donations of scientific minded individuals to the publication fund of The Society. Neither officers nor editor receive any pay for their work, nor are manuscripts paid for. The whole income of the Society, less postage and stationery costs, may thus be devoted to publication costs. None of the officers of The Society are professionally engaged in nor derive any income whatever from archeology; their interest is purely that of scientific research and their livelihoods are obtained from professional activities in other fields.

The business of The Society is conducted upon a cash basis in so far as is possible, and this has enabled The Society which began publication at the beginning of the great business panic of 1929 to remain out of debt and increase the size of its volumes when many other ventures were ceasing publication.

### *History of "The Society"*

Archeological research was started in the Abilene Region (a huge previously blank space in Texas archeology) by the Editor during the summer of 1927. During the following year such archeological discoveries had been made that sufficient interest was aroused to make possible the organization of The Society which took place in the Editor's office on October 3, 1928. The Society's organizers present consisted of a small group of business and professional men whose names follow: Dr. Julius Olsen, Dr. Otto O. Watts, Dr. R. N. Richardson, Dr. W. C. Holden, Dr. Cyrus N. Ray, E. B. Sayles, Ernest W. Wilson, Frank Grimes, W. A. Riney and O. K. Hobbs. Before the end of the first year the membership had increased so that sufficient funds had accumulated to begin publication of The Bulletin, and this has been regularly issued in September since then.

### *Objects of The Society* (Excerpt from its charter)

"The society was organized and chartered in pursuit of a literary and scientific undertaking; for the study of the history, prehistory and the major

and minor artifacts of man and the fossils representing the past floras and faunas of Texas; for the encouragement of the proper collection and preservation of such artifacts and fossils in museums and their study and classification and the publication of the results of the researches incident thereto." The field of activity outlined above proved to be too great for one Bulletin and publication has therefore been almost exclusively devoted to archeological research and discussion of faunal remains dating from Pleistocene times or such as possibly may be found with man's artifacts and remains.

### *A Modern Central Museum Needed*

When the Society was founded there were no museums in Texas worthy of the name in its modern application. Such school collections as existed were little if any better organized or conducted than the usual individual arrow head collections.

Within the past ten years several small regional nuclei of the sort which it is hoped will eventually grow into real museums have been started in various parts of Texas.

But today Texas with its nearly six million inhabitants has no real modern museum with buildings, display equipment, research laboratories, staff of scientific experts nor sufficient regular income or endowment to maintain an institution of sufficient size and prestige to serve the whole population of Texas.

We hope that those who are accustomed to giving vast sums to educational projects and museums in foreign countries and other regions already adequately equipped, will give some thought to the millions of intelligent native Americans of Texas who have no available modern museum facilities.

The movement for a central State-wide Texas Memorial museum at the University of Texas now seems assured of success, and this probably offers the best chance for the building of a modern museum in Texas, and this project deserves the united support of the whole State.

We feel that the seeds of scientific research sown by the unpaid workers of Texas Archeological and Paleontological Society, throughout the years, are now bringing forth substantial results.

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## ORNAMENTS OF EAST TEXAS INDIANS

BY A. T. JACKSON

Like all aboriginal Americans, the early occupants of East Texas delighted in personal adornment.

Due to a damp climate, and the location of cemeteries and campsites in the open, all perishable ornaments have disappeared. But those made of shell, bone, clay and stone frequently are found in a good state of preservation. While not numerous, the ornaments occur with some frequency. They come from burials and midden deposits.

Ornaments found in this extensive region include beads, pendants, gorgets, earplugs, labrets, banner-stones, boat-stones, and various other articles of an ornamental nature.

Beads, the most common of all ornaments, are made from a number of materials. Among the types are perforated shell, massive bone, and shell, small tubular bone, and shell, discoidal shell, fossil seed, pearl, glass and porcelain beads. The University of Texas collection includes some 10,000 beads from East Texas sites.

Perforated shell beads are occasionally found in Southeast Texas. They were made from a small shell, *Olivia litterata*, usually by grinding or drilling one or two holes. Frequently nothing was done but the grinding off the closed end. Beads of this kind have been found at various sites.

These shells, with one end ground off and a hole through the side near the other, are identical in type with those reported by Anderson<sup>1</sup> from the Rio Grande delta region. But in no case have we found a "clapper" in place, to warrant classing them as "tinklers."

Beads made from the columella of the conch shell, *Fulgur perversum*, are more numerous than any other. The greatest number found in one grave—Burial B-6, T. M. Sanders Mound No. 1, Lamar County—was approximately 2500. This was a single burial.

Fifteen short massive bone beads were found in a midden deposit on A. Deals Ranch near Riviera Beach, Kleberg County. The beads, made from deer and other animal bones, range from 1 ½ to 3 inches in length and ¼ to ¾ inch in diameter. The ends were hacked and roughly ground down.

An occasional short massive bead, from the columella of a large conch shell, shows up in burials. They are found from Galveston to Red River counties, with only a few at a place.

The long tubular bone and shell beads sometimes are 6 or more inches in length. The average is about 3 inches. Some of the beads are made of highly polished turkey bones. Others are from the columella of the conch shell. The latter were laboriously drilled longitudinally. The finding of several very long artifacts of this type back of certain skulls, in multiple burials at the T. M. Sanders site, suggests their use as hair ornaments.

A few large discoidal bead-like specimens also were found on the skulls in burials at that site. Small discoidal beads, from the shell of the fresh water mussel (*Unio sp.*) occasionally are found in burials and camp refuse. They were present in a historic site at Espiritu Santo Mission, Goliad County. Similar beads were around the neck of a woman in a grave at the Oso site, Nueces County.

Lithospermum seeds, to the number of 83, were in burial B-6 at the T. M. Sanders place. The small white seeds were not drilled. No others have been found in the East Texas region, although quantities of them, pierced for use as beads, show up in rockshelter burials in Coryell, Bosque and Bell counties, and a few from a cave in Culberson County. These fossil seeds were very fragile and had to be treated with preservative.

With 6 burials at the Sanders place were 473 beads made from small fossil shells. The shell, which averages about ½ inch in length and ¼ in diameter, has been identified by Dr. E. H. Sellards of the

Bureau of Economic Geology, University of Texas, as "*Oliva gracilis*, from the Eocene, probably in the region of the coast." Slight grinding at the end was all the work required to convert the shells into beads.

Twenty-three pearl beads were found at the Sanders place. One was in burial B-20, immediately above the suspension hole in a shell gorget, beneath the chin of the central skeleton in a group of three. The others were with burial B-6. These fresh water

pearls, averaging about  $\frac{1}{4}$  inch in diameter, had been neatly drilled. They retain some of their former luster. These are the only pearl beads discovered in five years of intensive field work.

Harrington<sup>2</sup> reports the finding, in a mound near Ozan, Arkansas, of "a number of fresh water pearls, probably from the mussels of nearby streams, drilled for use as beads and representing round, oval and baroque forms."

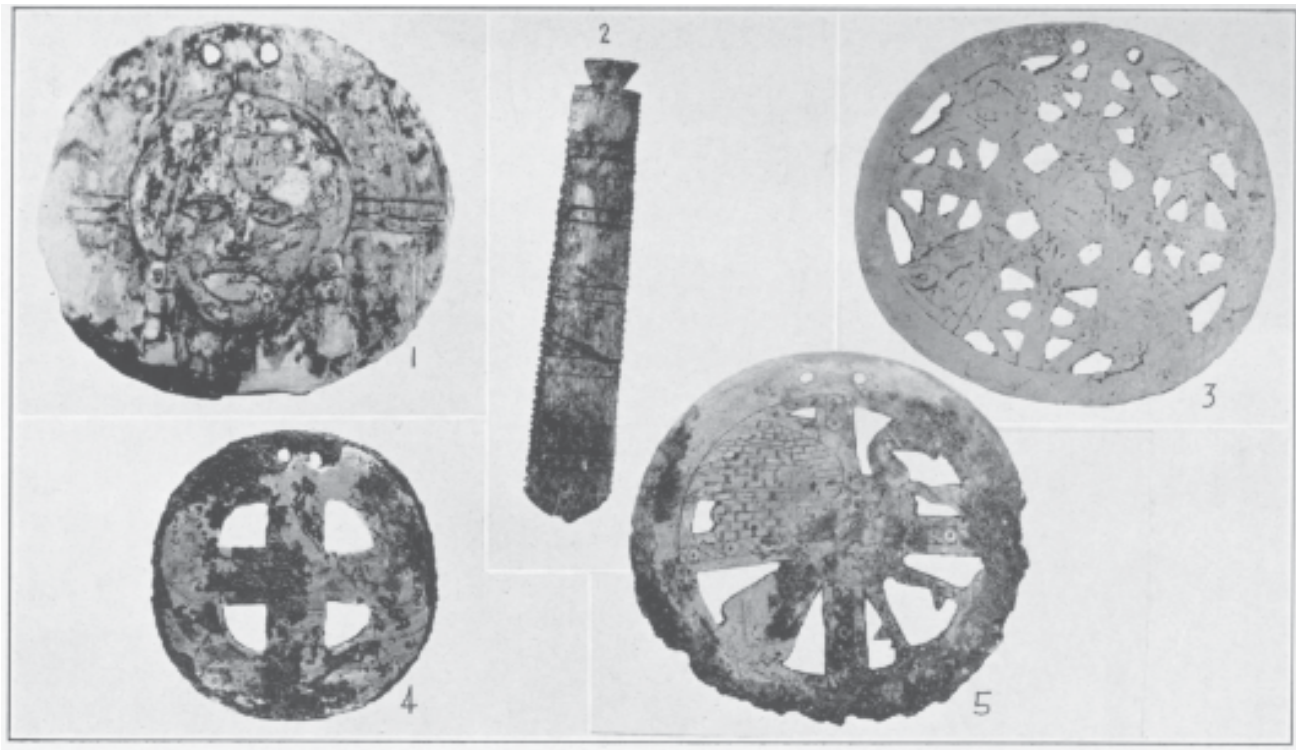


PLATE 1.

1. Human head gorget, carved from a conch shell. Diameter 2 1-2 inches. The head stands out in relief and shows great skill in shell work.

2. Bone pendant of the bull-roarer type, from a burial in Galveston County, Texas. Artistically carved with notched edges and band-lines and punctate decorations.

3. Delicately carved conch shell gorget, found with a burial in Lamar County, Texas. The design combines five cut-away equal-armed crosses and five faintly carved human heads. The heads show large, hooked noses, open mouths, thick lips, long eyes and ear ornaments. The central head is in the center of the large cross, with both enclosed in a circle. The remaining four heads are evenly spaced between the four small crosses. The rim of the gorget forms a large circle enclosing the intricate designs. Dimensions:  $3 \frac{3}{4}$ " x  $3 \frac{1}{2}$ " x  $\frac{1}{8}$ ".

4. Gorget of conch shell, found with a burial in Lamar County, Texas. The decoration consists of a cut-away equal-armed cross.

5. Conch shell gorget, carved to represent a turkey cock, from burial B-20, Mound No. 1, T. M. Sanders farm, Lamar County, Texas. Diameter of gorget is 4 3-4 inches. Note the spurs, wattle, beard and that the equal-armed cross is employed as a background. Edge of specimen is decayed.

Thus it may be seen that this region is near the edge of the Mound-Builder pearl complex, which seems to have centered in the Hopewell area.<sup>3</sup>

In the discussion of shell ornaments, frequent reference must be made to the T. M. Sanders site. More shellwork came from those 21 graves than from all other East Texas excavations. Of the 7,067 beads from this site, the types represented were as follows:

Kind of Beads	Number of Beads
Small flat conch -----	4,516
Medium cylindrical conch -----	894
Tiny cylindrical conch -----	1,117
Long cylindrical conch -----	36
Disc conch -----	6
Small fossil shell -----	473
Pearl -----	23
Small bone -----	2
	7,067

An unmistakable label of a historic site is shown by glass beads and other European trade articles. Frequently the only evidence of white contact is in the form of beads. In some historic sites they are numerous; but in most East Texas camps and cemeteries they are few in numbers. At the Richard Patton site, Anderson County, two large, blue glass beads were found in one of the graves. Had it not been for the finding of those two beads the site might have been classed as prehistoric.

At only one place, Clements Bros. farm, Cass County, have conch shell and glass beads been discovered in the same grave. That was in burial H-15, where 26 blue trade beads were together with 36 conch shell beads.

At the H. E. Womack site, at Garrett Bluff on Red River, Lamar County, were found a great many glass and porcelain beads on the surface of an extensive campsite. They were found with flint and metal projectile points, fragments of Indian pottery, etc. All the surface beads were large.

Of eight graves exhumed at that site only one—burial C-5—contained beads. Of the 19 glass beads

in the burial, none were large nor of the type found on the surface of the adjacent campsite. No shell beads were found.

The greatest number of European beads found in a midden deposit was at an old Spanish mission—Espiritu Santo—near Goliad. Here were many glass beads, most of them of the small type. The colors were blue, red and white.

It is interesting to note the positions in which beads were found in graves. Many were around the neck. Others were in a variety of positions, some tending to show the possible uses to which they had been placed in the adornment of the deceased.

Burial AC-1 in the Caplen Mound on Bolivar Peninsula, Galveston County, had 46 conch shell beads, ½ inch long, around the waist. There was red paint on the beads. The beads probably had been attached to a belt or on a skin garment. One skeleton had a number of beads on and around the skull, apparently having adorned the hair at the time of interment. Another burial had 90 small beads under the chin. In burial AC-55 four large beads were beneath the skull.

In burial B-2 T. M. Sanders place, were several hundred conch shell beads around and over the skull, around the wrists and loose in the dirt near the waist. Others formed a band around the legs just beneath the knees. The finding of beads thus distributed would seem to indicate that a beaded coverlet had been spread over the face and shoulders; that beads were worn around the wrists; and that the bottom of the skirt was beaded.

In Burial B-6 small conch shell beads were along the outside and inside of the arms, from slightly below the shoulders to the wrists; and around and between the legs slightly below the knees. Burial B-8 had beads around the wrists and about the legs just below the knees.

In burial B-15 beads were found around the ankles as well as the wrists and neck. Beads were located in like manner in burial B-20. Of five other burials, all had beads around the wrists and neck, two around the ankles and one below the knees.

In burial B-17 was a redware bottle around and beside which were small shell (*Oliva gracilis*) beads about 3/8 inch long. Apparently the beads were on a coverlet of some kind. Around a conch shell in burial B-20 were 316 small beads made from the columella of the conch shell. In a large bowl in the latter burial were two disc shell beads, an undrilled shell disc and four small pendant-like bone ornaments.

Pendants are comparatively scarce. But the few found are of various materials—bone, shell, animal teeth and stones. The most artistic and best decorated is a bone pendant from burial AC-44 at Caplen Mound. It was of the bull-roarer type, 4 1/8" x 3/4" x 1/16", with notched edges and band lines paralleled by punctate decoration. The ornament rested over the left ear and may have been worn in the hair.

An interesting type of insect effigy shell pendant is represented by five specimens. One of these, from a midden deposit on L. L. Winterbauer farm, Wood County, is made from the shell of a fresh water mussel (*Unio sp.*). It is 2 1/2 inches long and has a maximum width of one inch. It is carved in the general shape of a locust or grasshopper. On the obverse side it bears incised lines and dots representing the tail, wings, head and eyes. The notches and groove that gave shape to the head also served for suspending the pendant.

Three of the specimens came from camp refuse, at the edge of a cemetery, on the Clements Bros. farm, Cass County. They are made from a split columella of the conch shell. The incised lines are on the convex side. The reverse shows half of a drilled hole, running longitudinally, as if a long bead had been split. The designs are almost identical with those on the mussel shell pendant.

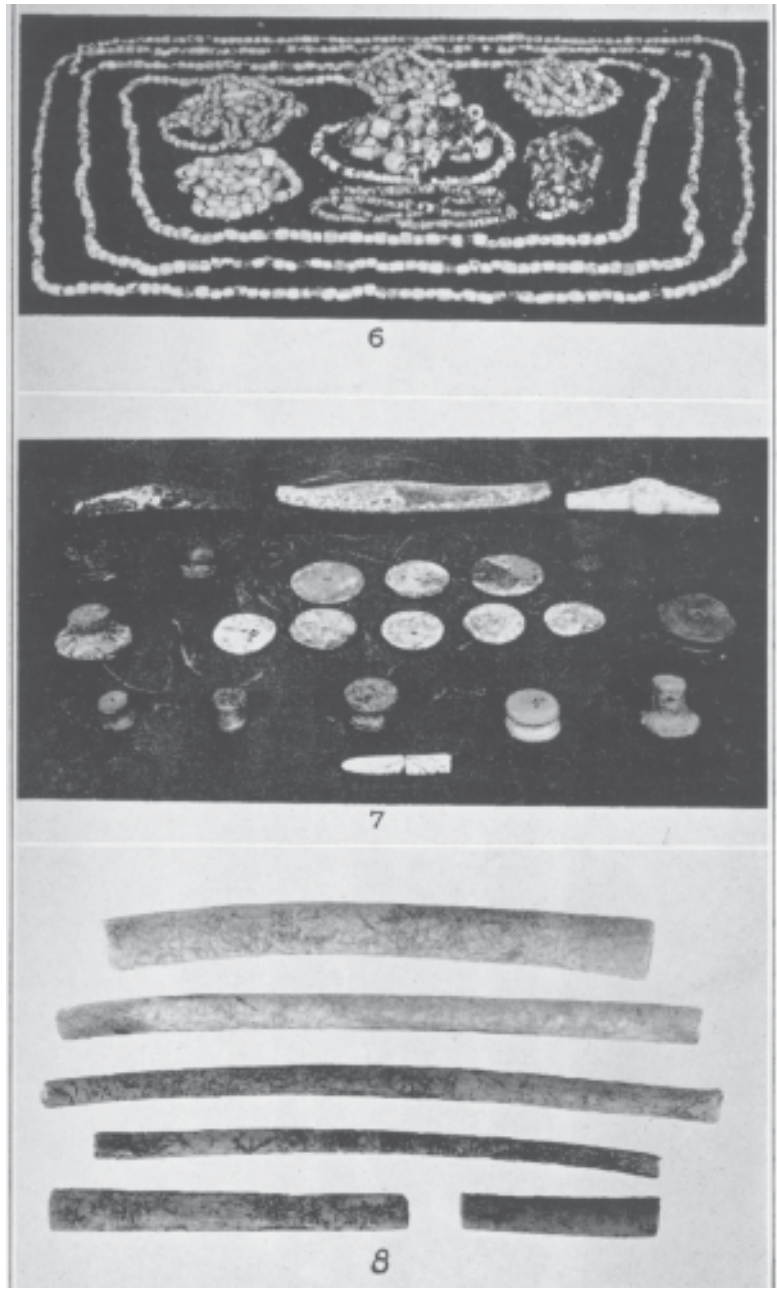


PLATE 2.

6. Conch shell beads from burials, Lamar County, Texas. Note the various sizes of beads.

7. Earplugs and hair ornaments, from burials and midden deposits; Lamar, Harrison, Titus and Wood Counties, Texas. The hair ornaments, of conch shell, are tubular and disc shaped; the earplugs are of stone and clay. Two of the stone earplugs bear a coating of hammered copper.

8. Bone beads from midden deposit at a historic site adjoining Espiritu Santo Mission, Goliad County, Texas. The ends are ground down and some of the beads are polished.

The differences are in size and that the conch shell, being thicker, permitted the drilling of a suspension hole through the head of the insect. The pendants vary in length from 2 to 2 ½ inches; in width from 7/16 to 9/16 inch. Another specimen, of the same shape, design and workmanship, came from the C. H. Coley collection in Titus County.

In burial M-1 at the Oso site, Nueces County, were eight small pendants, made from mussel shells. They were to the south and partly beneath the skull of an adult female. Each was triangular in shape and had a small drilled hole in the apex. In length they varied from 1 3/8" to 1 3/16 inches; in width from 1 to 1 1/8 inch. Around the edges were delicate notches, ranging in number from 40 to 90. The notches show more prominently on the concave side. The position in which found indicates that the pendants were worn in the ear.

In the midden deposit at the T. M. Sanders place was a mussel shell pendant 4 3/8" x 1 3/8". The specimen is symmetrical, the edges having been ground down. The suspension hole, near the edge in the thick end, is neatly drilled and has a diameter of about 1/10 inch.

With burial AA-5, in Morhiss Mound on Guadalupe River, Victoria County, was a triangular pendant made of conch shell. It was beneath the chin. There is one suspension hole, near the edge opposite the apex. The hole is ¼ on the concave and 3/16 inch in diameter on the convex side. The decayed edges show to have been well shaped, but there is no carving now visible on the specimen. On the convex side are remains of shallow pits or punctate decoration. This specimen is of more than passing interest, due to its having been found in an isolated earthen mound that bears earmarks of the Mississippi Valley Mound-Builder culture.

Animal teeth occasionally were converted into pendants, by the simple process of drilling a hole through the large end. Such a pendant is that of a drilled bear's tooth from a midden deposit on the E. H. Moores' plantation on Red River, Bowie County. The length of the pendant is 2 ¾ inches. The hole, which has a diameter of 3/16 inch, is very near the edge. Alligator teeth pendants sometimes are found in Southeast Texas.

In a midden deposit on the Stubbs farm on Old River, a former channel of Trinity River, in Chambers County, was found a rudely shaped pendant. It has been identified by Dr. E. H. Sellards as a calcareous nodule resembling fired clay. The specimen has a very rough, irregular surface, showing no attempt at smoothing or polishing. It is 2 7/8 inches long, with a maximum diameter of 1 1/8 inch. From the center it tapers gradually toward the ends. At the smaller end is a perforation 3/8 inch in diameter at the outside and 1/8 inch at the center—it having been drilled from both sides.

Several highly polished stone ornaments, of the so-called plummet type, are reported to have been found by a disinterested fisherman in a grave on Oso Creek, Nueces County. One of these specimens is included in the John B. Dunn collection in the University museum. It is 1 7/8 inches long, slightly triangular, with a maximum diameter of 1 1/8 inches. It tapers toward the grooved end, terminating in a node 7/16 inch in diameter. There are three grooves spaced 3/16 inch apart. The stone, which is very highly polished, is of a brownish-black color, with an occasional yellow splotch. It has been identified by Dr. Sellards as a very fine, hard siltstone.

An outstanding type of ornament is the shell gorget. The Handbook of American Indian<sup>4</sup> describes them as "objects worn in some proximate relation with the gorge or throat. They may be suspended from a string encircling the neck, or may be attached to the dress." Some are engraved, others plain. All specimens here classed as gorgets are round and bear two small holes, closely spaced, near the margin. Triangular and rectangular shell and bone ornaments, classed as pendants, bear only one suspension hole; while the typical gorget bears two.

It is interesting to note that at the T. M. Sanders place, in Lamar county—several hundred miles from the source of supply—conch shell gorgets were much more numerous and highly decorated than at the Caplen and Oso sites, in Galveston and Nueces counties, where such shells were plentiful. Of 21 gorgets from the Sanders place, 13 are whole.

Various designs were engraved on the Sanders gorgets. Sometimes two or more elements were embodied in the decoration of one specimen. The following tabulation gives the facts in this regard:

Gorget Designs	No. Times Used
Equal-armed cross -----	10
Human heads -----	6
Scalloped edge -----	4
Birds (turkey and crane) -----	3
Swastika -----	2
Eye -----	1
Sun-ray disc -----	1
Hole in center -----	2
Plain -----	3
	32

In all cases the gorgets were found with the concave or ornamented side up. Unless otherwise stated, they are from the T. M. Sanders farm.

On two of the gorgets an open-work or “cut-away” cross constitutes the sole decoration. One of these,  $2\frac{3}{4}$  inches in diameter, lay a few inches back of the skull in burial B-2. The cross was formed by cutting out four small segments, each representing  $\frac{1}{4}$  of a circle. The resultant holes were so located as to form the outlines of an equal-arm cross in the central or uncut portion. The curved outer edges of the holes are equidistant from the rim of the gorget, thus giving the effect of a cross enclosed in a circle. This is the same type of design as that incised on certain earthenware vessels in Northeast Texas.<sup>5</sup> It too is almost identical with a painted design on the bottom of a water bottle from Scott County, Missouri (Yale Collection), as pictured by MacCurdy.<sup>6</sup> But the crosses on the Missouri gorgets<sup>7</sup> differ greatly from the Texas specimens.

The other specimens of this type came to light in an unusual manner. A laboratory worker in removing the dirt from a skull—burial B-17—found the small gorget inside. It is in a bad state of preservation, the edges being greatly decayed. The four cut-out sections are triangular in shape. The outline of a cross is thus formed; but the shape of

the holes do not give the illusion of an enclosing circle.

Another gorget—plowed up by the landowner—bears a single engraved equal-armed cross in an elaborate setting. The specimen is in an excellent state of preservation. The dimensions are  $3\frac{1}{2}$ ” x  $3\frac{1}{4}$ ” x  $3/16$ ”. The arms of the cross are  $1\frac{5}{16}$ ” long,  $3/16$ ” wide and enclosed in an engraved circle. A space  $\frac{1}{4}$  inch wide immediately outside the circle is undecorated. Beginning at the outer edge of this plain band are 48 carved lines radiating out to the edge of the gorget. The edge of the disc is scalloped, there being 24 shallow notches—one at the termination of each alternate line. Further embellishment is afforded by three rows of broken horizontal lines connecting alternate vertical lines. This simulates the over-one-under-one mat-weaving technique, and makes an attractive design around the margin.

The decoration of one gorget embodies five crosses and five human heads. It is one of the most intricate designs used. The large central cross, enclosed in a circle, has a small cross adjoining each arm. The four small crosses join, and are enclosed by, the circular rim. Thus there are two concentric circles. Each cross is formed by cutting away four roughly triangular pieces of the shell. The central cross forms a background against which the inner head rests. The other four heads are so arranged that one arm of each small cross forms a part of the neck of the adjoining head. The heads themselves are faintly engraved, requiring close scrutiny to decipher the details. Each has a large, hooked nose; thick, protruding lips; short, thick neck; long, sharp-pointed eyes; a crown-like headdress; ear plug and pendant. The above described gorget, with a small undecorated one, came from beneath the chin of one of five skulls in group burial B-12.

The heads on this engraved gorget have several features in common with that of a human figure on a shell gorget from Eddyville, Kentucky.<sup>8</sup> The lips on the two specimens are identical; the eyes and noses are almost exactly the same; the headdresses are very similar.

An outstanding specimen is a gorget bearing a human head carved in relief. It represents a very successful attempt at portraiture. The ornament was under a chin in group burial B-5 containing seven skeletons. The gorget, 2 ½ inches in diameter, was in a soft, crumbly condition when uncovered. It was treated at once with preservative, consisting of celluloid mixed with equal parts of acetone and amyl acetate. The equal-armed cross appears in the background. The arms consist of three parallel engraved lines. Considerable skill was displayed in the carving of this portrait. Even the details are realistically brought out. The eyes are long and narrow; the nose wide and prominent; the lips thick and protruding. Hair and ear ornaments may be seen in place. Here is a picture of a prehistoric Mound-Builder as he was seen and portrayed by a member of his tribe.

Just below the chin, on skeleton No. 1 in burial B-13, was part of a gorget bearing a bird design. The bird has a long, graceful neck and a sharp beak. The body of the bird was missing. Another gorget, plowed up by the landowner, bears—among other intricate cut-away designs—four conventionalized bird heads. They may represent the crane.

There is one bird gorget so realistically carved as to leave no doubt about its identity. The tail, outspread wings, spurred legs, wattle and other familiar features label it as a proud turkey cock. It was with burial B-20. The diameter is 4 ¾ inches. An equal-armed cross is prominent in the background. The gorget, with a pearl bead just above it, rested beneath the chin of the central skeleton.

One of the gorgets is decorated with a swastika design enclosed in concentric circles. The edge is badly decayed, the central portion in a fair state of preservation. The gorget measures 2 ¾" x 2 ½". The swastika or cross variant—formed by the "open-work technique"—is inside the small engraved circle. Connecting the first and second circles are spoke-like elements. The base of each "spoke" bears a small drilled dot, thus forming a punctate circle. The "spokes" themselves—numbering 17—result from an equal number of holes or cut-away portions just inside the second

circle. Between the second and the remains of a third concentric circle are "spokes" with somewhat larger bases. Instead of merely a dot in the center of each spoke-base, there is an incised diamond, or lozenge-shaped, design, with the dot in its center. These diamonds are placed end to end, thus forming a circle or chain. This is suggestive of a painted diamond-back rattlesnake design on a bottle, pictured by Moore<sup>9</sup>, from Cunningham place, Poinsett County, Arkansas. The diamond with a dot in its center is also found on East Texas pottery.<sup>10</sup> Originally this Texas gorget must have been a perfect example of symmetry.

A fragment of a gorget, beneath the chin of skeleton No. 3 in burial B-5, contained an unusual design in the center of which appears an eye. At the outer edge was a band of five engraved concentric circles. Adjoining the band of lines was what appeared to be a webbed foot. Since a part of the gorget was missing, one cannot be sure what type of bird or conventionalized animal this may have been. Next to the broken edge, and not far from the center of the ornament, was a so-called eye. It consisted of two small concentric circles—the pupil—surrounded by an elliptical element, representing the outline of the eye.

With a single skeleton in burial B-8 were two gorgets. One rested above the other, on the right jaw. The upper one was 4 ½ inches in diameter and without decoration. The other, 3 1/8 inches in diameter, was badly decayed but bore the remains of a scalloped edge and an engraved design. The design is not legible.

In burial B-19, disturbed by the plow, were two fragmentary gorgets. They bore scalloped edges but had no other decoration.

On the chest of the lone occupant of grave B-1 were two gorgets, one beside the other. One was undecorated; the other, with a diameter of 4 inches, bears no carved design but a circular hole 1 11/16 inch in diameter was cut in the center.

In a grave on the Jess Alford plantation, on a former channel of South Sulphur River, Hopkins County, a conch shell gorget was found. It measured 4 ¼" x 4" x 3/16" and was in an excellent state of

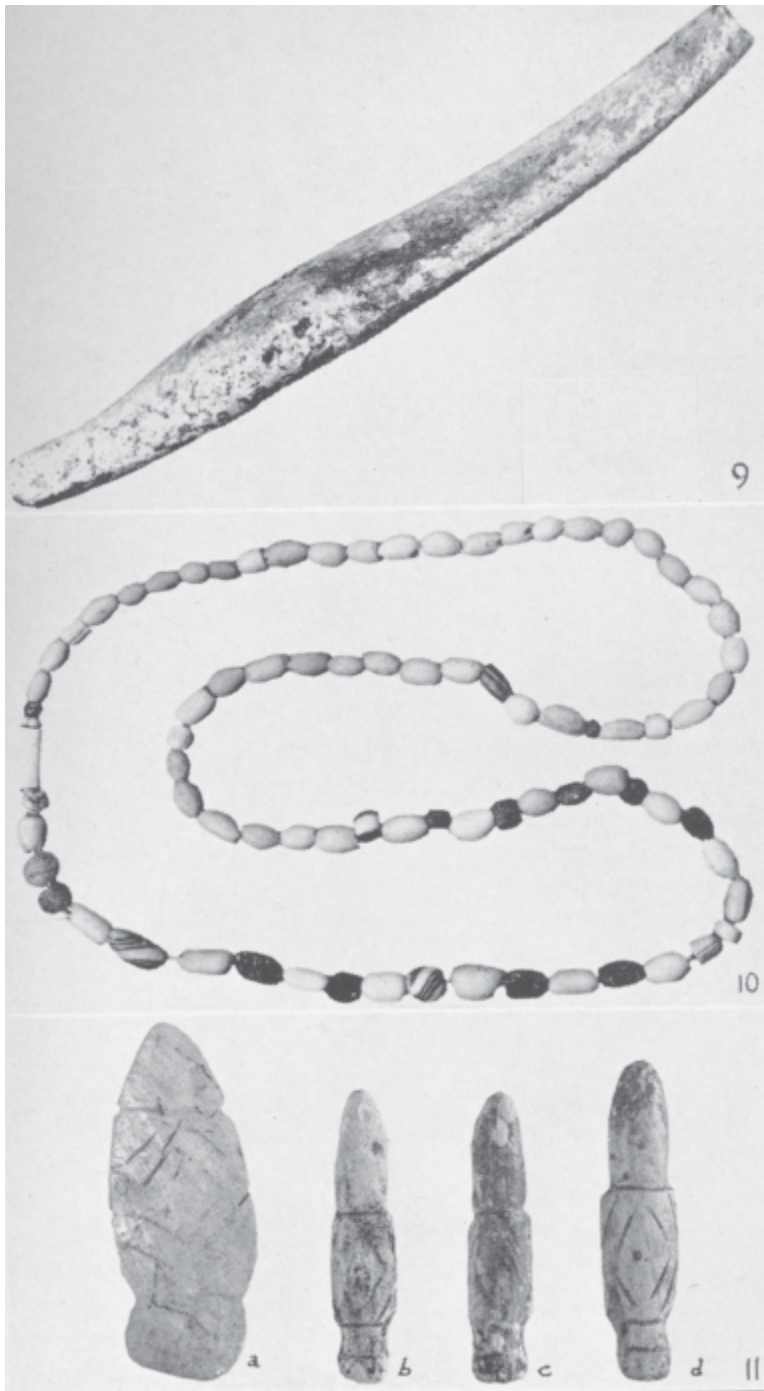


PLATE 3.

9. Tubular bead, or hair ornament, found with a burial in Lamar County, Texas. Made from the columella of the conch shell. Length  $6 \frac{1}{8}$  inches, with a maximum diameter of one inch. It was found at the back of the skull and this would indicate that it may have been used as a hair ornament.

10. Trade beads from a historic campsite and cemetery, in Lamar County, Texas. These beads were found with specimens of Indian manufacture as well as other European trade articles.

11. Insect effigy pendants: (a) from Wood County, made from fresh water mussel shell; (b, c, d) from Cass County, made from split columella of conch shell. Note carved lines and dots representing tail, wings, head and eyes. Probably grasshopper effigies, (a) Suspended by groove; (b, c, d) have perforation through head.

preservation. It bears no carved design, the sole decoration being a circular hole,  $\frac{3}{4}$  inch in diameter, in its center. The edge of the hole has been beveled and highly polished. The differences between this gorget and the above described one are a better state of preservation and a smaller central hole.

From a burial in the Caplen Mound, Galveston County, came a well preserved conch shell gorget. The diameter is  $4 \frac{1}{2}$  inches. An attempt at punctate decoration consists of 23 lightly gouged dots, arranged without apparent design, near the four suspension perforations. Four holes in this gorget, instead of two, is unusual. Two of them are  $\frac{1}{8}$  inch in diameter, with the two alternate ones  $\frac{3}{16}$  inch. The small holes are  $\frac{3}{4}$  inch apart, the large ones, one inch. All are  $\frac{3}{16}$  inch from the edge of the shell.

Another specimen from the Caplen Mound is of the gorget type, although slightly elliptical and bearing only one hole for suspension. The ornament is  $2 \frac{1}{4}'' \times 2 \frac{3}{4}'' \times \frac{1}{8}''$  and without decoration.

No sets of three engraved shell ornaments—"one elongated triangular pendant going together with two discoidal ones," presumably a "breast-ornament" and two "ear discs"—such as reported from Mexico by Beyer<sup>11</sup>, have been found in East Texas. No gorget-like, engraved shell discs without suspension holes have been discovered in this region.



Stone plaques are rare in East Texas. Fewer are found there than in the upper levels of the burnt-rock mounds of Central Texas. Specimens of this type are variously classed as stone plaques, pierced tablets, and two-hole "shuttle gorgets."

An outstanding find in this class is from the W. J. Dorsett farm, Wood County. This plaque, with dimensions of  $3\frac{5}{16}$ " x  $2\frac{1}{4}$ " x  $5/16$ ", was picked up on the surface of a campsite. It is made of iron clay-stone or limonite, and bears two perforations, one near each end. The holes are  $3/16$  to  $5/16$  inch outer diameter; drilled from both sides, meeting at the center. The reverse side of the specimen presents a flat surface; the obverse side is convex, the thickness decreasing gradually from the center toward the ends. The natural coloration, with its ringed or banded effect, forms the sole decoration.

Earplugs were made from stone and clay. There were twice as many of the latter as of the former. They vary greatly in sizes, ranging from  $1/2$  to  $1\frac{1}{2}$  inches in diameter. All are spool-shaped, and most of them undecorated.

The only earplug bearing an incised decoration is from the E. H. Buchanan plantation on Red River, Red River County. It is spool-shaped. The decorated end is  $7/8$  and the other  $5/8$  inch in diameter. The length is  $5/8$  inch. The large end bears two concentric circles with an impressed dot in the center. The same design is employed in the decoration of pottery. The surface is brownish-black, with an excess of calcareous tempering material.

Four earplugs were found in burials on the H. R. Taylor farm, Harrison County. All were made of clay. Three are small, with diameters from  $1/2$  to  $5/8$  inch. The other is large and unusual, in that it bears a red slip. One end of the "spool" is much larger than the other, the diameters being  $1\frac{1}{2}$  and  $5/8$  inch. The thickness, or length, is about  $3/4$  inch. The large plug was in burial A-46, together with 13 vessels and 4 arrowpoints. Burial A-22 had one small plug, beneath a large broken bottle, at the head of the grave. In burial A-2 were two earplugs together beside a broken pot.

One of the earthenware plugs is like a spool with an end cut off. The disc-end is one inch in diameter and  $1/8$  inch thick. The cylindrical portion, which bears near its outer end a perforation  $1/10$  inch in diameter, is  $5/8$  inch long and  $1/2$  inch in diameter. The total length is  $7/8$  inch. The specimen is made of yellow clay; rudely shaped and unpolished, except on the large end. It came from a midden deposit on the Earl Jones farm, Wood County; and is the only plug with a single enlarged end and the stem perforated.

Two specimens of the same shape, from a mound on the Rose place, Cross County, Arkansas, are reported by Moore<sup>12</sup>, who makes the following statement regarding the find: "Burial No. 43, a child, had one vessel of earthenware, one shell bead and two shell earplugs; each of the last having a single perforation near the end worn back of the ear, probably for more secure attachment."

In a grave plowed into by the landowner, T. M. Sanders, Lamar County, was a large earthenware earplug with a maximum diameter of  $1\frac{1}{2}$ ". In burial B-20, same site, were two stone earplugs bearing a thin covering of sheet copper on one end. The plugs are of the pulley-shaped type  $1\frac{3}{8}$ " in diameter and  $1/2$ " thick. In the center of the reverse side is a depression the size of a dime and  $1/16$ " deep. A tiny hole extends all the way through. The "pulley" edge is grooved  $1/8$ " deep. The obverse side has a bulge slightly larger than the cavity on the other side. One of the stone plugs was against the left ear; the other 6 inches back of the skull.

In a grave on the Russell Bros. farm, Titus County, was a stone earplug one inch in diameter. The stone, gray in color, is well polished.

The copper-covered earplugs were the only ones found in a grave with sufficient skeletal remains to determine the exact location of the specimens with regard to the head. But the finding in certain cases of two plugs side by side; and in other graves only one plug—and it variously located—would seem to indicate that in most cases the plugs were not in the ears of the dead at time of burial.

Referring to finds in Arkansas, Harrington<sup>13</sup> says: "Earplugs were usually in place at the sides of the head, but in one case had been carefully placed with other belongings of the dead in a little pile to the left of the head."

It is interesting to note that all the earplugs have been found in the region occupied by the Caddo. No earplugs come from the Asinai territory.

On the surface of a campsite near Paris City Lake, Lamar County, was picked up what appears to be a labret, or lip plug. It is made of clay and bears on its obverse side a comical-looking human head. The nose is prominent, the eyes large and somewhat round. The ears have ornaments attached. But the most striking feature is the widely spread mouth, featuring the thick lips. The mouth-hole furnished the means of attachment. It reminds one of an effigy bottle, showing an animal with its mouth open, from a grave at the H. R. Taylor site, Harrison County. The plug is roughly circular and slightly over one inch in diameter.

Boatstones are scarce. Most of them are made of an iron stone that takes a high polish. They are comparatively small, ranging from 2<sup>1</sup>/<sub>2</sub> to 3 <sup>1</sup>/<sub>2</sub> inches in length and one to 1

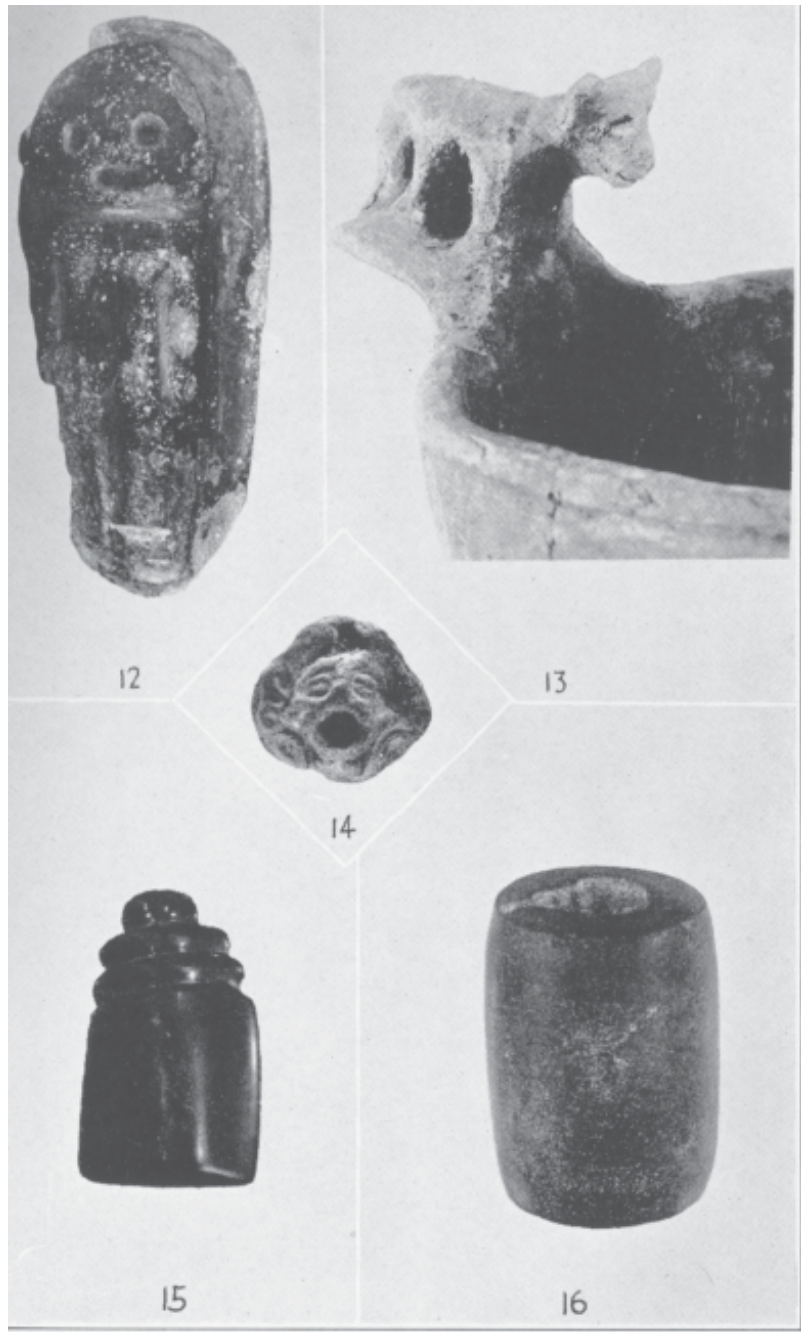


PLATE 4.

12. Clay papoose image, found in a campsite in Red River County, Texas. The bottom side of the specimen is convex and seems to have been used as a pottery smoothing implement.

13. A dog or wolf effigy perched on the rim of a bowl, from a burial in Anderson County, Texas. This effigy was intended primarily as an ornament, even though it may have been used as a handle.

14. Clay labret made in effigy form, from Lamar County, Texas. Note the widely opened mouth, prominent nose and large eyes.

15. Highly polished stone ornament or "charm stone" of the so-called plummet type, Nueces County, Texas. Made of very fine, hard siltstone.

16. Polished stone, drilled lengthwise. From a campsite, Cass County, Texas. Made of fine Ouachita sandstone. Use problematical; resembles a so-called "prayer stone."

½ inch in width. They take their name from a canoe or boat-like shape, the interior being hollowed out to depths of 3/8 to ½ inch.

There is only one specimen that bears perforations. It seems to have been unfinished, the exterior being shaped but the interior only slightly hollowed out. Three holes penetrate the entire thickness, with a fourth extending half way. All the drilling was done from the top side, as evidenced by holes that taper gradually all the way. The specimen measures 2 7/8" x 1 ½" x 3/4". It came from Cass County, Texas, near the line of Miller County, Arkansas.

This Texas specimen is like a boatstone, with four perforations, from the H. E. Wheeler collection of Jonesboro, Arkansas, as pictured by Moorehead.<sup>14</sup>

A similar specimen, of black granite highly polished, came from Ohio and is in the Museum of the American Indian, New York.<sup>15</sup> It has holes drilled through at each end.

Polished boatstones—like grooved axes—have not been found in graves in East Texas. In writing on this subject Moorehead<sup>16</sup> says: "If the natives always placed their most treasured possessions with the dead, one would imagine the boatstone would accompany burials. Since we do not find them with interments, it is possible that some taboo must have been attached to these forms."

Harrington<sup>17</sup> makes the following suggestion regarding the possible use to which boatstones may have been placed: "The only suggestion the writer can offer as to the use of these objects is furnished by the Iroquois tribes, and some others visited by him, which, until recently, have made little boats out of wood instead of stone, to keep as charms against accidents by water."

Another problematical object, of supposed ornamental or ceremonial use, is the bannerstone. Several of these, of the double-winged type, have come from the surface of campsites. None has been found in a grave.

The most beautiful and symmetrical of these is from the M. H. Landers collection, A. H. Terry farm.

Wood County. It is made of an attractively colored quartz, ranging from white through yellow and red. It is highly polished and a work of art. The wings, set at slightly different angles, are 1" x 2" x 3/16". The circular central portion is 1 ½" long and 13/16" in diameter. The hole has a uniform diameter of ½", and may have been made with a reed drill by using sand and water.

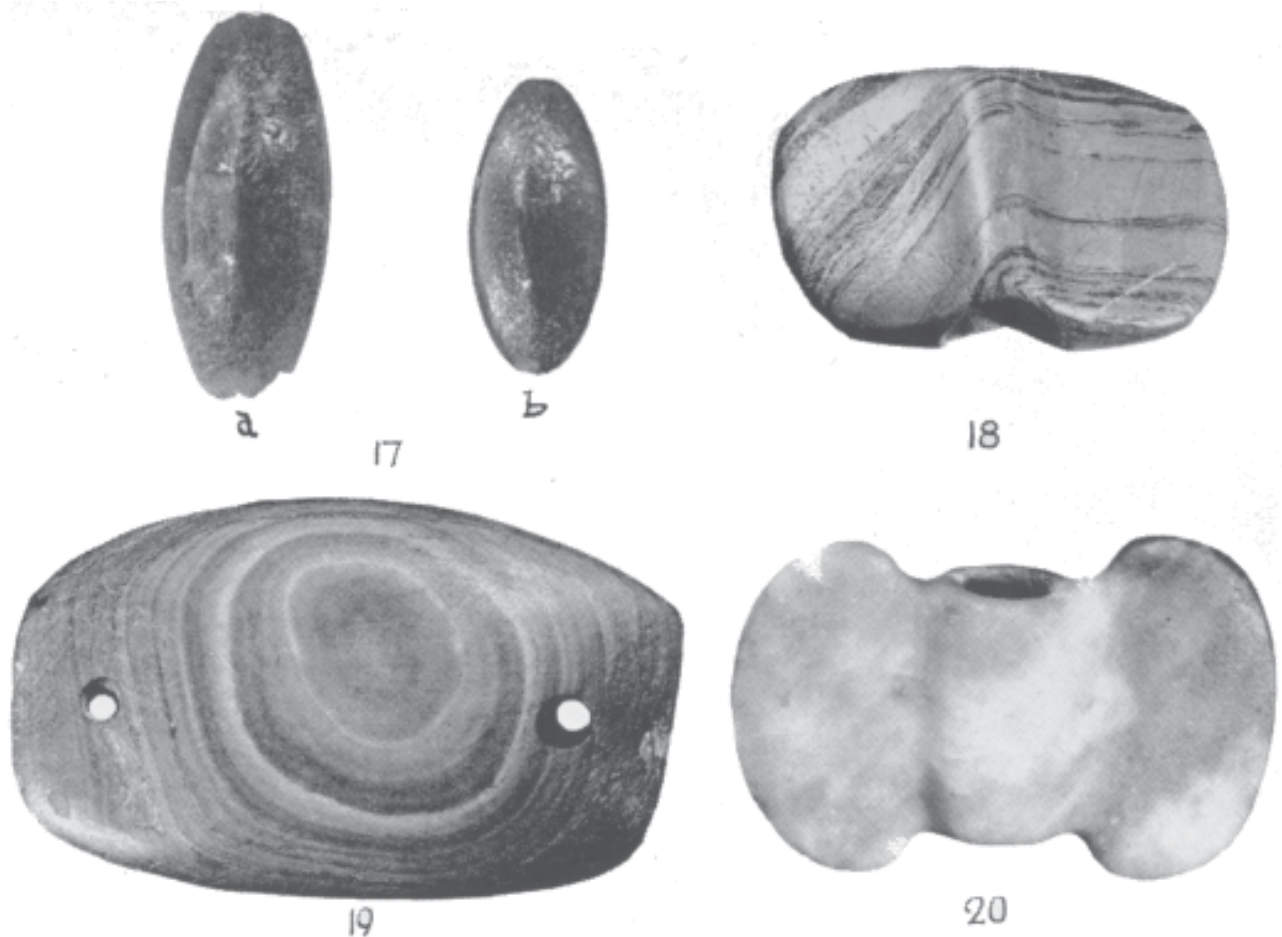
There is a possibility that this ornate double-winged bannerstone may have symbolized the "thunder bird" or eagle. Various other theories have been advanced regarding the use to which such stones were placed. The name was derived from the idea that the stone was hafted and carried, like a banner, in certain important ceremonies. Possibly it served as the top socket of a fire or drill spindle. But in that event it seems unlikely so much labor would have been expended in its manufacture.

A second specimen is from the Simeon dark collection, S. E. Watson plantation, Red River County. It is made of a banded siltstone, probably from the Ouachita Mountains. The stone is green with black bands running through it. Each wing is 1 3/16" x 1 3/4" and varies in thickness from 1/8" at the outer edges to 13/16" at the center. The hole is 5/8" in diameter, with a slight outward flare at each end. The specimen is shaped much like a modern double-bitted ax.

Half of a bannerstone of unusual shape came from a campsite on the Flournoy farm, Wood County. It is made of a dull red limonite. The break occurs near the center of the drilled hole. The remaining wing has a width of 1 1/8" and thickness of 7/16" at the hole; width at the outer edge, 2 3/8" and thickness 1/16". The diameter of the hole is 5/8". The wing is suggestive of the Spanish broad-ax.

There are various miscellaneous specimens that might be classed as ornaments. Some are problematical objects; others undoubtedly were for utilitarian purposes, but embodied certain features solely for ornamentation.

One of the former is a cylindrical stone drilled longitudinally. The material is a fine sandstone, probably from the Ouachita Mountains. The



## PLATE 5.

17. Polished boatstones from the soil surface of campsites in East Texas. The red iron stone from which these specimens are made takes a high polish. The boat-like charms therefore are beautiful, even though there is no other form of decoration.

18. Bannerstone of banded siltstone, from Red River County, Texas. Each wing is 1 3-16" x 1 3-4" and ranges in thickness from 1-8" at the outer edges to 13-16" at the center. The hole is 5-8" in diameter, with a slight outward curve at each end. The stone is green with black bands running through it.

19. Stone plaque from the surface of a campsite in Wood County, Texas. Material is an iron stone, with alternating bands of red and yellow. The coloration is the only form of decoration. Dimensions: 3 5-16" x 2 1-4" x 5-16". Holes, 3-16" to 5-16" outer diameter, drilled from both sides meeting at center.

20. Bannerstone of polished "rose quartz," from Wood County, Texas. Well made and very symmetrical, but with the wings set at slightly differing angles. The color of the stone, ranging from white through yellow and red, adds greatly to the beauty of the specimen. The wings proper are 1" x 2" x 3-16". The circular central portion is 1 1-2" long and 13-16" in diameter. The hole has a uniform diameter of 1-2".

exterior is well polished. The object is 1 3/4" long and 1 1/4" in diameter. The hole is widened into elliptical shape at each end and seems to have had something attached. The object is suggestive of a so-called "prayer-stone," but probably served some useful purpose. It came from the Ted Stringer collection, Cass County.

An almost identical specimen, except it is made of quartz and slightly larger, is in a private collection in Hughes Springs, Cass County.

What seems to have been an earthenware pottery-smoothing implement was given an ornamental aspect by shaping the upper portion to represent a papoose on a cradle board. It is from Mrs. F. E. Ferguson collection, Red River County, and measures 3 1/2" x 1 1/2" x 1". The clay is shell tempered. The bottom, or "smoother," has a convex surface. The infant, standing out 1/2" in relief, forms a convenient hand-grip. The eyes and mouth consist of drilled pits. The arms are extended alongside the body. The feet and other parts of the specimen are damaged, as a result of thoughtless breakage by boys immediately after its discovery.

From the foregoing it is evident that the first occupants of East Texas made and used ornaments of many kinds. Their manufacture tended to develop the primitive arts.

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1. Anderson, A. E., Artifacts of the Rio Grande Delta Region, Bulletin Texas Archeological and Paleontological Society, Volume 4, Abilene, 1932, Plate 7, figure 14.

2. Harrington, M. R., Certain Caddo Sites in Arkansas, Museum of American Indian, New York, 1920, page 229.

3. Shetrone, H. C., The Mound-Builders, D. Appleton and Company, New York, 1931, pp. 118-119.

4. W. H. H., Handbook of American Indians North of Mexico, Bulletin 30, Bureau of American Ethnology, Washington, 1907, Part I, p. 496.

5. Jackson, A. T., Types of East Texas Pottery, Bulletin Texas Archeological and Paleontological Society, Vol. 6, Abilene, 1934, p. 52.

6. MacCurdy, Geo. G., Shell Gorgets from Missouri, American Anthropologist, Vol. 15, No. 3, July-September, 1913, Fig. 65, p. 400.

7. Ibid, Fig. 62, 63, 64; pp. 398-399.

8. Ibid, Fig. 65, p. 400.

9. Moore, Clarence B., Antiquities of the St. Francis, White and Black Rivers, Arkansas. Reprint from the Journal of the Academy of Natural Sciences of Philadelphia, Philadelphia, 1910, 2nd Series, Vol. XIV, Pl. XXIII.

10. Jackson, A. T., Types of East Texas Pottery, Bulletin Texas Archeological and Paleontological Society, Vol. 6, Abilene, 1934; Pl. 5, fig. 16.

11. Beyer, Hermann, Shell Ornament Sets from the Huasteca, Mexico, Middle American Pamphlets: No. 4 of Publication No. 5, Department of Middle American Research, Tulane University, New Orleans, La., 1933, p. 169.

12. Moore, Clarence B., Antiquities of the St. Francis, White and Black Rivers, Arkansas, Journal of Academy of Natural Sciences, Phila., Vol XIV. Phila., 1910, Fig. 11, p. 282.

13. Harrington, M. R., Certain Caddo Sites In Arkansas, Museum of American Indian, New York, 1920, p. 68.

14. Moorehead, W. K., Stone Ornaments of the American Indian, Andover, Mass., 1917, Fig. 223, p. 363.

15. Ibid, Fig. 50, p. 76.

16. Ibid, p. 76.

17. Harrington, M. R., Certain Caddo Sites In Arkansas, Museum of American Indian, New York, 1920, p. 216.

## **THE PLACE OF TEXAS IN PRE-COLUMBIAN RELATIONSHIPS BETWEEN THE UNITED STATES AND MEXICO**

BY DR. J. ALDEN MASON

The question of pre-Columbian influences in the United States, and especially in the mound region of the southern and southeastern states, has always attracted considerable attention. Possibly no problem of American archeology, except that of the origin of the American Indian himself, has occasioned so much loose thinking, jumping at conclusions on the basis of superficial resemblances, and disregard of temporal elements. It is time that more sound logical thinking were brought to bear upon this interesting and important problem. Some little has been done, on minor phases, but the question needs a thoroughgoing analysis, preferably by a number of experts in different fields. It is not my intention to attempt this at present, even were I qualified to do so, for want of space for such an extended disquisition, but rather to point out the key position that Texas holds in the solution of the problem, in the hope that an exposition of its status to date will awaken interest in the question and lead to further information and investigation that will aid in its elucidation.

There are three possible routes by which Mexican influences could have reached the southern states: via Yucatan, Cuba and Florida; along the Gulf coast of Mexico and Texas; and indirectly up the Mexican Cordillera to the Pueblo region and then from there eastward.

The Antillean route may be disposed of quickly. That there are Antillean influences in the southeastern states is generally admitted. Miss Gower<sup>1</sup> regards them as "too great to be purely fortuitous" and considers them as due to "a series of not extremely intimate contacts occurring at intervals during a long period of time," together with "the existence of a common primitive culture." But, despite the relatively short distance separating Yucatan from Cuba, there is no evidence that it was ever traversed in pre-Columbian days. Antillean and mainland cultures differed widely; I know of no object ever found that would indicate pre-

Columbian migration or trade between these regions, and agree with Miss Gower's conclusion that "So far there are no satisfactory indications of Central American influence on the culture of the Antilles."

Both of the other possible routes traverse the state of Texas.

The only feasible route by which immigration and cultural influences may have passed from the Pueblo region to the Mississippi Valley is by the drainage of the Arkansas River, especially along its southern tributary, the Canadian. The sources of these rivers lie in New Mexico, close to the easternmost Pueblos, such as Taos. This area has been especially studied by Moorehead<sup>2</sup> who has incorporated in his conclusions some of the work of Holden, Studer and other investigators in this region. Holden and Studer have also published in this Bulletin the results of some later researches.

It is certain that the Canadian River was used as a highway for bison-hunting bands of the Pueblo Indians. Potsherds of typical Pecos wares were, for instance, found just south of Amarillo in the Texas Panhandle by the expedition from the University Museum in 1929. On the upper reaches of the Canadian, such as at Watrous on the Mora, typical Pueblo, probably Pueblo III, ruins are found.

On the lower Arkansas River, in the state of Arkansas and in eastern Texas, domiciliary and mortuary mounds exist in which are found very well made pottery vessels, with smooth, plain, painted or incised surfaces. They show no connection with Pueblo wares, or with Pueblo culture in any respect, and not much more with eastern Mound ceramics. These remains are ascribed to the ancestors of the Caddoans.

It might be expected that in the intervening region an intermediate type would be found, but this seems to be not the case. Instead, in the Texas Panhandle region, we find a culture different from

either and exceedingly difficult to classify, apparently a separate culture. In architecture its connections are much closer with the Pueblo region, for rooms are found with mud walls and floors, semi-subterranean, with wattle-and-mud roofs supported on poles, and walled with large stones which are, however, generally placed vertically instead of in horizontal masonry as typical in Mexico and the Pueblo region. Artifacts and potsherds are few, but the latter differ from both Pueblo and Mississippi types, being rude and undecorated except for a rough surface as if made by corn-cobs or similar methods. It is Plains rather than either Pueblo or Mississippi Valley in type. Except for the superficial resemblance to Pueblo culture in architecture, this Texas Panhandle culture has practically nothing in common with Mexico. Its temporal relationships with the adjacent cultures are still uncertain but Kidder considers it as relatively late. It could, therefore, hardly have served as the medium through which elements of Pueblo culture passed to the Mississippi Valley. At the time of discovery, this region was inhabited by Plains tribes of apparently different culture; Kiowa, Comanche, Osage, Kansas, and Caddo, and there is no evidence that any other people, ancient or modern, could have served as carriers of Pueblo culture eastward.

Furthermore, this question is a more or less academic one, since Mexican influence in the Pueblo region seems to be nowhere near so great as it appears at first. At first blush, intimate relationships seem to be obvious, but the more closely the details are examined, the less certain this connection becomes. The archeology of the Southwest is now better known than that of any other region in America, with all its sequences and temporal relationships; that of Mexico, especially of the Archaic Culture of the Valley of Mexico, is becoming well known, but the region between, stretching for nearly a thousand miles from the Tarascan region to the Arizona border, is only superficially known and this important region must be carefully investigated by archeologists before the question of Mexican-Puebloan relationships can be solved.<sup>3</sup>

Apparently an unbroken chain of archeological remains continues through the Sierra Madre of Western Mexico from Jalisco to Utah, with cliff-dwellings and other masonry constructions of Southwestern type. Many elements of religion and of material culture are common to the sedentary Pueblo region, the semi-nomadic agricultural peoples of the Southwest such as the Piman groups, and the peoples of northern Mexico. Among these may be mentioned the method of preparing corn by grinding on the metate and toasting corn-cakes, a developed priesthood with use of prayer-sticks, and standardized prayers and ritual. The linguistic connections are also close and certain. Moreover trade relations were certainly maintained, at least in later times, throughout this region. Bronze bells of the type characteristic of the Tarascan region, and mirrors of pyrite mosaic identical with those characteristic of the Old Maya Empire, have been found in Arizona, and the earliest travelers in the Southwest, such as Cabeza de Vaca and Fray Marcos de Niza, found trade, for instance in turquoise and parrot feathers, and mutual knowledge of distant regions, general on the Mexican-United States border.

It would seem obvious, then that in this region at least, Mexican influence would be constant and strong. But the best authorities on Southwestern archeology, as a result of careful comparisons and studies, see little evidence of Mexican influence in Pueblo material culture on any late horizon. The resemblance between Pueblo and Aztec is extremely slight indeed, that with the earliest known Mexican culture, the Archaic of the Valley of Mexico, hardly any greater, at least as far as ceramics are concerned, almost the sole criterion that we possess for this Archaic Culture. It would seem probable that most of such resemblances and common elements of material culture and religion that we find are inheritances from a common elemental culture which obtained from the Pueblo region to southern Mexico and which is probably best exemplified today by the primitive peoples of northern Mexico such as the Tarahumare, and that upon this were built up, independently and with very slight interchange of influences, the higher cultures of

Mexico in the south, and the relatively less high culture of the Pueblos.

It still remains to consider the Gulf Coast of Texas as a possible route. This region has been almost entirely neglected until recently, and no general report, so far as my knowledge goes, has ever been published upon it. Recently several members of the Texas Archeological and Paleontological Society, especially George C. Martin of Rockport and A. E. Anderson of Brownsville, have pursued investigations there.

At the time of the first reports this region was inhabited by tribes of very low culture, the Carrizo, Tonkawa and Karankawa, non-agricultural, cannibalistic peoples. The narrative of the first traveler through this region, Cabeza de Vaca, gives a good impression of their cultural poverty. It is clear that they could never have served as the carriers of Mexican influence.

Let us then turn to archeology. The northernmost people of typical Mexican culture in eastern Mexico were the Huastec whose home was and is in the region of Tampico in the northern part of the state of Vera Cruz and the southern part of Tamaulipas. They belong to the Mayan linguistic family and are the only group of that stock isolated from the main mass in Guatemala, Yucatan and Southern Mexico. Their culture, however, is very different from that of their southern kindred. Whether the Huastec emigrated from the main group or vice-versa is not known, but the former case is more probable. However the separation must have occurred at an early period, before the Maya proper developed their peculiar and high culture. Maya dated monuments permit us to place this development as certainly before the opening of the Christian era, and we are probably safe in assuming that the Huastec have been in their present habitat for at least two thousand years.

Pottery being the best archeological criterion for culture, we may for a moment consider the type of Huastec ceramics, which is very characteristic. The ware is almost uniformly of a creamy buff color, with painted decorations in black with occasional red, generally in curvilinear geometric or very

conventionalized naturalistic designs. The asphalt or *chapopote* which results from the maritime petroleum springs in the Tampico region was frequently employed to decorate their pottery, a similar practice being used by the Totonac to the south of them.

The extension of the Huastec culture to the north has never been carefully traced. From Tampico, which is generally considered about the northern limit of the Huastec, to the Rio Grande at Brownsville is about two hundred and fifty miles as the crow flies. Fewkes<sup>4</sup> knew of no ruins north of Aldama, about fifty miles north of Tampico. Prieto<sup>5</sup>, almost our only authority for the archeology of Tamaulipas, devotes considerable space to describing ruins and excavations made between Tampico and Aldama, and expresses his belief that ruins extend as far as Soto la Marina, about in latitude 23° 45'. He also speaks of other ruins in the Valle de Santa Barbara, farther west in the mountains, which, he believes, extend as far as the towns of Llera and Jaumave, about in latitude 23° 20'. He states that these are more primitive than those of southeastern Tamaulipas, and they may have little or no relationship with Huastec.

In 1929 I motored south from Brownsville about one hundred and fifty miles to Soto la Marina, about three-fifths of the way to Tampico. Inquiries en route failed to bring forth any reports of ruins, but at Soto la Marina a report was obtained of some at Eslabones, about twenty-five miles farther south, about in latitude 23° 25'. However, at San Fernando, only about eighty miles southwest of Brownsville, and less than one-third of the way from Brownsville to Tampico, a perfectly typical Huastec "melon" olla was seen, purchased, and sent to the National Museum of Mexico. It is absolutely Huastec in type; the finder said that he had found it in the side of a stream-bed about half way between San Fernando and the coast. It is reasonably certain that it was not carried there in post-conquest days, but whether manufactured by Huastecs on the spot, carried by them there, or carried by men of another tribe in trade is uncertain; at any rate it proves Huastec influence to that point.



Careful search in the neighborhood of Brownsville has, in the last thirteen years, resulted in the discovery of the broken fragments of five pottery vessels. In every case the majority of the vessel was found and the shape and type of decoration were evident; most of them have been restored. Each was found in a separate locality but within a radius of fifty miles of Brownsville, four of them within five miles of each other. At least two were found in connection with interments, and probably all were funerary in purpose. Ornaments of shell were found with two of them.

Four of these vessels are ollas of considerable size, fourteen to fifteen inches in height and ten to fourteen inches in diameter; the fifth is a bowl. The ollas are of three different shapes, one of them very unusual and differing markedly from the other two.

The ware is of a very high grade, hard baked and thin. It is nowhere over three-eighths of an inch in thickness, averaging less than one-quarter inch, and much of one of the largest ollas is only one-eighth of an inch in thickness. The paste is fine and of a cream-buff color. One is painted entirely with bright red on the exterior; the two ollas of similar shape are dichrome, painted in red and sepia designs on the cream ware; and the olla with handles and the bowl are painted with designs in sepia.

Mr. A. E. Anderson in his article on "The Artifacts of the Rio Grande Delta Region," this Bulletin, Volume four, September, 1932, pages 29 to 31, distinguishes five types of potsherds in this region:

1. Grey colored, thin, decorated with asphalt lines and coated with asphalt internally.
2. Buff colored, thin, not decorated, fire blackened.
3. Brick-red colored, purplish cast inside: three-eighths inch thick.
4. Light, greenish-gray colored, wash-blackened outside, brown inside; five-sixteenths inch thick.
5. Heavy, buff to brown colored, no fire markings.

Probably not all of these types are intrinsically different. Decorated and undecorated portions of the same vessel may be included in different classes, and frequently, due to uneven baking, the nature of the ware and color of the same vessel may differ in different parts. The five vessels apparently might belong to one or several of the first four types.

The forms and decorations of these five vessels are shown on plate 6. Outlines of only four of them are shown since two are of practically the same shape and size, that shown in Figure 22.

The olla shown in Figure 21 is about fourteen inches in height and ten inches in maximum diameter. The shape is unusual with base very convex. The two vertical loop handles are eccentric and asymmetrical, as if a third one were intended and never placed. The ware is a creamy buff, slightly reddish in places, and not coated with asphalt on the inside. The painted designs in sepia are very much eroded, but seem to be as indicated in Figure 23. There are two zones, one on the neck and one on the body, the horizontal lines being at the junction of body and neck. The designs are mainly curvilinear, and if at all pictorial are conventionalized beyond identification.

Figure 22 shows the shape of two ollas of similar size, about fourteen inches in height and maximum diameter. The bases are concave and the rims not everted. The paste is light cream color, well kneaded and evenly kilned, and very thin considering the size of the vessel, some parts being only one-eighth of an inch in thickness, and nowhere over three-eighths of an inch. The base and the lobe were made first, the neck being then made and built on with a lap-joint.

The decorations of these two ollas are similar in plan, though differing considerably in detail. Both are painted in polychrome, red and black or sepia, and apparently blends of the two colors, on the natural cream. Sections of the two decorations are shown in Figures 24 and 25, the former being rather well visible, the latter much eroded and in places uncertain. Each consists of a number of horizontal bands or zones separated by thin horizontal lines. These separating bands in every case consist of two

thin parallel black lines enclosing a line of red or white. In the Figures red coloring is shown by hatching. In Figure 24 the red and white lines alternate in pairs; in Figure 25 they alternate singly. The neck above the decorative zones is painted a dark brown, the lower part of the body below the decoration a light brown or tan; both of these colors may have been made by blending the red and sepia in different proportions.

The decoration of Figure 24 consists of four zones, that of Figure 25 of five zones. The upper zone in each consists of a sinuous line. The second zone in each is similar in that red coloring is utilized in the motive in this zone and nowhere else. The designs bear some resemblances to each other and seem to be non-pictorial; if the design on Figure 25 were better preserved the resemblance might be more apparent.

The next zone of Figure 24 is of double width and may be considered as including zones three and four which are shown in Figure 25. In the latter Figure the design of zone four is entirely illegible, and of zone three only enough is visible to indicate apparently asymmetrical elements. Both of these zones may have borne naturalistic elements like that on the double-width zone in Figure 24. Here is shown a conventionalized animal figure. There are at least two of these animals in this zone, one in black and one in red. The red figure, like all red elements, is bordered with a black line.

The fifth and lowest zone in each bears a running motive that may be very conventionalized naturalistic. The two bear some resemblance, which might be more obvious were it better preserved in Figure 25.

Another olla of very similar shape and size but with everted rim is shown as Figure 28. It is about fifteen inches in height by fourteen in maximum diameter, the thickness of the wall from three-sixteenths to three-eighths of an inch. It had no painted decoration, the exterior being a bright red throughout. The nature of the paste was not noted, but is presumably creamy buff like the other specimens. With it were found some burnt shell beads.

The bowl is shown as Figure 27, the proportionate size being twice that of the ollas. Above it in Figure 26 is shown a portion of the painted decoration. The bowl is about seven and three-quarters inches in diameter at the rim and about four and one-half inches in height. The ware is grayish, the walls from three-sixteenths to five-sixteenths of an inch in thickness. The usual American technique of mending cracked pottery vessels is illustrated in this bowl. Four biconical holes were drilled close to the fracture, one pair on either side of the crack near the rim, the other pair near the base. Through these holes thongs were certainly passed to draw the edges together. There is no present evidence that the crack was coated with pitch to make it water-tight, though this was presumably done.

Except for the decorative band on the relatively vertical upper body, the bowl was entirely covered, inside and outside, with a wash of very dark brown. The decorative band is in the same color. This consists of a thrice-repeated element, separated by vertical bands and lines. The spacing is not accurate so that there are frequent variations in the number of lines and bands, even those composing the main motive. This is composed of parallel lines in different directions, triangles or scallops and concentric semicircles. The origin is probably naturalistic, the semi-circle representing the eye of an animal, and the motive is probably a highly conventionalized fish.

These five vessels have superficially a very Huastecan aspect which is less obvious upon detailed examination. They differ considerably from the typically Huastec melon vessel from San Fernando, Tamaulipas. The resemblance is mainly in the ware which is in both cases a creamy buff, thin and hard, and in the colors, a very dark brown or sepia, and red. Since the environmental aspects of the two regions are relatively similar, it may be that the same type of clay and the same pigment materials—in the case of the black, probably asphaltum—are found in both regions and need not indicate influence. Nevertheless they are very similar. Better criteria are shape and design motives.

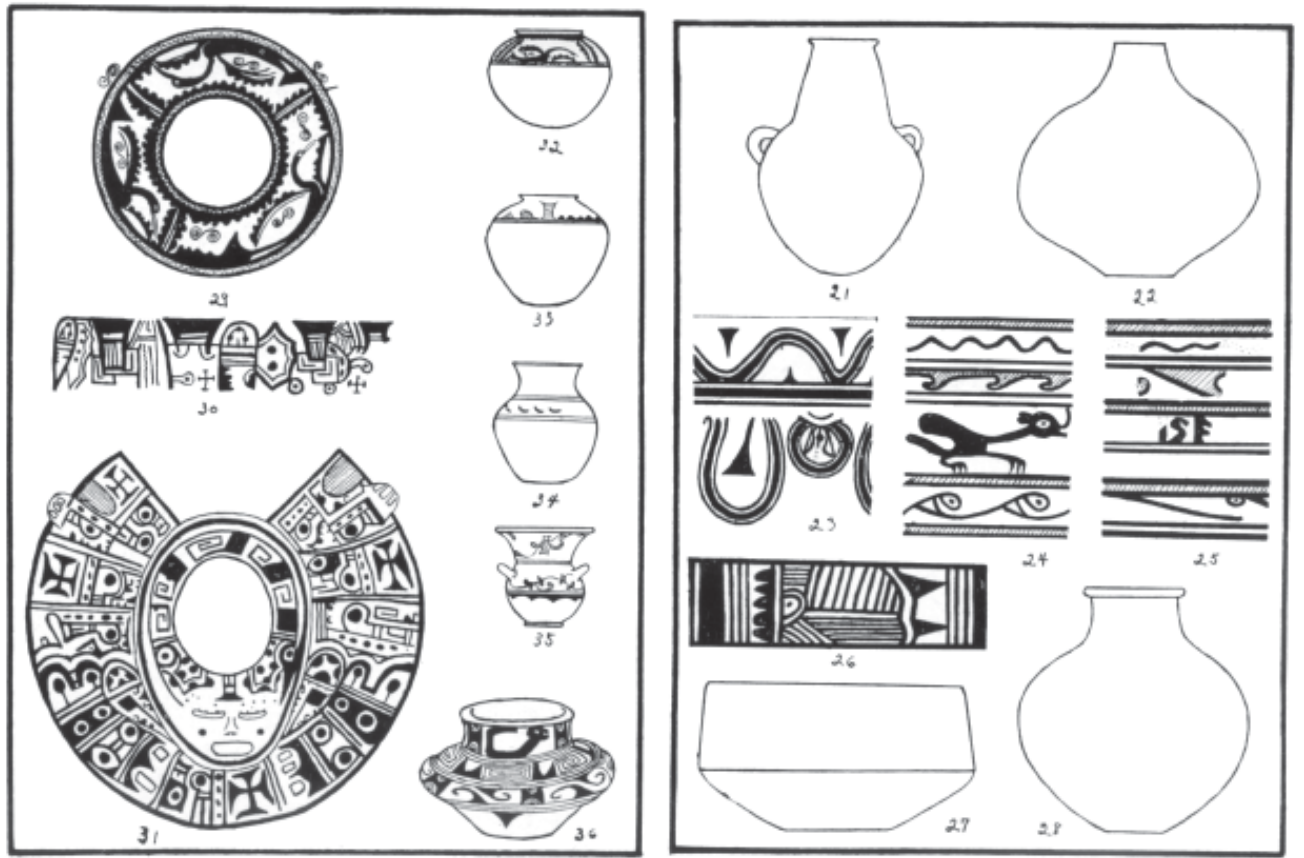


PLATE 6.

DECORATED POTTERY VESSELS FROM THE  
NEIGHBORHOOD OF BROWNSVILLE, TEXAS

21. Olla of cream-colored ware with painted decorations in black.
22. Shape of two ollas of cream-colored ware with painted decorations in black and red.
23. Part of the painted decoration of the olla shown as No. 21.
24. Part of the painted decoration of one of the ollas shown as No. 22.
26. Part of the painted decoration of the other olla, shown as No. 22. (In Nos. 24 and 25 the hatching represents red coloring).
26. Part of the painted decoration of the bowl shown as No. 27.
27. Bowl of cream-colored ware with painted decorations in black. (The proportionate size is twice that of the ollas).
28. Olla of red or red-slipped ware.

ANCIENT AND MODERN HUAXTEC POTTERY

29. Decoration of modern Huastec olla. (From Starr).
30. Decoration of ancient Huastec vessel, in black on cream. (From Seler).
31. Decoration of ancient Huastec effigy vessel, in black on cream. (From Seler).
32. Modern Huastec olla of cream-colored ware with decorations in black. (From Starr).
33. Modern Huastec olla of cream color with decorations in black. (From Starr).
34. Modern Huastec olla of red or red-painted ware with decorations in white. (From Starr).
35. Modern Huastec olla of cream color with decorations in black. (From Starr).
36. Ancient Huastec olla of cream-colored ware with decorations in black. (From Seler).

Pottery vessels of the shape of those from the region of Brownsville are not common, if known, in Huastec archeological collections. But it must be admitted that collections from this area are few and small, and that vessels of the size of those from Brownsville would rarely be preserved intact and enter into collections. They must have served as utilitarian water-containers and consequently not have been so ornately decorated and desirable to pot-hunters as the smaller mortuary vessels that form the greater part of most archeological collections. Prieto mentions and figures (Plate 2, Figure 1, opposite page 20) an olla of the general shape of these, which he found in his excavations in Sierra la Palma in the Huastec region. It is, however, more elongated; Prieto gives the dimensions as 50 centimeters in height and 15 in maximum diameter, about 20 by 6 inches; this would make it taller and narrower than any of the Brownsville vessels. If the proportions given in the drawing of it are correct, however, and the height given correctly, the diameter would be about nine and one-half inches. It resembles one of the Brownsville ollas in having two vertical loop handles on one side.

Smaller vessels of the general shape of the Brownsville ollas are known in Huastec archeological collections, generally more squat, with the diameter exceeding the height, and it is probable that the ancient Huastecs made vessels very similar to the Brownsville ones. In Figure 36 on plate 6 is shown one of these squat ollas, though this was selected for decoration rather than for shape; others resemble slightly more the Brownsville vessels. This Figure, as well as the Huastec decorations in Figures 30 and 31 were copied from the most important article upon Huastecan archeology, "Die Huasteca-Sammlung des Kgl. Museums für Volkerkunde," by Caecilie Seler, Baessler Archiv, V, 1916, pp. 98-136.

However, modern native pottery made and sold in the Tampico region today is of shapes closely resembling the Brownsville ollas. These are of two types, according to Dr. Frederic Starr who described them in "Notes Upon the Ethnography of Southern Mexico" in the Proceedings of the Davenport

Academy of Sciences, IX, Part 2, pp. 7, 8, Davenport, Iowa, 1902. He says "the finer (type) is a yellowish-gray or cream-colored ware with brown patterns; this is made at the Aztec town of Huejutla in the State of Hidalgo. The other ware is made into similar ollas, but is coarser, red in color, and with white decoration; it is made at Panuco. Both these wares are unglazed." The shapes of these vessels, copied from the above publication, are shown in Figures 32 to 36; the decoration from Figure 32 is shown as Figure 29. These vessels are now in Field Museum, Chicago, and their paste and pigments suggest that the modern potters are carrying on the ancient Huastec pottery traditions, presumably also in shapes. As an interesting side light, Dr. Starr remarks that these "in form and decoration more nearly resemble the wares of the Pueblos of New Mexico and Arizona than any other Mexican pottery we have seen." The modern vessel in Figure 34 resembles closely the Brownsville olla in Figure 28 in shape; both of these are of red ware or slip. The loop handles of the modern vessel in Figure 35 are almost identical with those of the Brownsville olla in Figure 21, but set in a different plane.

As regards decoration, the resemblance between the ancient Huastec, modern Huastec, and Brownsville vessels is superficially obvious but evanescent. Much of this is probably due to the pigment and ware. Some ancient Huastec ceramic decoration is geometrical, but most of it is extremely stylized naturalistic, conventionalized almost beyond the point of recognition. Typical decorations are shown in Figures 30, 31 and 36 on plate 6. Occasional animal figures are but slightly conventionalized, as in Figure 36. The same remarks apply to modern Huastec ceramics and to the Brownsville vessels, though in detail the three types are unmistakably different. Floral designs, certainly a post-Spanish introduction, have crept into the modern Tampico pottery. Among the elements common to both ancient Huastec and Brownsville vessels, and to a less extent to modern Huastec vessels, are parallel straight lines and bands, scallops, triangles, concentric circles with central dot, and animal figures.

As a result of our comparisons we may probably conclude with reasonable confidence that the Brownsville vessels were not made by Huastecs as was certainly the vessel from San Fernando not far to the south, but show Huastec influence to a moderate degree. As no objects of European culture were found with them they were probably contemporary with pre-Cortesian Huastec ceramics and, being of a relatively high degree of ceramic technique, were probably made by a people above the cultural level of the miserable hunting tribes living there within the last few centuries. It is possible, however, that these specimens antedate the classic Huastec period. If they date from about the time of the Conquest, they were presumably made by one of the Coahuiltecan tribes; if much older, their affiliations will be in doubt until much farther work is done in this region.

Coming farther north to Rockport, about one hundred and fifty miles north of Brownsville, Mr. George C. Martin and several colleagues have in recent years studied the archeology of the coastal region and have found evidence of a culture rather higher than, and different from, that found farther inland. In the central part of Texas the archeological ruins consist mainly of "burnt-rock mounds" which were probably remains of cooking hearths and which contain flint objects but no pottery, or pottery of a crude Plains type. In the coastal sites the rock mounds seem to be unknown, but in the sand dunes are found fragments of pottery of a much higher type.

The pottery of the Rockport region has been described in several articles in this Bulletin: "Notes on some Texas Coast Camp-sites and Other Remains," by George C. Martin, Volume 1, pages 55, 56, 1929; "Ornamentation on the Pottery of the Texas Coastal Tribes," by Wendall H. Potter, Volume 2, pages 41-44, 1930; "Texas Coastal Pottery" by George C. Martin, Volume 3, pages 53-56, 1931. These three articles afford a considerable body of data on the ceramics of the Corpus Christi-Rockport region.

Potter groups the ceramics into three types: a coarse, heavy cooking ware, a lighter cooking ware,

and a thin liquid-containing ware. The first two groups are undecorated and not coated with asphalt. The shell tempering used in the first type is obvious but not so evident in the second type. Shell tempering is undetectable with the unaided eye in the third class of ware, and a microscopic examination would be required to determine the nature of the tempering. It may be very finely pulverized shell; if of another material it might indicate that this ware belongs to a different culture from the cooking ware. At any rate the first two classes are so lacking in characteristics, in the absence of complete or restorable vessels, as to be of no present value for comparative purposes.

The vessels of the third class are of extremely thin ware, from two to four millimeters in thickness. Potter mentions one of a thickness of one and one-half millimeters. The vessels could not have been large; Martin estimates them as from three to ten and one-half inches in diameter. Probably bowls and small ollas of simple shapes were typical, but not enough of any vessel has been found to restore it. The ware is light in color, generally a pinkish cream. They are often coated with asphalt, generally inside, occasionally also outside. In addition there are simple decorations on the exterior, apparently also in asphalt. Wavy lines and dots comprise the typical decorations. Some sherds are decorated with incised lines, and the rims of some are notched or scalloped.

Comparing these ceramics with those from the Huastec region and from Brownsville it will be seen, as expected, that they bear even less resemblance to Huastec than do the Brownsville vessels. The additional untypically Huastec characteristics of incised decoration and notched rims are introduced. The former is found in Huastec ceramics but is not characteristic: decorated rims are unknown and un-Mexican. The vessels are smaller; the shapes, so far as we can determine, are different, as are the designs. But the Huastecan characteristics of fine, thin creamy ware decorated in black pigment derived from asphalt remain, and we are probably justified in deciding that they indicate Huastec influences this far north and east.

The identity of the manufacturers of this fine grade of Texas Coast pottery is far from certain. In historic times this region was occupied by the Karankawan tribes, a non-agricultural people of low culture. Reports credit them with having manufactured only a poor grade of pottery or cooking vessels, and the identification of the makers of this fine pottery with the Karankawan seems incredible. Gatschet<sup>6</sup>, almost our only authority upon the Karankawa, reports "Asphaltum was often washed ashore and used by the Indians for black paint, after mixing it with oil (p. 54). They prepared but one kind of pottery from clay, the vases having a globular bottom so that they had to be placed in a hole in the sand. They had no handles and measured in diameter about twelve inches. Mrs. Oliver observed their manufacture but once; then it was a man who made some pots and ornamented them on the outside with little designs, faces, scrolls, scallops, etc., in black paint" (p. 59).

The probable explanation has lately been given me in correspondence from George C. Martin of Rockport. According to his latest researches, Karankawan sites can be distinguished from Coahuiltecan, though in certain regions sites of the two tribes are found in the same localities. Little pottery is found in the distinctly Karankawan territory of Matagorda and San Antonio Bays. Much more is found in the region of Copano, Aransas, Corpus Christi, and Nueces Bays, territory which was occupied by both tribes, and south of the Nueces pottery is most plentiful on land occupied only by Coahuiltecan and Lipan tribes. However, such sherds as are found in the Matagorda Bay region are identical with those found south of the Nueces. We can hardly hesitate, therefore, in assigning the fine pottery of the Texas Coast to the tribes of the Coahuiltecan or Pakawan group whose territory extended for an uncertain distance south of the Rio Grande into Tamaulipas. That they had more or less intimate contacts and trade relations with the Huastec is quite probable. Between the two, however, tribes of the Tamaulipecan group apparently intervened. These have long been extinct and almost nothing is known of them. The Coahuiltecan also probably became extinct about fifty years ago.<sup>7</sup>

The geographical and temporal relations of the Coahuiltecan and Karankawan tribes are uncertain, but the evidence of the pottery indicates that the Coahuiltecan at one time ranged as far northeast as Matagorda Bay. Mr. Martin believes, on stratigraphic evidence, that the Karankawans were the earlier population, later partially displaced by infiltration of Coahuiltecan peoples. At any rate, apparently through the medium of the Coahuiltecan, we have traced Mexican, and specifically Huastec, influences to this point on the Texas coast.

Between Rockport and the Mound region of Louisiana the coast region seems to be archeologically almost unknown<sup>8</sup> and there are no reports of any evidences of higher culture. Mr. H. E. Elrod of Houston, whom I visited in 1932, knows of no sites of any importance on the coast east of Rockport. This is disappointing, but we should remember that it was not until very recently that anything was archeologically known of the Gulf coast north of Tampico. If discoveries of pottery of a higher grade than that found in interior Texas, and with the same Huastec characteristics as that found around Rockport, should be made on the East Texas Coast, it would extend the area of proved Mexican influence that much farther toward the Mississippi River. Having set in evidence the data suggesting that certain Mexican, and specifically Huastec, elements are found on the Texas Coast at least as far north as Rockport, it would be pertinent now to inquire whether these traces point, and in what region are found the greatest number of apparent Mexican elements and resemblances. Without going into the question in detail, I may say that most of the apparent Mexican traits in the mound region of the southeastern states and the Mississippi Valley appear, on careful examination, to be superficial or non-existent. There are certain resemblances that point to a cultural connection on a very ancient horizon, certain traits that may at one time have been common to the entire Mexican-Mississippi area, and other resemblances in art so close, and with such complexes, combinations and associations of elements as to suggest the influence of trade or the migration of a small band on a very late horizon. But on the whole a careful scientific

comparison of the two regions shows little in common.

With one specific region, however, a recent study of pottery types demonstrates surprisingly close resemblances. I refer to Dr. George C. Vaillant's article "Some Resemblances in the Ceramics of Central and North America," published in "The Medallion," Gila Pueblo, Globe, Arizona, August, 1932. Dr. Vaillant studies eleven detailed ceramic types which are common to Mexico or Central America and to regions in the United States north of Mexico. Remarkable to say, not one of these types appear in the eastern mound region nor in the Pueblo region. All are found, however, in the mound region of Arkansas, five in Louisiana, and one or two in Mississippi and Tennessee. Two are found on the Gila River in southern Arizona and two in the Casas Grandes region of northern Mexico.

Coming to Mexico proper, the absence of most of these types from Aztec and Toltec is noteworthy. Most of them are also not found in the Archaic Culture of the Valley of Mexico, and the few found are generally rare or of late introduction. A few are found in Michoacan, Jalisco and western highland Mexico, but on the whole the resemblances between the ceramics of the highlands of Mexico and any region of the United States is almost nil. On the other hand the entire eleven are found in, and are for the most part characteristic of, the cultures of the Atlantic Coast, either among the Maya proper, the Huastec, or other cultures of Central America. The case is very good, therefore, for a cultural connection between the mounds of the Arkansas region and the proto-Maya region of the Atlantic Coast of Mexico and Central America.

The mounds of the Arkansas region are generally ascribed to the ancestors of the present Caddoan tribes. This is significant, for I believe that the theory is coming to be generally accepted that the Caddoan peoples represent one of the primitive populations of the prairies, in much of which territory they were later supplanted by the Siouan, Algonkian and other peoples. They were a semi-sedentary and largely agricultural people, occupying more or less permanent villages surrounded by fields of corn.

Apart from the ceramics, several other elements of their culture point definitely toward a Mexican point of origin, especially the religion. The Morning Star Ceremony of the Pawnee with its accompanying arrow sacrifice has often been advanced as evidence of Mexican contact, but in Mexico this ceremony is best known from the later Aztec; whether it also obtained among the Atlantic Coast peoples and the Maya is not certainly known. It is also significant that spool-shaped ear-ornaments, one of Moorehead's criteria of Mexico-Mound connections<sup>9</sup> are especially typical of the Arkansas mounds. Of Moorehead's other criteria, tripod vessels are also especially characteristic in the Arkansas mounds. The incised pottery, especially the scalloped or serrated lines with rows of triangles filled with hatching or cross-hatching, closely resembles early Maya pottery from the highlands of Guatemala. Truncated pyramids are absent, these being most characteristic of the region east of the Mississippi. In art, the plumed or feathered serpent and engraved gorgets seem to be less typical than in the regions east of the Mississippi. The fact they apparently prepared their corn in mortars instead of on the metate introduces a disturbing factor. Metates seem to have been absent also on the Gulf Coast, the ancient inhabitants of which may have been, like the recent peoples, non-agricultural.<sup>10</sup>

As we have seen, Mexican influence in the Mississippi Valley and the Mound region proper is so unproved as to be doubtful, while that in the Caddoan mounds of the Arkansas Valley seems highly probable. Therefore it may be expected that traces of Mexican influence will not be found east of the Caddoan region or on the Gulf Coast east of the territory south of the Caddoans.

In summary, we have shown that Mexican influence via the Antillean-Florida route is unproved and highly improbable. That via the Pueblo-Canadian River is also unproved and doubtful. Close connections between the Huastec and the Texas Coast as far east as Matagorda Bay are reasonably certain, and the resemblances between Mayan and Eastern Central American pottery on the one hand, and ancient Caddoan on the other are so great as to make some connection an

unavoidable hypothesis. There would seem therefore to be a continuous connective line from Central American through Maya, Huastec and the Texas Coast to the Caddoan region. This awaits further investigation, but it is probable that we are dealing with several different temporal and cultural horizons. The resemblances between Mayan and Caddoan are mainly in pottery shapes, though also to some extent in pottery decoration. This decoration is, however, very different from that of the Huastec and the Texas Coast. The buff ware of the Huastecs, painted with black and with asphalt in curvilinear designs, is characteristic of the Huastec alone and not of the Mayan peoples in general. On the other hand the ware of the Texas Coast shows little resemblance to that of the Caddoans. But the fact that we have strongly indicated that the influence of the Huastec, a people linguistically Mayan, extended far up the Texas Coast to peoples in contact with the Caddoans makes the larger extension of influence from the typical southern Maya to the Caddoans themselves highly probable. It is likely that we are here dealing with two temporal horizons, an earlier one in which generalized Mayan elements extended to the Caddoans, and a later one in which specifically Huastec elements spread to the Coahuiltecan of the Texas Coast.

For more definite conclusions on this important problem we need farther careful investigations of the Mexican and Texas Gulf Coast, especially east of Rockport and south of Brownsville, far more archeological and ethnological knowledge of northern Mexico, more comparisons such as the recent work of Vaillant, especially that between the archeology of the Caddoan mounds and the proto-Maya, particularly that of the Guatemalan highlands, and certain specific studies of fundamental elements of Mexican, Puebloan and Mound cultures, such as the extent of the metate versus the mortar, and the cult of the plumed or

horned serpent, with their temporal and geographical extensions.

—Museum of The University of Pennsylvania,  
Philadelphia, Pennsylvania

1. Charlotte D. Gower: "The Northern and Southern Affiliations of Antillean Culture"; Memoir 35, American Anthropological Association, 1927.

2. Warren K. Moorehead, "Archeology of the Arkansas River Valley"; Department of Archeology, Phillips Academy, Andover; New Haven, 1931.

3. Since this article was first drafted, our knowledge of northern Mexico has been greatly enlarged by the publication of the series "Ibero-Americana" by the University of California.

4. Jesse Walter Fewkes: *Certain Antiquities of Eastern Mexico*; 25th Annual Report, Bureau of American Ethnology; Washington, 1907.

5. Alejandro Prieto: *Historia, Geografia y Estadística del Estacado de Tamaulipas*; Mexico, 1873.

6. Albert S. Gatschet: *The Karankawa Indians*; Archeological and Ethnological Papers of the Peabody Museum, I, 2; Cambridge, 1891.

7. For further archeological and historical data on northeastern Mexico and southwestern Texas see Gatschet, *op. cit.*, Prieto, *op. cit.*, and the series of *Ibero-Americana* (University of California, Berkeley), especially "The Comparative Ethnology of Northern Mexico Before 1750," by Ralph L. Beals.

8. See "The Archeology of East Texas" by J. E. Pearce, in *The American Anthropologist* (n. s.), 34, 4, pp. 670-687, October-December, 1932; Report on Conference on Southern Pre-History. (Held under the auspices of the Division of Anthropology and Psychology of the National Research Council at Birmingham, Alabama, December, 1932. Unpublished report).

9. Warren K. Moorehead, in the *American Anthropologist*, n. s., 31, p. 552, 1929.

10. However Gatschet reports, regarding the Karankawa (p. 69): "Instead of mortars the women used cylindrical low stones for mashing and grinding fruits or seeds, a larger stone being used upon them for crushing." This certainly seems to indicate that a metate-like implement was in use.



## ARCHEOLOGY OF A SECTION OF UPPER RED RIVER DRAINAGE

BY ADOLPH HENRY WITTE

The following article will describe artifacts found in Indian camp sites situated within a radius of fifty miles of Henrietta, Texas. The region is mostly prairie which is in places broken by low rolling hills and wide river valleys. Big Wichita River, Little Wichita River, and their tributaries are the main streams. Both rivers empty into Red River, and campsites along that stream were investigated. The surface geological formation is typical Permian, with red clays, blue shales, gray sandstone outcrops and sparse beds of water-worn pebbles and boulders. There are many sand dunes. No deposits of flint are known locally, but silicified wood, quartzite and fine granular conglomerate are plentiful.

The larger streams are rarely completely dry, and a few springs with permanent water are found back in the hills. Between the valleys are areas, often miles across, without water except in times of heavy rainfall. A dense stand of pecan, oak, elm, cottonwood, several varieties of wild plums, red haws and other tree species cover the stream banks. Water and wood with edible fruits and nuts made an enticing combination to the aborigines. Their forest economy required all of these items to exist. Around many of the campsites today, large thickets of wild plums are growing. Pits discarded by the Indians, when fruit was brought into the villages, may have started the plum trees on these locations.

The local pebble deposits have all been worked, and many small boulders have fractured edges. These broken stones are the result of systematic testing for suitable materials. Deposits of patinated tools have been exposed in many places. Hundreds of campsites and workshops are known. Nearly all types of artifacts have been found within the bed of Little Wichita River, during seasons when the bed was dry. There is some evidence that this stream bed was used at times as a campsite and workshop. Climatic changes have taken place since many sites were occupied. Tubular mortar holes and other archaic culture sites are known, located at considerable distances from present-day permanent water. These waterless sites are found near the

margins of depressions that once were lakes, and along dry branches.

A majority of all known campsites are in the valleys on elevations above the high water mark. These elevations occasionally are sand dunes which are highly retentive of moisture, and no better soils could have been found for agricultural use. Successive tribes, coming into this locality always occupied the same sites. The artifacts found on one of these spots often range from thick paleolithic axes and leaf shaped points to tiny pressure flaked arrowheads of the finest technique.

A few of Dr. Pearce's types from the three levels of Central Texas middens are found.<sup>1</sup> Considered as a whole the predominant patterns are different. Excavations carried through certain of these local sites should expose the stratigraphy and tell the sequence of various types.

### *Projectile Points*

In the absence of flint deposits in this region, the stone workers faced a difficult situation. Fifty per cent of the medium and large points were chipped from local deposits. The remainder were from supplies obtained at an unknown distance. An exhaustive study of types would reveal 50 or more. The average point is about 1 1/2" long, 3/4" wide, and 1/4" in thickness. It has a thick appearance, and is shouldered deeply with a straight or a tapering tang. The tang with the notched base is rarely found. A fair percentage show bevelled edges, also bevelled tangs. Five specimens, closely approaching Folsom Spears, are in the writer's collection. Two show channeled centers on both faces. On one, the concavity extends almost to the point. A third specimen is not fluted, but otherwise is of exactly the same type as the others and is 3/8" long. It and No. 4 have been crudely resharpened. Only the base of No. 5 was found. It carries the most patina of any in the lot. All are products of a superior technique. Three or four other types of local stemmed and shouldered points occasionally have fluted faces.

Ninety-five per cent of the small points, awls, and scrapers are made of imported materials, mostly of fine flint. The local deposits did not provide a suitable stone. Certain patterns are always patinated. Pigmy tools are plentiful at the few sites containing pottery. Of the dozen or more patterns found, some are quite small. These must have been used as dart heads for the blow-gun, as Dr. Ray has suggested. Some groups received an unnecessary amount of flaking. Was this extra effort expended upon thin small flakes in order to further lighten them and make possible their use in the blow gun? One triangular shaped type has no notches, and on another, although it is shouldered, the tang tapers. The shaft would become detached, instantly, once these became embedded in wounds.

#### *Awls*

Awls are from ¼" to 3" in length, oval, round, or rhomboidal in section. The base as a rule is a thin flake, sometimes sharpened into a knife. There are several types. Projectile points reworked into awls are not uncommon.

#### *Copper Ore*

A few small pieces of copper ore have been found at some of the pottery sites. Local deposits of this mineral are common.

#### *Obsidian*

Part of one medium sized projectile point of this uncommon mineral and a few unworked flakes came from a sand dune site.

#### *Grooved Maul*

An extremely weathered maul was found on the Dry Fork of Little Wichita river. The groove extends three quarters of the distance around the stone. The existence of two other grooved mauls from this County, is well authenticated by reliable persons.

#### *Anvils*

A few quartzite boulders that had been used as anvils were found. One was roughly square and weighed 7 pounds. Two flat sides showed countless scars from battering. Another was only half as large. Both were water worn boulders and showed no previous preparation.

#### *Quartz Chips*

Clear quartz flakes are found on many sites. Occasionally the small pebbles from which the chips were removed are found. None of these show that any attempt to fashion them into tools has been made and no artifacts of this particular mineral are known locally. Ceremonial use is the probable explanation. Quartz crystals play an important part in certain phases of the ceremonial life of the modern Pueblos. The crystal is used by the medicine men at Acoma. (L. A. White).<sup>2</sup> Fewkes mentions their use among the Hopi.<sup>3</sup> Frank H. H. Roberts Jr. found quartz crystals in early pueblo mortuary bowls in Southwestern Colorado. (Bureau of American Ethnology, Bulletin 96). John P. Herrington found these crystals in excavations on the Burton Mound, and describes methods of attaching quartz crystals to wands and pendants. (44th Annual Report of Bureau of American Ethnology, pp. 92, 93).

#### *Hematite Objects*

Nodules of red hematite, the size of a man's thumb or smaller are found locally. Lumps of hematite have been picked up on many campsites with one or more sides ground off. Only one nodule showed attempts at flaking. There seems to be an absence of chipped artifacts of this material. A site near Denton, Texas, furnished a large chipped gouge of hematite. Gouges from East Texas are often of this mineral. A small celt, beautifully polished, was found locally, also part of another, (the cutting edge only).

#### *Limonite*

A site on a bluff near the waters edge of Red river, in the northeast corner of Clay County furnished a well polished specimen. The size is ¼" x 1", 15/16" x 2". The corners are all square and an irregularly shaped hole is near the center of one end. It could have been used as a pendant as well as a paint stone. A side scraper of unpatinated blue flint and a thick chert knife, without notches were picked up near by. Oval mano stones and percussion flaked blades were found also.

#### *Grooved Spheroid*

A grooved, unpolished sandstone spheroid came from a Little Wichita river camp. Diameter 2". Mr.

D. L. Bennett discovered a polished celt of diorite in a site on the same river. Part of a thin, polished, oval pendant of blue slate was also found. Near one edge was a hole for suspension. It had been drilled from both sides, though the object was only ¼" in thickness. Slate is not usually found here.

The few fragments of bone tools found in most sites are generally too small to identify. Three types of finely polished bone implements came from a Big Wichita river location. They were made from the split long bones of some medium sized animal, possibly a deer, and these could be classified as an awl, a punch, and perhaps a chisel.

The same site furnished a most interesting lot of artifacts of other materials. The midden is five feet or more thick at one spot near the river's edge and covers several acres. The following objects were picked up: a six inch sandstone arrowshaft polisher, a small polished celt of green stone, (mineral not identified), a large fragment of a sand stone pipe, elbow type, a bevelled four-edged knife, pot sherds of several sorts, spear heads as well as many small points for the bow and arrow.

#### *Manos and Metates*

Metates apparently are of local stone and show little or no preparation.

The shallow oval type is common, but the deep round sort is sometimes found. Many basins have a pitted surface. The average weight is from 20 to 40 pounds. The manos are of novaculite, quartzite, puddingstone, etc., and possibly some of the materials are not of local origin. The sizes range from 1" x 2 ½" x 3" to as large as 1 ½" x 5" x 6". Some manos have one, two, three, and in some cases four usage planes, as well as the single and double convex types. Several cultures are involved. One uncommon pattern is worn in nonparallel planes on both surfaces. Pearce and Jackson found this type at the Fate Bell shelter, Val Verde County, Texas. Manos are also found with faces roughened by pecking.

Large numbers of broken manos are found. This is a surprising fact, as the materials of these tools were not often used for other artifacts. Could these hand stones have been broken purposely to prevent others from using them?

#### *A Historic Burial*

The amateurs who discovered and excavated this grave were reported to have found a red stone pipe and a copper or brass kettle. The location is at the bottom of an abrupt cliff beneath a mass of large boulders. The writer attempted no excavations, but removed from the surface, one worn human molar and more than a thousand Spanish glass beads. There were five colors, and they were in the following proportions: Large white, 1; small white, 525; large green, 2; small green, 447; large blue, 3; small blue, 1; large red, 3; small wine, 1. The red and the blue beads showed the greatest chemical alteration.

Similar glass beads have been shown the writer from near Nocona, Texas; Hawsell, Texas, and the Brown farm, 8 miles south of Henrietta, Texas.

#### *Historic Objects*

These include several specimens, some of which may have been lost by the Indians. Pieces of thick ware "Iron stone pottery," bottles, bullets of large caliber as well as round lead pellets, etc. Of more than usual interest are flints, chipped and shaped for the flintlock gun. Another object is of corroded metal (silver?) with a raised five pointed star in the center. It appeared to be an epaulet from a soldier's uniform.

#### *Mortar Holes*

Tubular mortar holes are found in various places in this region, generally in small groups of two or three. All specimens examined were quite similar except in two cases. No pestles have been found by the writer.

There is a group of about twenty mortar holes in a ledge of sandstone on the Hapgood Ranch. Six of the holes examined were filled with sand, and upon clearing them out, we discovered some small stones wedged in the bottom of five of them. A pinchbar was required to remove these rocks. They were unworked. An odd fact was noticed in that amongst the four or five water worn pebbles that came from each hole, one rock from each mortar was a conglomerate. The opinion of the writer is that the stones were placed there to reduce the depth

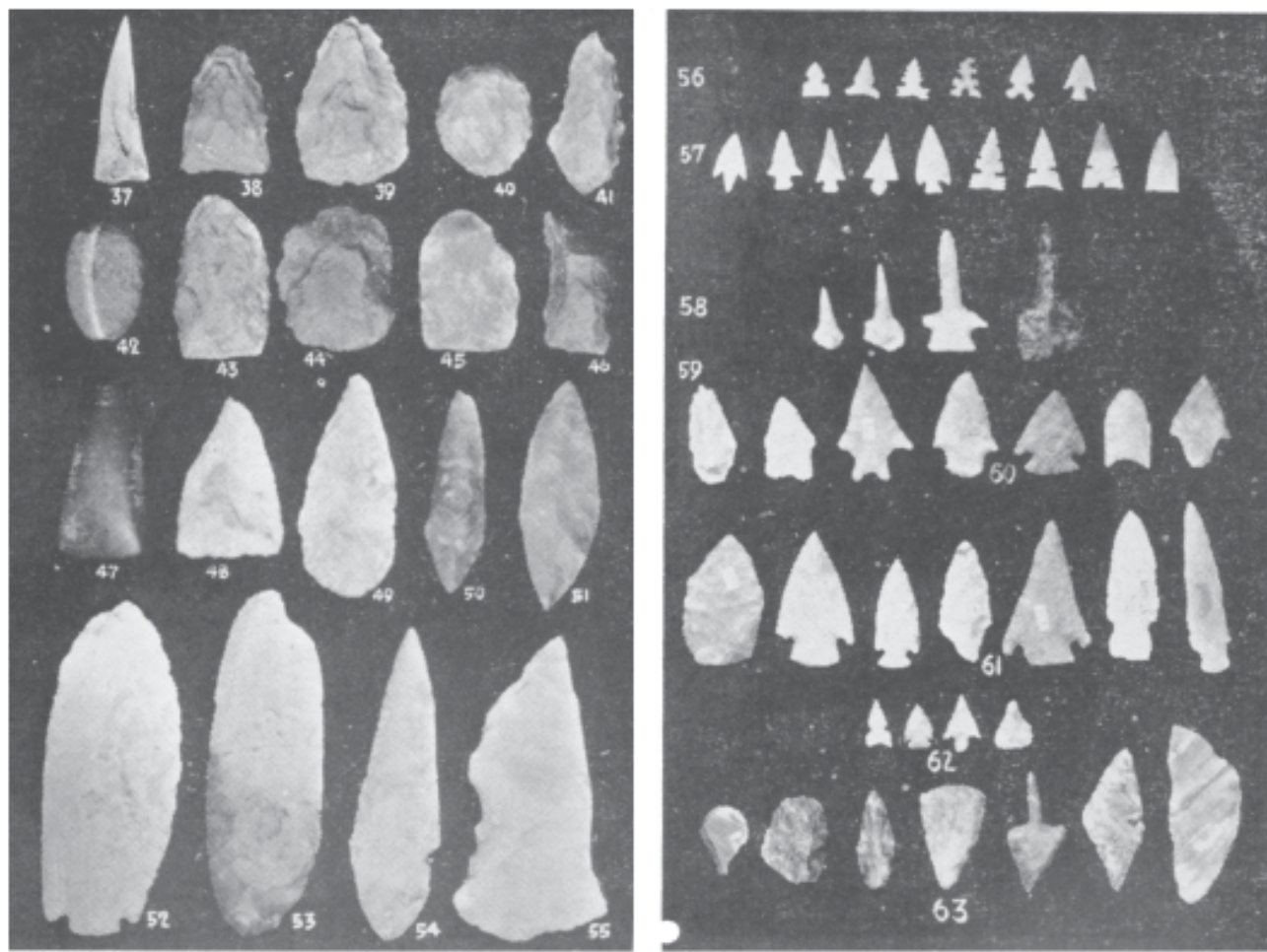


PLATE 7.

37. Polished bone awl from Big Wichita River midden.
38. 39, 42. Thick core tools, worked on both faces.
40. Thick disc worked on one side only.
41. A grooved quartzite spheroid, 2" in length.
- 43, 44, 45, 46. Thick core tools, worked on one side. The unworked side has a "crust" face.
47. Polished celt of diorite from pottery site.
- 48, 49. Quartzite knives.
- 50, 51. Four-edged bevelled knives.
- 52, 53, 54. Large flint blades, well patinated. 54 is 6" in length and bevelled to the right at the point.
55. Chipped flint ax.
- 56 and 57. Small points from this area.
58. Types of awls.
59. Small tool, triangular in cross section, with a claw-like point.
- 60 and 61. Points of various types and materials.
- 62 and 63. Points, scrapers, knives, etc. A sherd of black on white Pueblo pottery was found in one of these Red River sites.

of the holes. One of the mortar holes stood out from the rest in that it had a large (1/2" x 4") well defined groove in one side of the opening. It appeared as if the groove had been made as a chute for adding new substances to the mass being ground. This channel extended only a short way into the orifice.

Several of the mortars were surrounded by trenches, pecked into the surface of the ledge a few inches back from their margins.

When the sand-filled holes were opened, they presented a new unweathered appearance, almost as if recently made. In contrast, all the open ones were badly damaged by water standing in them after heavy rains.

A peculiarity noted was the triangular spacing of most of the holes into groups of three. This triangular arrangement has been reported at other sites in West Texas. The average size at this site was: Depth 13", diameter 7".

None of the mortar holes were of a depth greater than the average man could easily reach. The middens left by this culture could not be discovered. One artifact, a heavy bone crusher, was picked up nearby.

On the W. B. Worsham ranch, a peculiar thing was noticed about one of a small group of mortar holes. In one hole, extending from top to bottom, were three deep grooves which were perfectly parallel. On the opposite side, were three more similar channels.

### *Pottery*

The writer knows of six sites in which pottery has been found. Nothing but fragments were found. Without question some of the original vessels were large and would have held several gallons. The tempering materials were sand, gravel, charcoal, crushed shell, and various combinations of these substances. One sort, apparently scarce, has a red slip. Another type has a brown slip. Certain sherds have soot from fire on the outside, others are blackened only on the inside. The thickness varies, individual pieces measuring up to 5-8 of an inch in thickness. No decorated sherds were observed. The pastes used in manufacturing these vessels could have been obtained locally.

Four types of these sherds resemble East Texas pottery. Another is similar to a West Texas variety.

### *Mussel Shells*

Two species of fresh water mussels are found living in all the larger streams and lakes of this region. The aborigines ate both kinds. Fragments of shells are found at every site. A few indicate usage as scrapers. No carved or worked specimens have been found.

### *Scrapers*

Several scraper types, exhibiting various flaking methods, are known. Side scrapers were made on thick flakes, "half-moon shaped," and are found in large and small patterns. Another sort, always patinated, was made by trimming the thin edge of a flake in a straight line. Additional kinds were made on conchoidal flakes which were round or oval in outlines when finished. They range from large, to very small in size. The flaking was all done on the convex side of the flake. The bottom and unworked face of the tool is concave.

The "duck bill" type was mostly made on thick chips with square or semi-circular ends, accurately trimmed. All flaking was done on the convex side; the bottom side is a flake face. These were of various sizes. Many of the end scrapers are pointed and could be used as knives.

Dr. Cyrus N. Ray has described and pictured "Flint Cultures of Ancient Man in Texas," in volume six, Texas Archeological and Paleontological Society, a series of knife-scraper implements belonging to the Clear Fork Culture. Number 102 and Number 109 are known in this area and have the scooped-out feature on one side of the base. This same gouge idea persisted through a line of tools, and is found in small Wichita River scrapers, that are pear shaped and made on comparatively thin flakes. Dr. Ray's specimen, No. 107, with its minutely trimmed edges and "fluted" convex face is found sparingly. The core scraper, No. 104, is somewhat common. There are several sub-types of this last tool. The most extraordinary feature about this particular type of artifact is that it has a "crust" face on the unworked side. With one exception, (which shall be explained) all other familiar types

of scrapers from this region show a flaked face on the unworked side.

There is some evidence that the largest awls found here, as well as a certain type of blunt leaf shaped points, were made by the same culture responsible for the "crust" scrapers.

From some few sites, also in ravines and other spots, where no evidences of occupancy are discernible, another sort of "crust" tool has been observed. This is a disc implement, shaped like a truncated cone, which has a crust face on both bottom and top. The edges are irregular, sometimes roughly square, and in many cases are sharply undercut. The materials are small local boulders. Three typical examples measured: No. A, 2 ½" x 1"; No. B, 2" x 1 ¼"; No. C, 2 ¾" x 1 ½". The writer has never seen these core tools described or pictured except by European prehistorians, and suggests that they be known as Wichita Discs.

#### *Hammerstones*

Stones averaging the size of a man's fist were utilized for an unknown purpose. Most of these boulders show a few chips lost in the process of striking blows, which might indicate that they were used as hammers. However when found all of the angles and corners were rounded and worn off.

#### *Bone Crushers and Hand Axes*

Apparently, most cultures used bone crushers and hand axes of some sort. These exist in various forms and sizes. Many show but a few chips taken from one edge of a convenient stone. Other specimens were flaked nearly around; however one portion was always left unsharpened, so as to prevent injury to the hand.

#### *Knives*

Knives are found of an unknown number of culture types. With the exception of a few patterns, the blades are made of materials that could not be obtained locally.

The sequence of the various types is not known.

The reader is referred to the plate relating to this article for descriptions of the familiar types.

An unusual sort (not shown) is slender, pointed at both ends, and chipped on one face of a thin flake. Mr. D. L. Bennett recently showed the writer two similar specimens of knives. The blade is shouldered on one side only and the wide tang sets off at about a 30 degree angle to the long axis of the tool. When hafted the handle would be off-set. The modern skinning knife, found in any local butcher shop, illustrates this "off-set" idea.

Many of the knives and other tools of this region show a mastery of the flaking art, and the beautiful materials utilized, are comparable to those used in the gem-points from the Rocky Mountain States. In a number of cases, the point ends of projectiles are colored red. This probably was done intentionally by application of heat. Occasionally, flint implements contain minute fossils, which should assist in identification of the flint deposits from which they came.

So far as the knowledge of the writer extends, no research has been carried on in this locality previous to his own efforts. Several small collections have been gathered by local collectors. Mr. B. P. Schwend has a small stone age collection. Mr. D. L. Bennett has found more than 100 small points in one pottery site. He has other representative stone artifacts of this area. My brother, Mr. C. E. Witte, discovered a series of narrow tools, which are triangular in section and have claw-like points. The writer expresses his thanks to all the above mentioned gentlemen for their generous cooperation and suggestions.

Henrietta, Texas.

1. Pearce, "The Present Status of Texas Archeology," Vol. 3, 1932, Bulletin of Texas Archeological and Paleontological Society.

2. L. A. White, "Summary Report of Field Work at Acoma," 1928 American Anthropologist, Vol. 30.

3. J. W. Fewkes, "Sun Worship of The Hopi Indians," Smithsonian Report for 1918.

**REPORT ON POTTERY SHERDS FROM NEAR ABILENE, TEXAS**

BY JAMES B. GRIFFIN

The material discussed in this report was obtained from thirteen sites near Abilene, Texas. The pottery has been described according to the type of tempering material, texture of the paste and aplastic, surface hardness and finish, color, and the rim and lip shape where present. Only one site had any significant amount of decoration. An interesting feature of the report is the identification of the white aplastic so common in many of the sherds, by Mr. Frederick R. Matson. Each site is considered separately. The total number of the sherds is listed, and a distinction made between those donated to the Ceramic Repository and those to be returned.

## SITE 5

Number of sherds deposited in Ceramic	
Repository -----	3
Number of sherds to be returned -----	4
Total -----	7

The tempering material appears to be very fine grit, which may have been inclusive in the clay from which the pottery was made. The texture is fine and the hardness<sup>1</sup> is between 2-2.5. All of the sherds can be scratched on the outer surface by the finger nail. The paste is black. Both surfaces of all sherds are smoke discolored. There appears to be charred organic material on the exterior of three sherds.

The interior surfaces have been smoothed, and this is especially pronounced on sherd 52. The exterior surface of the three rim sherds was smoothed and then decorated by horizontal incised lines. Two of the body sherds have very narrow, shallow striations, set close together on the outer surfaces. The surfaces of the two remaining sherds are smoothed.

Decoration is limited to the three rim sherds. The horizontal lines on two are narrow and shallow,

and are spaced .5 to .7 cm. apart. The third rim sherd has medium wide (.4 cm.), rather shallow, incised lines which are about 1. cm. apart.

The lip on two of the sherds is rounded and slightly narrower than the rim. On one, the rim appears to be straight until just below the lip, where it is slightly everted. The incomplete rim section on the second sherd appears to be straight. The two lips are .5 to .6 cm. thick, while the base of the two rims is .7 to .8 cm. thick.

## SITE 15

Number of sherds deposited in Ceramic	
Repository -----	19
Number of sherds to be returned -----	6
Total -----	25

The first impression of these sherds is that all are very similar. While it is improbable that they are from the same vessel, they almost certainly represent the same type of container. The tempering material is very small and is white. (See Mr. Matson's report). From experiments made in the Ceramic Repository, I should estimate that the proportion of aplastic to clay would be 1 to 3. The texture is fine and compact. All of the sherds can be scratched by the finger nail. The color of the paste is bluish gray, while the exterior surface has turned a light tan due to oxidation during firing.

The exterior surface finish is smooth with little evidence of the type of implement used. The interior surface also shows smoothing but not to such an extent as on the exterior. Narrow, horizontal striations made by a smoothing implement, perhaps a pebble, are visible on some of the sherds. There is no decoration on any of the sherds, and there are no rims in this group.

## SITE 13

Number of sherds deposited in Ceramic	
Repository -----	6
Number of sherds to be returned -----	3
Total -----	9

Three of the sherds in the Ceramic Repository group are tempered with a fine grit. One has a hardness of 2-2.5, and the other two have a hardness of 2.5. The texture is fine. The texture of the one fair-sized sherd in the collection (to be returned) is very fine. The tempering material for this sherd has not been determined, and it is probable that none was used. It is a portion of a small "child's" bowl. The rest of the sherds contain an aplastic material the Calcium Phosphate substance discussed by Mr. Matson. The exterior surface of these sherds show tiny holes caused by the weathering of the tempering material. Both the exterior and interior surfaces are smoothed, and again the exterior received the most attention. None of the sherds are decorated. Sherd 68, referred to above, has a pronounced shoulder, a short contracting rim, and the lip is narrowed almost to a point. The pot was probably not more than 4 cm. high, yet it has a body thickness of 1 cm. The hardness of the sherds containing white aplastic is 2-2.5, except for one sherd which is 2.5.

## SITE 19

Number of sherds deposited in Ceramic	
Repository -----	5
Number of sherds to be returned -----	2
Total -----	7

The tempering material consists of very fine particles of grit and the white Calcium Phosphate. The texture is fine. The hardness of the sherds is 2.5. The exterior and interior surface colors are various shades of grayish tan. The paste is sometimes a light bluish gray, but most often it approaches the color of the surface. Both the exterior and interior surfaces are smoothed, with the exterior showing the most careful treatment.

## SITE 17

Number of sherds deposited in Ceramic	
Repository -----	17
Number of sherds to be returned -----	10
Total -----	27

The sherds from this site can be considered two different types. The first group is grit-tempered, and contains 14 sherds. Of these, seven have a hardness of 2-2.5; five have a hardness of 2.5; one is 3, and one is 3.5. The surface finish is smoothed, and the texture is predominantly medium fine, although four of the sherds have a fine texture. Three have straight rim sections. Two of the lips are rounded, while the third is flattened. The color is grayish black, or grayish tan, and is distinctly darker than the second group.

The other group of sherds frequently has as its aplastic the tempering material discussed by Mr. Matson, but two of the sherds have what I believe is crushed shell. Two of the group have a hardness of 2., one has a hardness of 2.5, while the rest are 2-2.5. This group, then, is softer than the first. All these sherds have a fine texture. The surface finish is smoothed, and the predominating colors are tan and brownish tan.

The two groups are quite distinct as far as can be ascertained from the material at hand.

## SITE 1

Number of sherds deposited in Ceramic	
Repository -----	24
Number of sherds to be returned -----	15
Total -----	39

As may be seen by examining the chart, the tempering material at this site is largely a Calcium Phosphate material. Nine sherds are grit-tempered. About half the sherds have a hardness of 2-2.5; two have a hardness of 3; one is 3.5, and the remainder are 2.5. The surface color ranges from a light red through light tan and browns, to dark grays and



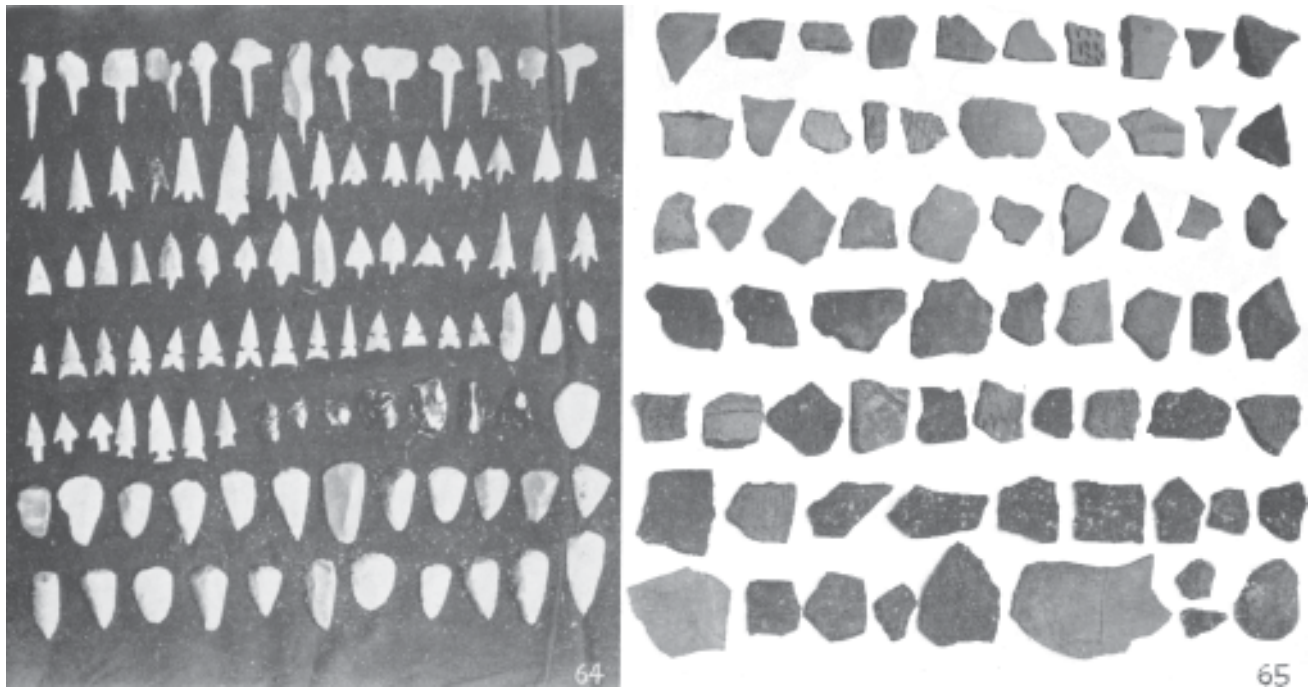


PLATE 8.

64. The top row of this panel is of (P. flake drills). The second row is of (P. arrow A.) The fourth from the left is of obsidian. The first four arrowheads on the third row from the top are of (P. arrow E.); the next 8 arrowheads to the right are of (P. arrow C.); the last 4 points on that row are (P. arrow B.) The first 14 arrowheads from the left, on the fourth row from the top, are of (P. arrow D.); the three objects remaining on that row are two flint saws and an olivella shell bead. The first 3 points in the 5th row are of a type from site 17. The next 4 are small expanded based points; the next seven objects are obsidian flakes. The right end object and the two bottom rows are of the scraper-graver type of scraper found in site 17 (P. scraper C.)

65. The two top rows of this panel show potsherds from site 1. The third row from the top shows potsherds from site 16. The fourth row from the top shows potsherds from site 17. The fifth row from the top shows potsherds from site 18. The sixth row from the top shows potsherds from site 5. The first sherd on bottom row is from site 9; the next four from site 10; the next sherd from site 11; the next two sherds are Pueblo Rio Grande ware from site 16; the one sherd on the right end of the bottom row is from site 13.

grayish blacks. The surface finish is predominantly smooth. Nine are smoothed, and five sherds have the exterior surface striated as if they had been brushed with a fine comb-like instrument. Four rim sherds are included in the group to be returned. These rims are straight and become narrower as the lip is approached. The lips are rounded. One sherd has two narrow, shallow, curvilinear lines on its exterior surface, but the fragment is too small to reveal the design.

## SITE 14

Number of sherds deposited in Ceramic	
Repository -----	19
Number of sherds to be returned -----	6
Total -----	25

Twenty-four per cent of the sherds have the Calcium Phosphate tempering material and the remainder contain fine particles of grit. The first

three sherds listed on the chart possess Calcium Phosphate tempering and can be scratched with gypsum, thus indicating a hardness of 2. Nine sherds are 2-2.5, five are 3, and two have a hardness of 4. Seventy-two per cent of the sherds have a smooth finish, 16 per cent have a rough finish, and on 12 per cent the surface is striated. The texture of the grit-tempered sherds is medium fine, while the remainder of the sherds have a fine texture. The predominant color is tan. One rim sherd is present in the group to be returned. Its dimensions are 1.6 cm. (length), 1.1 cm. (height), and .5 cm. (thickness). The lip is rounded and slopes outward.

#### SITE 18

Number of sherds to be returned ----- 16

This is the only site that furnishes pottery containing cultural determinates beyond the bare pottery skeleton of paste, temper, and surface finish. The tempering material is predominantly grit, the texture is 75 per cent medium fine, with the remainder of the sherds having a fine texture. This site furnishes the highest degree of hardness in sherds in the collection, as shown on the accompanying chart. Almost a third of the sherds have a hardness of 4. The surface finish is striated or roughened, as a rule, and the color is grayish brown and gray. The thickest sherds also come from this site, most of them being .5 to 1 cm. thick.

The sherds are so small that unfortunately no adequate idea of any designs can be obtained. The technique of decoration is incising. One sherd has two intersecting diagonal lines, .25 cm. wide and medium deep, which were apparently made with a rounded point. Another sherd has three shallow, incised chevrons, .2 cm. wide. Sherd No. 13 has a series of small, slightly curvilinear incisions rather closely spaced, which may have been made with the finger nail. The other decorated sherds are listed and described in the chart for the site.

In addition to the collections from the foregoing sites, the following sherds, which are to be returned, were examined.

#### SITE 9

This sherd has the type of tempering material discussed by Mr. Matson. The texture is fine and the hardness 3. Both surfaces are smoothed. The interior is tan, the exterior tan to buff in color. The sherd is .25 to .5 cm. thick.

#### SITE 3

This sherd has grit temper, and the texture is medium fine. The hardness is 2-2.5. It has a smoke-discolored exterior and a black interior. The exterior surface is roughly smoothed, and the interior is smooth. There are a number of incised gouges on the exterior .8 cm. long and .3 cm. wide. They are rather deep. The thickness of the sherd is .7 cm.

#### SITE 8

The aplastic in this sherd consists of small white Calcium Phosphate particles. The texture is fine, and the hardness is 2-2.5. Both surfaces are smoothed, and are tannish in color. The paste is a bluish gray. The sherd is .6 cm. thick.

#### SITE 11

The tempering material is the same as in the preceding sherd, and the texture and hardness also correspond. The surface finish is smoothed on both the exterior and interior, particularly so on the former. The surface coloration is a slightly grayish tan, while the paste is grayish blue. The thickness is .35 cm.

#### SITE 10

The tempering material of these two sherds is grit; the texture is medium fine; and the hardness 2.5. The surface color appears to be brown, but both sherds are blackened from firing or cooking. They have a roughened exterior surface, one having narrow striations. The interiors are smoothed. Sherd No. 53 is 1.1 cm. thick, and No. 54 is .7 cm. thick.

It would be difficult to arrive at any accurate conclusions regarding cultural relationships on the basis of the pottery represented in this collection. The sherds are few and small, and there is little comparative material of a similar nature in the

Ceramic Repository. For that reason, only tentative relations between the sites represented can be suggested at this time. The sites from which there are more than one or two sherds may be separated into two groups. The first and largest of these is characterized by the presence of Calcium Phosphate tempering material, fine texture, smooth surface finish, and is relatively soft and thin compared to the other group.

The sites numbered 19, 17, 15 and 14 could be considered as belonging to the same general ceramic group.

The second group would consist of sites 5, and 18 with the latter containing the only series of decorated sherds. In this group, grit temper

predominates. It is hard for non-Pueblo pottery, has medium fine texture, and is darker in color than the first division. There are a number of sherds in the Repository from Wood County, Texas, sent in by Mr. A. T. Jackson, which illustrate the striated surface finish found on a few of the grit-tempered sherds.

—Museum of The University of Michigan,  
Arbor, Michigan.

1. See Occasional Contributions of the Museum of Anthropology, University of Michigan, No. 3, *Standards of Pottery Description*, by Benjamin March, for hardness tests.

## REPORT ON POTTERY SHERDS FROM NEAR ABILENE, TEXAS

Chart For Site 14

	Temper		Hardness					Surface Finish			Texture			Color						
														Exterior		Interior				
	Grit	Cal.	2	2-2.5	2.5	3	3.5	Smooth	Rough	Striated	Fine	Med. Fine	Med.	Brown	Tan	Black	Brown	Tan	Grey	Black
1.		x	x								x			x			x			
2.		x	x								x			x			x			
3.		x	x								x				x				x	
4.	x					x					x			x					x	
5.	x				x						x				x					x
6.	x				x						x				x				x	
7.	x				x						x				x				x	
8.	x				x						x				x				x	
9.	x				x						x				x				x	
10.	x				x						x				x				x	
11.	x				x						x				x				x	
12.		x				x					x				x				x	
13.		x				x					x				x				x	
14.	x					x					x				x				x	
15.	x				x						x					x				x
16.	x							x			x					x				x
17.	x							x			x					x				x
18.	x							x			x					x				x
19.	x								4		x					x				x
47.		x?				x					x				Blue				x	
42.	x							x			x					x			x	*
44.	x								4		x				x				x	
45.	x							x			x				x		x			
43.	x							x			x				x				x	
46.	x					x					x				x					x
25	19	6	3	9	5	2	4	2	18	4	3	7	18	3	15	6	3	13	7	2

\*Rounded, outward sloping lip.

Sherds 11, 13, 14, and 43 have a greyish tan exterior.

REPORT ON POTTERY SHERDS FROM NEAR ABILENE, TEXAS

Chart For Site 1

Ceramic Repository	Temper		Hardness				Surface Finish			Color							
	Grit	Cal.Phos.	2-2.5	2.5	3	3.5	Smooth	Smoothed	Striated	Exterior		Interior					
										Red	Brown	Grey	Dark Grey	Brown	Grey	Black	Red
1.	?			X			X			X				X			
2.		X	X				X			X				X			
3.	?			X			X			X				X			
4.		X	X				X			X				X			
5.		X	X				X			X					X		
6.		X	X	X				X						X			
7.		X	X				X				X			X			
8.		X	X				X				X			X			
9.		X	X				X			X				X			
10.		X	X	X			X				X			X			
11.		X	X				X				X			X			
12.		X	X				X				X			X			
13.		X	X				X				X			X			
14.		X	X	X			X				X			X			
15.		X				X	X				X			X			
16.	X		X	X			X				X				X		
17.		X	X					X			X			X			
18.		X	X	X			X				X			X			
19.		X	X		X		X				X			X			
20.		X	X	X			X				X			X			
21.	X		X					X			X			X			
22.	X		X						X		X			X			
23.	X		X	X			X				X			X			
24.	X		X	X				X			X			X			
36.		?			X		X			X				X			
41.		X	X				X			X				X			
39.		X	X				X			X					X		
37.		X	X				X			X				X			
30.		X	X				X							X			
38.		X	X				X				X			X			
35.		X	X					X			X			X			
34.		X	X	X				X			X			X			
33.		X	X	X			X				X			X			
40.		X	X	X			X				X			X			
27.		X	X	X				X			X			X			
31.	X		X						X		X			X			
32.	X		X						X		X			X			
28.	X		X	X					X		X			X			
29.	X		X	X				X			X			X	*		
39.	9	27	19	17	2	1	25	9	5	10	17	10	1	20	13	3	3

\*Groups of two shallow, narrow, curvilinear incised lines.

REPORT ON POTTERY SHERDS FROM NEAR ABILENE, TEXAS

Chart For Site 17

	Temper		Hardness				Surface Finish S.	Texture			Color					
	Grit	C. Ph.	2-2.5	2.5	3	3.5		Fine	Med. Fine	Medium	Exterior		Interior			
											Tan	Brown	Black	Tan	Brown	Black
1.		x		x			x	x		x		x				
2.		x	x				x	x		x		x				
3.		x	x				x	x		x		x				
4.		x	x				x	x		x		x				
5.		x	x				x	x		x		x				
6.		x	x				x	x		x		x				
7.		x	x				x	x		x		x				
8.	x		x				x	x		x		x				
9.	x			x			x	x			x					
10.	x		x				x	x		G.x		G.x				
11.	x			x			x	x		x		x				
12.	x		x				x	x		G.x		G.x				
13.		Shell	x				x	x		x		x				
14.	x		x				x	x			x	x				
15.	x			x			x	x		x		x				
16.	x				x		x	x		x	x					
17.	x		x				x	x		x		x				
8.		Shell	2				x	x		x		x				
5.	x			x			x	x		x		x				
7.		x	x				x	x		x		x				
2.		x	2				x	x		x		x				
9.		x	x				x	x		x		x				
6.	x		x				x	x		x		x				
10.	x					x	x	x			x	x*				
4.	x		x				x	x		x		x				
3.	x			x			x	x		x	x	**				
1.	x		x				x	x		x	x	***				
27.	14	13	2	17	6	1	1	27	16	11	17	2	8	18	3	6

\*Rounded lip-rim narrowed at lip-apparently straight rim.

\*\*Rounded lip-rim narrowed at lip-apparently straight rim.

\*\*\*Flat lip-apparently a straight rim

## REPORT ON POTTERY SHERDS FROM NEAR ABILENE, TEXAS

## Chart For Site 18

Temper	Hardness					Surface Finish			Texture			Color						Thickness		
	Grit	Cal.	2	2-2.5	2.5	3	4	Smooth	Striated	Rough	Fine	Medium	Fine	Grey	Black	Tan	Grey		Black	Tan
11.	x?			x				x					x	x			x			1.
12.	x?		x							x			x		x		x			.85
13.	x					x				x			x	x				x		.8
14.	?					x			x				x	x			x			.85
15.	x						x			x			x	x			x			.95
16.	?									x			x	x			x			.65
17.	?		x					x					x	x			x			1.
18.	?		x						x				x		x				x	.9
19.	x?						x			x			x		x			x		.55
20.	x?									x			x	x			x			.7
21.	x?		x					x					x		x		x			1.3
22.	x?		x							x			x	x				x		.8
23.	x?						x		x				x		x			x		.65
24.	x							x					x				x			.5
25.	x	x						x					x		x				x	.4
26.	x?			x				x					x					x		1.
16		1	5	2	3	5	6	3	7	4	12	10	3	3	9	5	2			

## Decoration

Sherd No. 11. Two intersecting, diagonal, incised lines .25 cm. wide, medium deep.

Sherd No. 12. Shallow, chevron, incised .2 cm. wide.

Sherd No. 13. Finger nail gashes? in some order.

Sherd No. 14. Fine, narrow, parallel striations, punch marks.

Sherd No. 15. Lip .4 cm., rim curves inside to lip. Diagonal .2 cm. shallow lines.

Sherd No. 16. Finger nail impressions?

Sherd No. 17. This piece related to No. 11.

Sherd No. 19. Finger nail impressions?

Sherd No. 20. Finger nail impressions?

## IDENTIFICATION OF APLASTIC PRESENT IN POTTERY SHERDS FROM TEXAS

BY FREDERICK R. MATSON

The white tempering material appearing in the sherds is not limestone. Qualitative chemical tests show that it contains Calcium and the Phosphate radical, indicating that it is a Calcium Phosphate.

The optical properties of the aplastic closely resemble those of the mineral Collophanite ( $3\text{Ca}_3(\text{PO}_4)_2 \cdot n\text{Ca}(\text{CO}_3) \cdot x\text{H}_2\text{O}$ ) which is an amorphous material. Collophanite is usually found in beds of coral limestones which have been covered by beds of guano. The action of the ground waters has carried Phosphates from the guano beds down into the limestones. Collophanite may often show the organic structure of bones, mollusks, brachiopods, corals, etc.

Collophanite occurs in sedimentary phosphatic limestones, in phosphorites or so-called phosphate rocks as the chief constituent, and in phosphate nodules. It is the dominant material in fossil bone, in which the microstructure of the original bone is usually preserved. Such microstructure was noted on a few fragments of the aplastic.

Amorphous deposits of "bone phosphate" are known to occur in North Carolina, Alabama, Florida, Tennessee, and in the western states of Idaho, Utah, and Wyoming.

Because of the optical properties of the tempering material, I believe it is composed of amorphous "bone phosphate," coming perhaps from fossil bone deposits, or from beds of phosphatic limestones that may have been available

to the Indians of Texas. The clay used contains quite a little Calcite, which would indicate that there were sedimentary calcareous deposits in the region in which this pottery was made. Some of the aplastic may quite possibly be predominantly Calcite instead of Calcium Phosphate, as indicated by effervescence upon the addition of Hydrochloric acid.

I do not believe that bone was purposely calcined and then added to the clay as an aplastic, for two reasons:

1. The optical properties of bone are somewhat different from those of the aplastic, which more closely resembles Collophanite.

2. When bone is heated in a crucible by means of a Meeker burner, it turns black due to the presence of carbon, and remains black or gray even when fired to a red heat for some time. As the carbon gradually burns out, the bone turns gray, and eventually white.

The aplastic is uniformly white in color. The temperature at which the Indians fired their wares probably never exceeded 500 degrees Centigrade. The ware, it seems likely, was not heated at a high enough temperature for a sufficient period of time to drive out all the carbon from fresh or fairly modern bone. If bone had been used, one might expect to find some of the aplastic gray in color, if not black.

—Museum of the University of Michigan,  
Ann Arbor, Michigan.



## THE POTTERY COMPLEX ARTIFACTS OF THE ABILENE REGION

BY CYRUS N. RAY

Pottery is not abundant in the Abilene region, and it has only been found thus far in relatively few sites. The writer's collection contains sherds from all but three, of the twenty pottery sites listed, and in two of the latter sites only one sherd was found in each by an associate while both were examining the sites. Several other pottery sites have been reported but in the absence of personal examination they will not be listed.

There is no doubt that many more sites containing pottery exist than have yet been found because of the fact that most of the local pottery sherds are of nearly a soil color, and are very small in size. It therefore takes both sharp vision and trained eyes to see them even where sherds are known to exist. Only one known instance of the finding of a complete pot occurred sixty miles northwest of Abilene where a small pottery cup was found in Site No. 12. Most of the sherds found are only from one to two inches in diameter.

Samples of all the local forms of pottery were sent to the Ceramic Repository at Ann Arbor, Michigan, and were studied there by authorities on pottery; James B. Griffin, Fellow in Aboriginal North American Ceramics, in The Museum of Anthropology, of The University of Michigan, and by Frederick R. Matson, Ceramic Engineer, of the same place. Two sherds, which had an appearance different from any others found here, and which resembled pueblo pottery, were sent to Dr. H. P. Mera, Staff Archeologist of The Laboratory of Anthropology, Santa Fe, New Mexico. All three of these scientists have completed reports, which will be printed with this article. The pottery sites will be numbered separately for this report and the same site numbers will also be used in the scientists' reports on the sherds.

### *Pottery Types of Scrapers*

With a few notable exceptions, the artifacts described below belong to types of flint tools which

occur so regularly in pottery sites that they may correctly be termed pottery culture artifacts. While some of these, such as pear shaped flint scrapers, do occur in many sites where pottery has not yet been found, they always occur in pottery sites. Some of the tools are so distinctive that the writer always begins to search for pottery when one of them is found. The large, pear shaped, keel backed scraper type found in pottery sites is usually made of bluish-gray flint but sometimes of black, and of pink flint. A larger proportion of pottery artifacts than usual is unpatinated. This scraper is either flat or slightly curved on the bottom and chipped to a rounded or keel backed shape on the back. The cutting end is usually larger, rounded, and retouched to a sharp edge. Typical pottery site scrapers usually vary between 2 1-2 and 3 inches in length, and 1 1-2 to 1 3-4 inches in width, although some are larger and some smaller. (P. scraper A.). The only pottery site where the large form of this does not predominate is Site No. 17, where another form was used. What probably is a variant of this type is not so common and it usually is broader, more rounded, and either chipped down on the back to make it nearly flat or it usually has been made so by taking two longitudinal flakes out of the center of the back to make two channels where the convexity has been. Occasionally only one channel was removed from the center, giving a Folsom appearance. (P. scraper B.). In Site No. 17 a distinctive form of very small, finely flaked, narrow, keel backed scraper occurs. Many of these have the ends opposite to the rounded cutting ends brought to sharp points, so that such a tool could be used as a scraper on one end, and as a graver on the other. This scraper will be known hereafter as (P. scraper C.).

### *Pottery Types of Arrow Heads*

The type of arrow head which occurs most frequently in all pottery sites except site 17 is from 1 1-2 inches long and 3-4 inch or less wide at the barbs, to slightly over two inches long and 13-16

inch broad at the barbs. It is shaped like a spruce tree in outline and usually has many minute serrations along both edges; it is finely pointed, sharply barbed, the tang long, slender, and brought to a sharp point. This arrow head is thin, delicate, beautifully and minutely chipped all over one face, and the other face is flat except for a minute retouch on the edges. In this article this arrow will hereafter be referred to as (P. arrow A.).

A variant of this of about the same size, but thicker and chipped on both faces, and usually not serrated will be listed as (P. arrow B.).

A third variant form of this was made by taking a flake which was flat on one face and having a convex ridge down the center on the other and chipping a sharp point at one end, a sharp pointed tang at the other, one or two sharp barbs, and leaving the balance unfinished. This type (P. arrow C.) is mainly found in two sites, which contain only a certain type of pottery. This last type of arrow is usually patinated while the others usually are not. Whether it represents work of a careless workman or an evolutionary prototype of the more finished types has not been determined.

Another pottery type arrow head is small, thin, usually minutely chipped on both faces, but sometimes flat on one face, it has an elongated triangular shape, and is usually slightly recessed at the base. This arrow head has three notches in it, one notch in each edge near the base, and another notch at the end in the middle of the base. This type is found to some extent in pottery sites but usually not so abundantly as other types. This form will be known as (P. arrow D.).

There are also variant forms of this, which, are usually plain unnotched elongated triangles, with either recessed or square bases. Some are minutely serrated and occasionally one has one notch in the center of the base. (P. arrow E.).

The finely pressure flaked, bevelled artifact, is distinctly a pottery culture type wherever found in the region. In Site 17 there occur quite frequently points which are rather large for arrow heads and which probably were used as dart heads. These

points are stemmed and barbed and the blades are thick and deeply bevelled so that they rotated in flight. These arrows are usually about 2 1-4 inches long and 7-8 inch broad. (P. arrow F.).

A number of other types of projectile points have been found in pottery sites, of the larger forms suitable for dart or atlatl heads, these include stemmed and barbed and shouldered forms as well as channeled points. Whether any of these forms date with the pottery or represent previous occupation of some of the sites which have eroded out and become mixed with more recent deposits it is sometimes difficult to determine. However one sometimes finds the unpatinated scrapers and other debris of a pottery site superimposed on only a portion of an older, larger, partially buried site, which otherwise contains no pottery artifacts. In such cases the heavily patinated flints of the older culture are easily separated by shape, patination, size, workmanship, and depth, from the pottery artifacts.

#### *Solutrean and Four Edged Knives*

The most common form of pottery knife probably is the leaf shaped or Solutrean double pointed knife. These are usually finely chipped on both faces down to sharp points at both ends. (P. knife A.). Occasionally however one of this shape is entirely flat on one face, and beautifully chipped all over the other, like the Mousterian knives, of European Paleolithic sites. (P. knife B.). The knife found second in numbers to the leaf or Solutrean blade is the bevelled four edged knife. "The bevelled knives are larger at one end, and are bevelled from the place of maximum width, which is from a fourth to a third of the distance from one end, in each direction on each side to the points at the ends. This bevelling in opposite directions produces four different cutting edges on each knife." (Note 1). Hereafter in this article it will be listed as (P. knife C.). These double pointed knives are usually from 4 1-4 to five inches in length and from 7-8 of an inch to 1 3-4 inches wide, but a few are larger and smaller.

*Is The Four Edged Knife of Caddoan Origin*

In the East Texas historic Caddo region A. T. Jackson found the four edged bevelled knife in a grave containing pottery, flints, and glass beads. Jackson states: "In this historic grave also were some flint knives, arrow points, etc. One flint knife five and three-fourths inches long, was of the bevelled, double pointed or four edged type, very similar to knives found associated with potsherds in certain sites in Central and West Texas." (Note 2).

In answer to a letter concerning the above quotation Mr. Jackson wrote as follows: "It was in a grave which gave every indication of having been

Asinai—which, as you know, is closely related to the Caddo. No, we do not find a great many four-edged knives in Caddoan graves. When they are so found, they seem to be more recent. I do not recall a single find of the bevelled knife in a prehistoric Caddo grave. Hence I think you are right in your conclusion that they are not very old. But I am inclined to think that their center of distribution is outside of East Texas; although their makers undoubtedly had contact with East Texas tribes. That might account for the presence of pottery in West Texas and bevelled knives in East Texas."

Dr. W. C. Holden found four edged knives abundant and also many pottery sherds in the

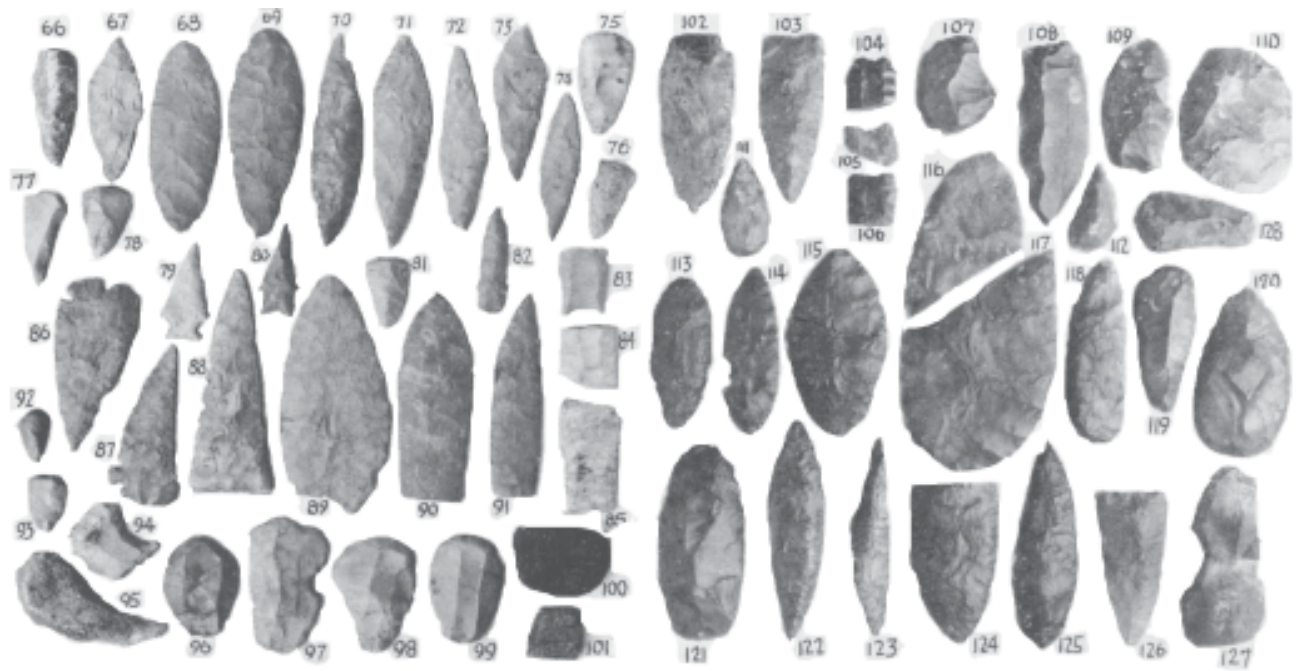


PLATE 9.

In plate 9, numbers 67, 68, 69, 89, 90, 113, 114, 116, 116 and 117 represent (P. knife A.) or the Solutrean type knife. Nos. 70, 71, 72, 73, 74, 122, 123, 126 represent (P. knife C.) or the four edged knife. Only half of No. 126 was found. Nos. 124, and 126, represent (P. knife B.) or the Mousterian type. Only half of No. 124 was found. Nos. 94, 95 and 127 show three spokeshaves. Nos. 107, 119, 120, 121 and 128 are of (P. scraper A.) type. Nos. 96, 97, 98 and 99 are of (P. scraper B.) type. Nos. 66, 75, 76, 77, 78, 81, 92, 93, 111 and 112 are of (P. scraper C.) type from site 17. Nos. 108, 109, and 110 are (P. flake knives). No. 118, is a two edged bevelled knife. Nos. 88, 91, 102 and 103 are of (P. spear A.) or they may be square based knives. Nos. 86, and 87 are eccentric tanged knives (P. knife D.). Nos. 83, 84, 85, 104, 105 and 106 are Folsom type points, found in and near site 17. Nos. 79, 80 and 82 are (P. arrow F.) bevelled dart points from site 17. Nos. 100 and 101 are sandstone arrow shaft straighteners. In the left hand panel. No. 88 is 5 3-16 inches long, and 1 15-16 inches across at the base. In the right panel. No. 122 is 6 1-4 inches long, and 1 5-16 inches in breadth.

Panhandle Slab House Culture excavations which he made. He wrote that "The Panhandle Indians made many double bevelled knives with four edges, shaped something like an airplane propeller. These knives varied in length from three to five inches." (Note 3). Floyd V. Studer wrote concerning artifacts of the same region. "The types occurring most frequently were the well bevelled four edged knives. It appears to be a Texas Panhandle culture type." (Note 4). In a book on the Arkansas River Region Warren K. Moorehead illustrated five four edged knives from Kansas. (Note 5). He stated that "Students will note that the "four edged" knives are more common in the Great Plains and Texas Panhandle than in the Pueblo Country. These knives are very interesting and their distribution should be ascertained. Seldom do they occur south of Central and Southern Oklahoma and the type is not found to the south and east, but rather extends through the buffalo country."

The writer thinks that Dr. Moorehead is mistaken as to the distribution southward and eastward of this type of knife. It is found rather frequently around and south of Abilene to a distance of 160 miles or more south of the Oklahoma-Texas boundary. A knife of this type in the writer's collection was found 120 miles east of Abilene in Palo Pinto County. Anderson County, where Jackson found the four edged knife with historic materials, is 250 miles in a straight line, slightly south of east of Abilene, in the East Texas region.

In correspondence with Adolph H. Witte, who collects on the Wichita and Red River drainage area near to if not on the location of the historic Wichita Tribe sites of Spanish Colonial days, he stated that he found four edged knives and pottery sherds in sites in that region.

When he described the artifacts of ruined Pecos Pueblo, which is on the eastern border of the Pueblo area, A. V. Kidder showed pictures of four edged knives which are good depictions of the Abilene types, especially fig. 16, b. (Note 6). But it was stated that these were not typical knives of Pecos.

W. D. Strong found typical four edged bevelled knives in Nebraska in his Signal Butte site, in the

top level (111.). It also appears that the arrow heads and most of the other flint criteria of that level are very similar to the Texas pottery makers flint work. Nebraska may have obtained the bevelled four edged knives through Southern influences brought in by her tribes of Caddoan stock.<sup>7</sup>

It is evident from Jackson's observation that the four edged knives were either made by the Asinai, a Caddoan tribe, in historic times, or by some contemporary tribe with whom the Asinai traded. We also see that the four edged bevelled knives are found in a vast area of Nebraska, Kansas, Oklahoma and Texas which in the past has been occupied by Caddoan tribes.

Most of the pottery and the pottery complex flint criteria of the Abilene region are either found on the soil surface, or in plowed fields in soils most suitable for raising crops. This complex also includes the mano and metate. Fewer of the artifacts of this flint complex are patinated than those of any other flint culture of the region.

Thus far no local evidence has shown any historic connection with the pottery flint complex. The evidence would indicate however that these flints represent the last occupation of the region by flint workers, and the unpatinated part may not be more than a few hundreds of years old.

The Wichita tribe was found cultivating crops in this region during the early Spanish occupation of Texas, and it seems to be a reasonable supposition that the Wichita Indians may have been responsible for the pottery complex of the Abilene region.

The few four edged knives Kidder found in Pecos Pueblo can be explained by trade. If obsidian and Pueblo pottery and sea shell were traded into the Abilene section (described farther on) from and across the Pueblo region, then eastern forms of flints probably were carried westward also.

#### *Eccentric Tanged Knives*

There is a fourth form of knife sometimes found in pottery sites in the Abilene region which is distinct from any of the usual flint knives. These knives are usually about 4 inches long and 1 7-8 inches broad

and are either rounded or square based, and chipped finely on both faces, sharp edged, and sharp pointed. Near the base on one edge a tang has been cut into the edge in an offset manner, A good example of this type of knife, from San Saba County, Texas, is shown in the Annual Report of the Smithsonian Institution U. S. National Museum 1897. (Note 8). It will be listed as (P. knife D.).

#### *Pottery Fluke Knives*

In some pottery sites many long, thin flakes, which at first glance might be thought to be refuse flakes in making artifacts, are found on close inspection to have been sharpened with a minute retouch along the edges. The other parts are left with the several original longitudinal flaked surfaces not altered in any manner. (P. Flake knife).

#### *Pottery Flake Saws*

Small flint flakes with a thin rounded edge have been minutely serrated along the thin edges for use as saws. A few are in disk form.

#### *Pottery Type Spear Heads*

Long flint spear heads or knives nicely chipped on both edges down to sharp points and having square bases with no notches, barbs or tangs occur. (P. spear A.). More patinated blades occur in this type than in the other. There is also another spear head of this shape and type except that it has a slightly recessed base. (P, spear B.). Spear heads of both types are from 4 to 5 inches in length and 1 1-4 to 2 inches in width.

#### *Manos and Metates*

While manos and metates are widely distributed in the Abilene region among cultures not containing keel backed scrapers or any other pottery criteria, all of the pottery sites contain manos and metates as part of their culture complex. The typical manos are of long oval shape, pecked into symmetrical form, and usually worn smooth on both top and bottom. The metates are wide, shallow sandstone slabs, which have been pecked into shape, and

usually have been used on only one side, but sometimes on both. The pottery sites are situated on sandy loam soils which would have been the most suitable for corn or other crop growing. However these soils are also usually covered, before being cleared, with a thick growth of oak trees or brush. In this connection, a Texas pioneer stated to the writer that when he helped a party of early settlers drive the last Indians out of this section, that the Indians always carried a sack of meal made of ground acorns on their horses when on raids, and to lighten the load always threw it off when hotly pursued.

#### *Flint Drills or Awls*

Many different culture types of flint awls or drills are found in the Abilene region, from crude percussion flaked types, to finely chipped drills. The pottery type is distinctive in that the points are small, slender, sharp, and beautifully chipped, the bases are irregularly shaped, thin, sharp flakes, with neither secondary chipping nor attempts to shape them to any definite form. For this reason it is evident that the bases were embedded in handles of some kind which made it unnecessary to finish off the edges. This type of drill is found in all pottery sites. (P. drill A.).

#### *Obsidian in Pottery Sites*

Thirteen pieces of obsidian have been found by the writer in five sites near Abilene, and all of these sites contain pottery. No obsidian has yet been found by the writer on the Clear Fork of the Brazos River although pottery sherds have been found in several sites. It appears that pottery sherds are found much more frequently in the southern portion of Taylor County, which is drained by branches of the Colorado River than in the northern portion which is drained by branches of the Clear Fork of the Brazos. In between lie the mountains of the Callahan Divide, a remnant of the Edwards Plateau. These are penetrated by valleys on each side, which contain springs, in which many of the streams of the region head. In some places the heads of branches of the Colorado River, flowing southeast, lie not more than six or eight miles from the heads

of branches of the Clear Fork of the Brazos, which flow northeast.

Before this section was settled the old Butterfield Stage Trail followed a branch of the Brazos up Mulberry Canyon and over the Plateau to a tributary of the Colorado on the south side and there passed near the high conical Church Peak which may be seen as a landmark for many miles in each direction. There is evidence that the prehistoric Indians probably traversed the same route, for there are three pottery sites on Mulberry Creek and one site, No. 15, contained the two Pueblo sherds which Dr. Mera reported on, However no obsidian has been found on Mulberry Creek.

#### *Pottery Users Worked Flint Mines*

On the top of the Plateau in the same region near the little hamlet of Dora, on the headwaters of Elm Creek, which is another tributary of the Brazos, lie extensive prehistoric flint mines. Both E. B. Sayles and the writer heard of these for several years and knew the general area in which they were situated but our informants always avoided giving the true location thinking them to be Spanish metal mines until W. A. Riney conducted Mr. Sayles to the site. (Note 9). Apparently the Indians came up all of the near branches of the Brazos and the Colorado Rivers to work these mines. The Elm Creek rises near the mines and flows for about twenty miles east between the mountains, where it turns north across the plains at Buffalo Gap and at a distance of about thirty miles northeast of where it leaves the mountains it joins the Clear Fork of the Brazos. Along its course nine pottery sites have been found and three of these sites contained either obsidian flakes or obsidian artifacts. In Site No. 5 an arrow point of obsidian was found (P. arrow A.) and two flakes of obsidian. In Site No. 6 located north of the mountains a small kidney shaped obsidian knife of a type not typical of this region was found. In Site No. 8 situated near the mouth of Elm Creek another obsidian flake was found by the writer.

Site No. 1 is situated on a small branch of the Colorado River several miles south of the Dora flint

mines, and in this site, besides the usual pottery flint criteria the writer found seven obsidian flakes, and a sea shell.

The owner of the land has also found several smaller sea shell beads in Site 1.

A number of miles south of Site 1 Dr. Otto O. Watts found an obsidian flake on top of Church Mountain.

Apparently the route up branches of the Colorado to the Dora flint mines, and then down Elm Creek to the Clear Fork of the Brazos, was the preferred trade route through the region to the southwestern sources of obsidian, and sea shell beads. Doubtless a considerable commerce in Taylor County flint was carried on to regions not possessing this easily worked true flint. However, it seems like carrying coals to Newcastle to transport obsidian over such long distances to the vicinity of these extensive mines of high quality flint. Doubtless prehistoric man also thought that other pastures were always greener, or it is possible that its color pleased him and it may have been of ceremonial use.

#### *Obsidian from New Mexico*

A piece of obsidian from pottery site 1 was sent to Dr. H. P. Mera, Staff Archeologist, of The Laboratory of Anthropology, of Santa Fe, New Mexico, for identification and with a request that he name the probable source of the flake. He reported as follows:

“I am returning herewith the specimen sent for identification which proves to be obsidian. There has also been included an example of our local type to illustrate the great similarity and which has been marked with a patch of white in order to distinguish it from the one you sent. The Abilene specimen appears to have been derived from the Jemez Mountains area.”

The sample of New Mexico obsidian sent by Dr. Mera apparently is indistinguishable from the thirteen pieces of obsidian found by the writer in sites of the Abilene region.

*Red Paint Mines Attract Pottery Users*

Doubtless another source of prehistoric commerce which brought pottery into the Abilene region was the trade in red paint from the prehistoric red oxide of iron (rouge) mines in the southeast end of Taylor County. Here we found two pottery sites on branches of the Colorado River leading to these mines. (Note 10). However no obsidian has been found in either of these sites, Nos. 17 and 18. All of the sites containing obsidian in this region except one lie along the prehistoric trade route across the Edwards Plateau to the southwest.

*Frequency of Different Types of Artifacts in Sites*

The numbers of sherds, and the relative frequency of the different types of artifacts found with pottery, will be listed by sites in the text following.

*Site One*

In this site there were 415 scrapers, of which 367 were of (P. scraper A.) type, and 48 were of (P. scraper B.) type. Of the total number 207 had some original crust, and 208 were without crust. There were 40 completely or white patinated, 212 gray patinated, and 163 unpatinated scrapers. Of other artifacts there were, flake saws 2, flake knives 14, large thick stemmed and barbed dart points 8, small expanded based barbed and stemmed points 7, fist ax 1, flint disk 1, Chellean

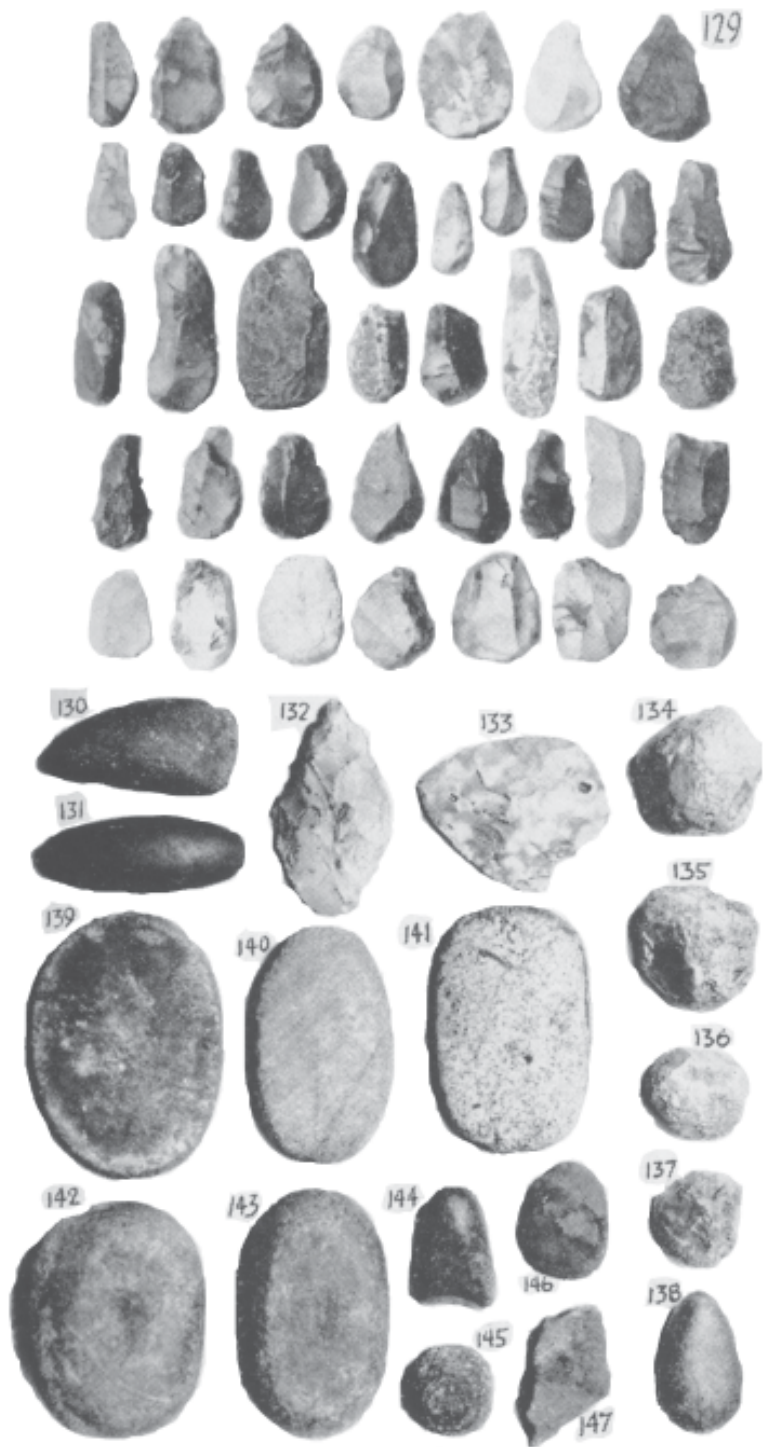


PLATE 10.

129. This panel shows 40 large pottery site scrapers. The top row and the right end of the bottom row show the channeled (P. scraper B.) The three center rows show (P. scraper A.) The middle row shows crusted scrapers of (P. scraper A.) type.

130 and 131 are polished celts; 132 is a flint ax; 133 a large knife of irregular shape; 134, 135, 136, and 137 battered flint ball hammerstones; 138 a water polished quartz hammerstone battered on the pointed end; 139, 140, 141 manos; 142 and 143 pitted hammerstones; 144 polished problematical stone; 145 ironstone ball; 146 yellow, and 147 red, paintstone. AU of the objects shown in this panel were found in site 17.

type axes 5, (P. arrow A.) 29, (P. arrow B.) 2, (P. arrow C.) 14, (P. arrow D.) 15, (P. arrow E.) 9, P. flake drills 15, obsidian flakes 7, potsherds 191, many bison bones and teeth, used rouge paintstone 1, and quartz crystals 3.

Artifacts had been collected from this site for many years by the farmer's son. Later E. B. Sayles collected from the site. Evidently scrapers had not been collected, but arrow heads, drills, knives and pottery had been, so that a tabulation of the broken ends of knives, spear and arrow heads which remained when the land owner directed the writer to the site some years later does not give a true estimate of their original frequency.

There were many broken ends and halves of large leaf shaped blades listed as (P. knife A.) numbering 86. Of these 46 were patinated, and 40 were unpatinated; of (P. knife B.) 2, of (P. knife C.) 21.

One piece of broken metate was found; the metate evidently was not very frequently used in this large site. Several oval white sea shell beads of a size a little larger than a navy bean were found by the land owner. One sea shell of a larger variety found by the writer was identified by Dr. H. P. Mera as "an unusually large olivella." Many river smoothed quartz or other hard hammerstones were found.

#### *Site Two*

Site 2 is located near the flint mines previously referred to. On a visit to the site, with the finder, E. B. Sayles, one piece of sherd which had a painted decoration was found by Sayles. Apparently it was of Pueblo origin. The soil surface was covered, and the soil was full to some depth, of flint flakes where a vast number of artifacts had been made, during a long period of time. However, there was a dearth of formed artifacts on the unbroken sod surface.

#### *Site Three*

Here only two sherds were found, and the flints had been collected by the land owner's boys and were not available for study.

#### *Site Four*

Here also the pottery and flints had been collected by boys. The pottery was similar in appearance to that of Site 19. Many sherds were found.

#### *Site Five*

A rather complete collection of pottery artifacts is available for study from this site. It contains the following: (P. scraper A.) with crust 66, (P. scraper A.) without crust 84, (P. scraper B.) 18, (P. scraper C.) 5, (P. arrow A.) 16, (P. arrow B.) 10, (P. arrow C.) 10, (P. arrow D.) 2, (P. arrow E.) 2, (P. knife A.) 49, (P. knife B.) 2, (P. knife C.) 15, (P. knife D.) 1, (P. spear A.) 1, (P. spear B.) 1, P. flake drills 12, combination knife-drills 1, obsidian 2 flakes, and one obsidian arrow of (P. arrow A.) type, manos and metates, flint ball hammerstones, water smoothed hammerstones, unworked sandstone balls, sherds 17, (P. flake saw) with minute serrations 1, P. flake knives 40. One large spokeshave suitable for use in bow or spear shaft trimming was found. One double pointed flake drill which might have been used as a fish hook, one finely finished graver, one Folsom type dart head base, many buffalo bones and teeth, and some very thick mussel shells of a type not seen by the writer native in this region.

#### *Site Six*

This site has little flint in it. Its pottery is of the plain, thin, brown, fossil bone tempered type, described by Dr. Griffin. Eight sherds were found, (P. scraper A.) 1, (P. knife C.) 1. In a site a short distance across the creek, a small nicely flaked obsidian knife, and many "Sand Dune" artifacts were found. (See Vol. 1, 1929, Society's Bulletin).

#### *Site Seven*

Pottery sherds reported by Sayles last year on Elm Creek; type not stated.



*Site Eight*

Only one sherd was found where treasure hunters dug it out of a burial a number of years ago. The land owner reported that shell beads, flint arrow heads, and a pot, were found with the bones.

In the camp site on the side of the hill below, the writer found one flake of obsidian, manos and metates, and (P. knife A.) and (P. knife C.).

*Site Nine*

Four sherds were found in this site, no scrapers were found, abundant manos and metates, hammerstones, and (P. arrow D.). This site also contains the "Sand Dune" complex, described in Bulletin One, of long keen barbed and deeply serrated sharp, thin, slender points, and a different type of drill having a nicely finished paddle shaped base. One small thin disk saw was found.

*Site Ten*

This site contained (P. scraper A.) with crust 24, without crust 30. Only 12 of the 54 scrapers are unpatinated. P. flake knives 14, and of the latter only two are patinated. (P. knife A.) 8, of the latter only one was not patinated. (P. arrow A.) 7, (P. arrow C.) 5, (P. arrow E.) 2, were found. P. flake drills 7, manos and metates, and flint ball hammerstones occur frequently. There were 11 potsherds.

*Site Eleven*

Mr. R. L. Risley found many sherds in ashes and charcoal in a hearth buried several feet deep on the bank of a small creek. The flint artifact forms are not known. Only two sherds obtained.

*Site Twelve*

One sherd was found by J. Alden Mason when in Abilene in 1929. Type thick and plain brown. The type of associated flints was not definitely determined.

*Site Thirteen*

This site is situated on one of the main tributaries of the Brazos, known as the Salt Fork of the Brazos, at a place 60 miles northwest of Abilene. Here pottery sherds having what appear to be tree twigs dimly incised on them are occasionally found. Fourteen plain sherds were obtained. Both the flat Abilene type of metate and the deeply troughed out typical Panhandle Culture metate pictured by Studer occur here. (Note 11). The typical arrow heads of the site (P. arrow D.) are also of the same shape as the Panhandle notched arrow heads depicted by Studer in the plate referred to in Note 11, plate 11, No. 3. Bone sounding rasps exactly like those found by Kidder at Pecos Pueblo were found. (Note 12). Holden found similar sounding rasps of wood still in use by the Yaquis. (Note 13). An obsidian flake was found near this site. One grooved sandstone arrow shaft polisher was found.

*Site Fourteen*

In this site a total of 50 (P. scraper A.) were found. Of these 22 were crusted and 28 not crusted, gray patinated 13, not patinated 37, (P. arrow A.) 8, (P. arrow D.) 7, (P. arrow E.) 5. There were seven small expanded based barbed arrow heads, paddle based drills 2, bone beads 3, manos and metates, hammerstones, buffalo bones and teeth. There were 99 sherds. One small pottery cylinder had several incised decorations running lengthwise.

*Site Fifteen*

Many unpatinated scrapers were found. (P. scraper A.), (P. knife A.), (P. knife C.), one grooved arrow shaft polisher. The two sherds found in this site were sent to Dr. H. P. Mera, Staff Archeologist of The Laboratory of Anthropology, Santa Fe, New Mexico, and he reported in a letter dated July 15, 1935 as follows:

"The letter and sherds arrived safely and I have been much interested in examining the latter. They are both, without doubt, of Pueblo manufacture. No. 1 is a fragment from a cooking or utility vessel but No. 2 was originally part of a decorated olla. The type of glaze and other characteristics seem to

point to a time horizon for the latter specimen not earlier than the beginning of the 15th century. These sherds, with the exception of several found on an old Indian village site in Rice Co., Kansas, near Lyons, are the farthest east occurrences that I have yet seen or concerning which I have any knowledge.”

To a later inquiry Dr. Mera answered as follows:

“Regarding the Pueblo sherds sent me previously and about which you inquire. All that can be safely said is that they belong to the Rio Grande Glaze-paint ware which flourished from the early part of the 14th century, A. D., to about 1700. The various specific types are distinguished principally by their rim forms and therefore, without this feature are difficult to identify exactly. However, there are also some differences in the quality of the glaze paint that often permits a separation of the earlier forms from the later. It was this last feature that determined my identification of probable age.”

#### *Site Sixteen*

Many unpatinated scrapers (P. scraper A.) were found. (P. knife A.) and (P. knife C.), (P. arrow E.), P. flake drills, (P. knife A.), (P. knife C.), 329 sherds, and one combination knife-drill.

#### *Site Seventeen*

Site Seventeen has a number of distinctive features. It was discovered in the fall of 1928 and all of the collected materials from the site have been kept together in one large marked container with the exception of a few specimens obtained in the summer of 1929 by Dr. Walter Hough of The National Museum, and others by Dr. J. Alden Mason and a party of four associates during the same summer, and the sherds recently sent to the Ceramic Repository at Ann Arbor, Michigan, and to Dr. Mera at Santa Fe. When Dr. Hough was here no pottery had then been found in the site although we searched for it. Later Dr. Mason's party found the first pottery sherds in it. Both scientists obtained specimens of the small, finely worked, long, narrow scrapers it contained. Later one of Dr. Mason's party wrote to the writer stating that some scrapers were then

collected near Abilene of a type found elsewhere in sites only with Folsom Points. In the interval the writer had found four Folsom type spear points in the site, and one other within a mile and another within two miles of this site. A drawing of one of the typical scrapers elicited the reply that it was of the type referred to. The site is along a gentle rise of land above a small creek. The land is black sandy top soil and the artifacts were plowed up in a cotton field. The writer does not believe that there is any evidence that the site is of Pleistocene age. The gravel beds in the creek bank many feet below the site probably are of Pleistocene age but thus far no flint artifacts have been found in that level.

The numerous metates of the site had mostly been broken up by plowing and cotton pickers had removed most of the intact large knives and spear heads. Only a few of the manos and flint ball hammerstones were kept on account of their size and weight, but manos, metates, and hammerstones were formerly very abundant. Two pecked and polished celts were found. One polished oval pitted hammerstone was found in the site, and another similar one in a small site of the same culture not far away. Two yellow paint stones (one used) and much red oxide of iron paintstone were found. Eighty-six broken knives having leaf shaped ends were found. Probably these were mostly of the (P. knife A.) type. Of large barbed and expanded based dart points there were 33, shouldered and stemmed 17, large triangular points 8, P. flake drills 9, chipped paddle shaped based drills 9, spokeshaves 4, curved bladed knives 3, almond shaped knives 8, flake saw 1, plain flake knives 29, Folsom Points in and near site 6, small expanded stem barbed arrow heads 9, (P. knife A.) 11, all patinated, (P. knife B.) 1, unpatinated, (P. knife D.) 2, (P. knife C.) 45, and of these 17 were unpatinated, (P. spear A.) 7, (P. spear B.) 2, potsherds 109, of two plain types, (P. arrow A.) 7, (P. arrow B.) 37, (P. arrow C.) 1, (P. arrow D.) 26, (P. arrow E.) 19, (P. arrow F.) 28. Of the distinctive scraper type of this site (P. scraper C.) a total of 266 were found. Of these 56 had some original crust, and 210 had no crust. In the matter of patination the total was divided into three parts. Of the unpatinated, or only slightly spotted, there were 95 scrapers, and of these 10 were graver

pointed. Of the intermediate gray patination, there were 96 scrapers, of which 13 were graver pointed. Of the white, thickly patinated scrapers, there were 75, and there were eight graver pointed among these.

Doubtless many more scrapers had been equipped with graver points, which had been broken off, as nearly all had been brought down to narrow pointed ends opposite to the rounded cutting ends. While most of the scrapers had ridges down the backs, 52 of them had been made quite thin, and flattened on the backs, by taking the ridge out in one central longitudinal flake. The scrapers of this site were pictured and described under "Small Scraper Culture" in Vol. 1, 1929 Bulletin Texas Arch. & Pal. Society, see (Note 14). Scrapers of a very similar type, although apparently none were brought to graver ends, nor of so exquisite workmanship as those of Site 17, are shown as "Folsom Complex" scrapers in a 1935 Smithsonian Bulletin. (Note 15). Along the highest portion of this campsite remains of the plowed down rings of a row of low Texas Burnt Rock mounds occur. The associated artifacts found in this site set in motion these thoughts. Is this a site of Folsom Culture? If so, are the peculiar scrapers, the fine small arrow heads, the bevelled knives and the plain undecorated pottery of two types, also Folsom criteria, or the work of other later occupants of the site? There is no doubt that the small fine arrow heads, the pottery, the scrapers, and the bevelled blades are all plowed up together, mainly in one part of the site on the slight slope of the southwest portion. These artifacts will be kept together and available for future study by a limited number of those doing serious scientific research.

#### *Site Eighteen*

This site was found by E. B. Sayles, who collected from it until he left here nearly four years ago, but the writer has no data concerning the artifacts obtained, other than that many pottery sherds were found. From it the writer has since collected 53 sherds. Also 49 scrapers of which 19 contained some original crust, and 30 no crust, 29 were patinated, 20 were unpatinated. Of scraper

types there were (P. scraper A.) 44, (P. scraper C.) 4, (P. scraper B.) 1; the latter has a deep channel down the center. Considering that this site is not over two miles from Site No. 17, the finding of only four (P. scraper C.) type is significant. There were 4 P. flake drills, paddle drills 1, barbed and tanged drill 1, portions of knives which probably are (P. knife A.) 15, (P. knife C.) 8, almond shaped knives 3, flake knives 2, (P. arrow A.) 3, (P. arrow B.) 1, (P. arrow C.) 1, many buffalo bones and teeth, flint ball hammerstones, manos, and metates, and red paint stones were found.

#### *Site Nineteen*

In this site a few (P. scraper A.) and 12 sherds were found. The usual proportion of unpatinated flints existed in the site.

#### *Site Twenty*

(P. scraper A.) 13, (P. scraper B.) 1, (P. knife A.) 1, (P. knife B.) 1, (P. knife C.) 3, (P. arrow B.) 1, (P. arrow C.) 2, (P. arrow E.) 1, large quartzite fist axe 1, potsherds 4, (these sherds are similar to those in P. site 5). One portion of a used disk of red oxide of iron paint stone was found.

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#### *Bibliography*

- (1) Cyrus N. Ray, *Archeological Research in Central West Texas*, p. 64, Vol. 4, 1932 Bulletin of Texas Arch. and Pal. Society.
- (2) A. T. Jackson, *Types of East Texas Pottery*, Vol. 6, 1935 Bulletin of Texas Arch. and Pal. Society, p. 55.
- (3) W. C. Holden, *Excavation of Saddleback Ruin*, Vol. 5, 1933 Bulletin of Texas Arch. and Pal. Society, p. 48.
- (4) Floyd V. Studer, *Texas Panhandle Culture No. 55*, Vol. 6, 1934 Bulletin of Texas Arch. and Pal. Society, p. 92.
- (5) Warren K. Moorehead, *Archeology of the Arkansas River Valley*, 1931, Fig. 29, pp. 63 and 86.

- (6) Alfred V. Kidder, *The Artifacts of Pecos*, 1932, pp. 32, 33, Figs. 15, c. and d. and 16, b.
- (7) William Duncan Strong, *An Introduction to Nebraska Archeology*, Smithsonian Miscellaneous Collections, Vol. 93, No. 10, July, 1935. See Page 231, also plate 24, 1. Artifact types, top level (111), fig. f. Also plate 7, 2, figs. a, b, c, d.
- (8) Thomas Wilson, *Arrowpoints, Spearheads, and Knives of Prehistoric Times*, Annual Report of Smithsonian Institution 1897, plate 39, No. 19.
- (9) E. B. Sayles, *Some Flint Sources in Central West Texas*, Vol. 3, 1931, Bulletin Texas Arch. and Pal. Society, pp. 18 to 22.
- (10) Cyrus N. Ray, *A Differentiation of the Prehistoric Cultures of the Abilene Section*, Vol. 1, 1929 Bulletin of Texas Arch. and Pal. Society, pp. 17, 18.
- (11) Floyd V. Studer, *Archeological Survey of the North Panhandle of Texas*, Vol. 3, 1931 Bulletin Texas Arch. and Pal. Society, Plate 11, No. 1.
- (12) A. V. Kidder, *Artifacts of Pecos*, 1932, Fig. 212, c, d, e, f.
- (13) W. C. Holden, *Texas Technological College Yaqui Expedition*, Vol. 6, 1934 Texas Arch. and Pal. Society Bulletin, Plate 4, No. 11.
- (14) Cyrus N. Ray, *A Differentiation of the Prehistoric Cultures of the Abilene Section*," Vol. 1, 1929 Bulletin of Texas Arch. and Pal. Society, lower half of plate 2.
- (15) H. H. Roberts, Jr., *A Folsom Complex*, Smithsonian Miscellaneous Collections, Vol. 94, No. 4, June, 1935, plates 9 and 10.

## **A REPORT ON THE ARCHEOLOGY OF TITUS COUNTY IN EAST TEXAS**

BY WALTER R. GOLDSCHMIDT

This paper is a discussion of the most important data obtained last season by a field crew of the University of Texas, operating under the direction of the writer in Titus County, in the northeastern portion of Texas. Space does not permit me to say more of the general culture traits of the East Texas pottery region than to point out that it forms the southwestern periphery of the Southeastern Woodland Culture Area, and of the Mississippi Valley Mound Culture. Village dwelling, agriculture, pole huts finished in mud and thatch, mounds, extended burials, pottery decorated with engraved and applique designs, ground celts and grooved axes, fine arrow-points and crude chert and flint implements, shell and bone tools and ornaments are all typical of the entire area.

It is the belief of the writer that the field work in Titus County sheds some light on the distribution, spatially and temporally, of some sub-cultures within the area, and also dispels in part the attitude now taken regarding East Texas culture distribution; namely, that four sub-areas exist and that these correspond to the four major river systems.<sup>1</sup> While in this report it is not feasible to delimit such areas as do exist, indications are that the region cannot be divided on the basis of the major river systems. Though we are prepared to admit the isolation of the materials in Anderson county (Jackson's Neches River Ware) on the one hand as a local sub-area of an extent yet unknown, and of the Sanders material (Lamar county on the Red River) on the other, the body of artifacts between these two regions and eastward to the state line does not fall into two distinct cultures. Furthermore, no clear cultural unity exists along the river systems that will permit the unqualified association of each separate culture with a specific valley.

While it is valuable to classify the materials from this rather large area, one must be cautious not to infuse a preconceived idea into an early description. Thus the concept of the association between a valley

and a culture, important as it may be in the vast semi-arid region of the Southwest, cannot be considered significant in the humid, flat, wooded region with which we are dealing. The grouping of materials, first by counties and then by river systems, without previously determining whether this grouping is established by the plotting of the distribution of the various culture traits and complexes and by statistical analysis, is not, in the opinion of the writer, justified.

In the following pages we shall indicate, first, the existence within a single area of two separate phases of East Texas culture, and second, the distribution of a single continuous phase over two separate drainage systems. Let it be clear that we do not discard entirely the previous classification, but that we are merely anxious to proceed with extreme caution in imposing a system on the future archeologists operating in this region.

The procedure will be, to discuss first two burial sites west of Mt. Pleasant, Texas, that were similar in all but statistical details; second, to describe and discuss two sites in the northern portion of the county on the Sulphur River; and finally, to analyze the data obtained from a mound east of Mt. Pleasant.

The first two sites lie in the northern portion of the Cypress Creek drainage, a large tributary of the Sulphur River. The first site to be worked during the summer was on the Thomas B. Caldwell plantation, two and one-half miles southwest of Mt. Pleasant. The burials were on a small hill rising out of the bottomland, almost a mile from Tankersley Creek. The ground had been cleared and was under cultivation. The top soil was a fine sandy loam, and the subsoil was a hard red sandy clay about three feet underground. The A. P. Williams site was in a small valley on Dragoo Creek, south of the Cotton Belt Railroad, three miles west of Mt. Pleasant. The soil was a very hard-packed sandy clay, but the typical red subsoil was absent.

Ten burials were found at each site, but in each case some burials may have been destroyed. Both cemeteries were small—about forty feet in diameter—and the graves were close together, being irregularly placed but nearly parallel. Only in a few graves on the Williams site were there any traces of skeletal material, while no remains were discovered at the Caldwell site, and none of the bones was strong enough to be taken from the ground.

The total absence of skeletal material from many East Texas graves has puzzled Texas archeologists. Three separate solutions have been offered, which may well be recorded here. The first is that the remains had been cremated and were interred as ashes which have since washed away. There are, however, several objections to this suggestion; namely, ashes are seldom found in these graves and yet are often preserved in other places; the holes are almost always of such a size and shape as to contain an extended human body; there are all gradations of decayed bones, and the poorly preserved but discernible specimens of skeletons show no traces of having been burned; and the distribution of a culture trait of incineration would find no correlation with the distribution of other culture traits. A second suggestion is that in a given degree of humidity the bones will disintegrate at a constant rate, and that the extent of disintegration is a result of the duration of inhumation. If this could be proved, it would make an invaluable chronometer. However, we find prehistoric sites containing better preserved specimens than some in which trade articles were found. As a matter of fact, this explanation should not be employed until definitely proved, since it leads to a relative dating of sites which may prove confusing. A third explanation is that the state of preservation is dependent on the chemical and physical condition of the soil and that it can indicate neither a culture trait of cremation nor a relative chronology. Such variable factors as the acidity of the soil, its chemical nature, drainage, surface flora, and the subsurface life, are all to be considered. Though East Texas is superficially a unit in most of these factors, empirical evidence must be had that only time and humidity

are important before relative age can be determined from the condition of the skeletal remains.

The Caldwell graves were located at approximately fifty degrees east of north, with a single exception; this was headed due east. The Williams burials were aligned more directly east and west, varying as much as twenty degrees in one case. The graves at the Caldwell site were rather shallow, due probably to the erosion of surface soil from the slope of the hill. At the Williams place they had a depth of two and a half to three feet, which is probably the average for burials in East Texas. The graves varied a great deal in size.

The mortuary deposits in these graves were similar in many respects, and represent a type widely distributed in the central portion of East Texas. There were ninety-five vessels in the graves at the Caldwell site, and eighty-one at the Williams. There was no especial arrangement of the vessels within the graves, they were simply placed around the body.

There is a general similarity in the types of vessels and in their numerical distribution; that is, at each site the bowl form is the most frequent and the pot next, while less than one bottle per grave was found. There are in each case a few unusual forms. The most common form of bowl found in East Texas is one with a flat base, a conical body, and an almost vertical rim, the type called *cazuela* by Harrington.<sup>2</sup> (Plate III, Nos. 4, 5, 6.) This form was abundant at the Caldwell site but less so at the Williams. The design, usually incised on the rim, is most often a scroll in some conventionalized form. A more frequent form of bowl at the Williams farm was the type designated by Harrington as the *intermediate* form.<sup>3</sup> (Plate III, No. 8). The bottom is flat, the sides conical, but curve abruptly inward at the top, whereas the rim at the margin is curved outward. The design is found either on the rim or on the inturned ledge of the sides. The pot is usually a utilitarian vessel. Some are large and were used for storage, while others are smaller and were employed in cooking. They were usually left undecorated except for punctate marks around the rim and vertical striations hastily scratched on the body with

a crude whisk on the soft clay. The pots from the two sites were similar, only occasional variations occurring. There was little that was distinctive about the bottles from the Caldwell site. The designs around the body consist of circles, scrolls and diamonds or lozenges in various combinations. A rather unusual feature at the Williams site was the finding of three well-made bottles which were similar in workmanship and design. The bodies were four-cornered, i.e. approximately square, although the neck and base were round, and the designs were almost identical. The other Williams site bottles were also better formed than those from the Caldwell site. A single effigy bowl was found. Its handles were conventionalized representations of a bird's head and tail, very similar to two specimens in the University of Texas collections from the Taylor farm, and to others from the Russell site. The pottery from East Texas was usually made by coiling, but one small piece from the Caldwell site was shaped out of a lump of clay. At the Williams site there was an egg-shaped bowl with nicely finished scroll designs. Several pieces of redware were found at the Williams site, but there was none at the Caldwell site. These were colored by the application of a red slip, the only type of slip represented at these sites.

In East Texas, in Titus, Morris, Camp, Upshur and Harrison counties, there is found in the graves a peculiar type of arrowpoint, which is seldom if ever found on the surface. They are finely chipped chert points of triangular form with keen edges, smooth surfaces and no tang. About eighty-five of these typical specimens came from the Caldwell burials. The forms found at the Williams site are similar, but vary in that, first, they always have a tang, second, they are less evenly formed, and third, both flint and chert were used in making them. Celts are often found in graves in East Texas, while grooved axes have never yet been found buried with the dead. Three celts were found at the Williams site and one at the Caldwell. The occasional finding of paint and ground clay in vessels in the graves is typical of the region, and was found at both places.

The essential similarity of these two sites is manifest, though minor differences are apparent.

This similarity is expected since the two sites are only about two miles apart. They both appear to be examples of a sub-culture of wider distribution in East Texas, the prototype of which is found in the Taylor site, an extensive cemetery in northeastern Harrison County. Its distribution is not yet determined, nor is it probable that lines of demarcation will ever be clear. The pottery from this region has been called Sabine River Ware by Mr. Jackson,<sup>4</sup> but its distribution is not limited to the valley of that river. A culture complex with such outstanding features as (1) abundant mortuary deposits, (2) Cazuela and intermediate type bowls, (3) scroll and circle designs, (4) utility pots, and (5) the fine mortuary arrowpoint is found over a large area in the central region of East Texas, and represents a phase from which a majority of our East Texas pottery at the University of Texas is derived.

In the middle of August the crew moved to the bank of the Sulphur River in the northwest corner of Titus county, near Talco, Texas. Two sites were investigated here, only one of which was completed. The first of these was the William Farrar site, and the latter the W. A. Ford. Both were on the very edge of the Sulphur bottom lands, above flood level. They were about two miles apart.

The entire terrace of the river is covered with surface material consisting of crude chert artifacts and sherds of various grades of pottery. Some pieces of finer workmanship were found but most of the material was crude. The Farrar site was on a natural rise, and the small hill was covered with a midden deposit about one foot deep, in which there were several burials. Below the midden, which probably had been thicker before the land was brought under cultivation, was a hard, gray clay. Several graves and some pottery vessels had been removed by the tenant.

Seven burials were found on the hill during the short stay at this site. Trenches were dug in three separate locations not forty feet apart, yet different types of burials were found in each of these three places. At one place there were two badly jumbled burials, seemingly reburials. No artifacts were found with these. Two other skeletons, flexed on their

right sides, were found at the second location. Only flint artifacts were with these. At the third location three extended burials were found, two of which contained one vessel each, while the third had three vessels.

Unfortunately the mystery of the existence of three distinct types of burials within a radius of fifty feet remained unsolved, as the crew was obliged to leave the site on account of differences between the owner and tenant over the right to permit investigation.

The Ford site proved most interesting in the light of our special problem, for here we found burials of two separate types. One of these bore similarities to the extended burials (those containing pottery) at the Farrar site, and will be called Farrar type burials. The other can be identified with the sites to the south previously described, and will be called Sabine type burials. The eight Farrar type burials found at the Ford site were shallow, averaging about eighteen inches in depth. Several of these contained no vessels, although as many as three were found in one grave. The fragmentary skeletal material was sufficient in most cases to indicate the supine positions of the bodies. None of the fine flint work previously described was in any of these burials, but only larger and relatively crude pieces, and there was no polished stone work. The molding of the vessels is rather uneven; the typical cazuela and intermediate forms are missing; and there are no examples of the scroll motif. Punctate designs, nodes, and straight lines were employed in decorating the vessels. These generalizations apply as well to the vessels from the Farrar site. The simplicity of form and design, as well as the similarity between the Farrar site vessels and those from the Farrar type graves at the Ford site, is striking.

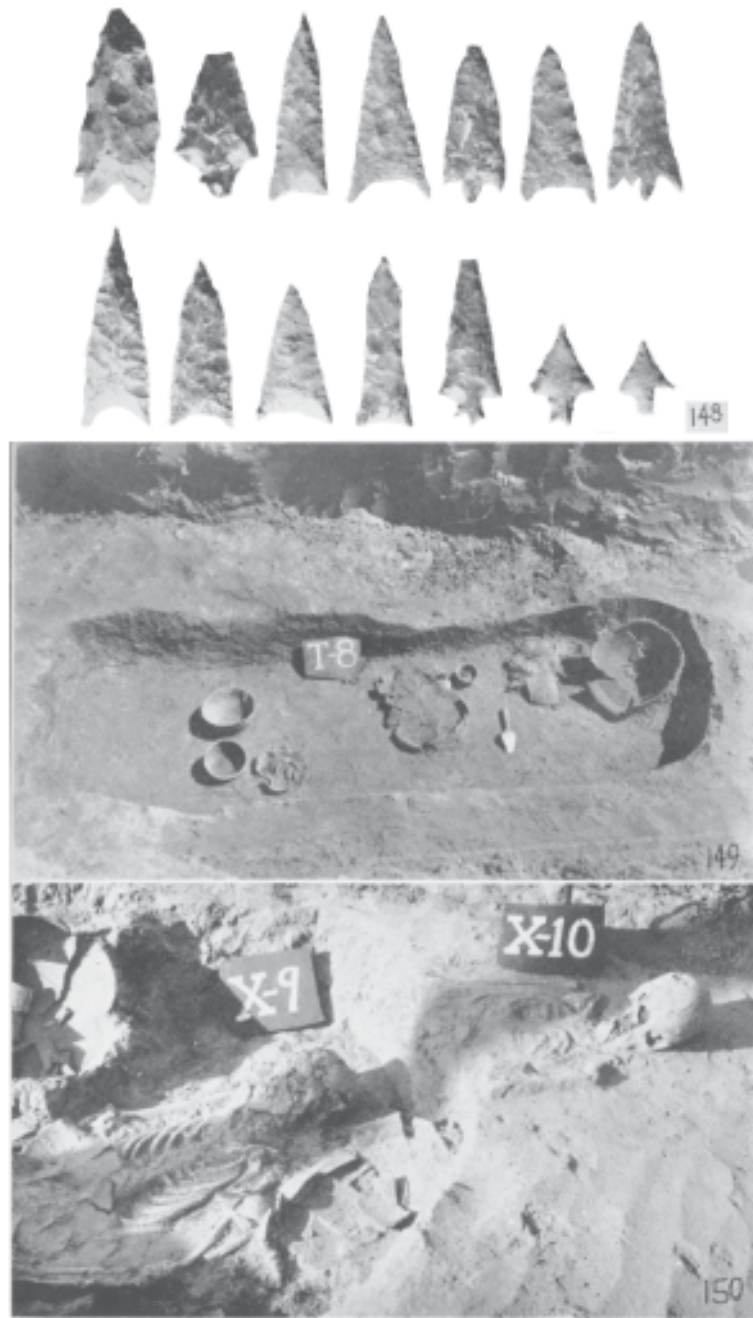


PLATE 11.

148. Flint arrow heads from East Texas, 1-2 Farrar type burials, 3-4 Sabine type grave. Ford site, 6-7 Caldwell site, 8-9 Taylor site, 10-11 Riley farm, Upshur County, 12-14 Williams farm. Note crudeness of the first two specimens, which are from Farrar type graves.

149. Extended burial at T. B. Caldwell site, Titus County, showing size of grave and number of mortuary materials.

150. The intrusive burial on the W. A. Ford site. The one to the left contained ten vessels and three arrowpoints and was eight inches below the other, through which it had been dug. No artifacts were with the burial on the right.



Three of the burials at the Ford site and their mortuary deposits do not conform to the above description. These three burials bear a close resemblance to those at the Caldwell farm, and may be considered a part of the same phase of East Texas culture. They contained twenty-eight vessels and thirty-one arrowpoints of the finely chipped type. There was also a single celt. The skeletal material was well preserved, in contrast to the bones in the other graves at the site. There are many bowls of the cazuela and intermediate forms, two bottles, and several pots. The scroll motif and its modifications were frequently employed, and several pieces of redware were obtained.

The contrast between the Farrar type graves and the Sabine type is striking, and is accentuated at the Ford site by the presence of an intrusive burial. The second grave of the Sabine type to be found had been dug through the remains of one of the Farrar type, cutting away all of the latter below the thoracic region. This circumstance makes it clear that the Sabine type burials were either contemporaneous with or later than the Farrar group, for at least one of the latter had to be planted before one of the former. The two are probably definitely separate phases, the Sabine type being the more recent.

It has been suggested, however, that this variation in the graves at the Ford site is the result of the different social status of the individuals interred. The plausibility of this explanation must certainly be admitted, and we can only present our reasons for believing otherwise. It has already been indicated that the differences extended into various details; namely, depth of burial, abundance of mortuary deposits, bowl forms, design motif, use of redware, flint industry, polished stone industry, and the state of preservation of the bones. Each complex has been found separately, but they have never been found in conjunction before. Differences in the wealth of material in graves within other sites is general, but in no case do they fall into two classes, and other markedly different culture traits are not noted as was the case at the Ford site. The presence of the intrusive burial in itself does not constitute evidence of two separate peoples, other

examples of such situations being numerous. The Sanders site (Lamar county) had two, the Clements site (Cass county) had one involving three separate graves, and the Taylor farm (Harrison county) had a questionable example.<sup>5</sup> None of these show any evidence of having been made by two groups of people and hence are not significant to students of culture successions. Harrington describes intrusive burials from several sites, and at the Washington group of sites he finds either two separate peoples or the same at different times.<sup>6</sup> Unfortunately he does not clearly distinguish either group. He also believes that intrusive burials indicate a lapse of time. In our case, the intrusive burial is valuable in indicating the relative age of the two groups which have already been differentiated on the basis of culture traits, and the Sabine type is shown to be the more recent.

The only indication at hand of a lapse of time between successive occupation periods is that the state of preservation of the human remains in the Sabine type graves is decidedly better than in the Farrar type. Though both groups are from the same site and hence the soil conditions should be similar, we cannot accept this fact as proof of a long break between the two periods of occupancy. The cultural differences indicate separate tribes, but do not represent different stages in cultural evolution, and hence do not call for a period of time. In enumerating the differences between the Farrar and Sabine type materials we must not lose track of the basic similarity indicated by the burial of the dead in an extended position, with mortuary deposits of incised ceramic material and of chipped flint. The two groups undoubtedly represent the same general culture.

We have within the Sulphur River valley two separate phases of the East Texas Culture. Of the two types, we find that one is poor in pottery and shows inferior technique in ceramic and stone artifact manufacture. This we have named the Farrar type. The other has a relatively high grade of pottery and stone work, and is rich in amount as well as quality of materials found in burials. The former of these is represented to date in the University of Texas records by only two sites, the latter is a

representative of a more widespread group extending to the southeast and into the Sabine River valley. Lastly, the less well-developed phase preceded the one of greater development, though the length of the intervening time is not known.

We will next describe the Keith mound, a large earthwork about three miles east of Mt. Pleasant, in the valley of Hart's Creek. The culture trait of mound building extended into Texas as far south as the Guadalupe River, however we have as yet no positive evidence that the mounds in Texas were built by the Caddo Indians, but this is probable, since no great differences in culture existed between the people who built the mounds and those who occupied historic sites.

The Keith mound was probably a ceremonial mound. It is fifteen feet high, oval, with axes of 240 and 160 feet, the longer axis being on a north-south line. The sides, especially the east one, are rather steep, and the top is flat. It has been under cultivation about twelve years, and the present owner claims that it was originally about three feet higher, had steeper sides, was clearly rectangular, and had a large flat top. These statements seem quite plausible, as there is a great deal of earth around the sides that must have been carried down from above by the plow and by erosion incident to plowing.

A wide trench was cut along the short diameter. From this a cross-section was obtained which indicated how the mound had been built. A midden deposit formed the floor of the mound. Red clayey loam had been piled over this shallow midden to form a small mound. After a period of building inactivity indicated by the finding of a fine laminated sand layer around the sides, this low mound was increased in size.

Several successive building stages are apparent. The laminated sand may have been deposited by the creek, which then must have flooded at a higher level than it now does, or it may have been mound




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 PLATE 12
 

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151. A Farrar type vessel showing simplicity of form and design.  
 152. A cazuela from T. B. Caldwell farm.  
 153. Cazuela form bowl from W. A. Ford site showing a conventionalized scroll design.  
 154. A bird effigy from the Caldwell site.  
 155. Vessel from extended burial at Wm. Farrar farm with design motif of lines in a punctate field.  
 156. Vessel from a Farrar type grave at the W. A. Ford site showing similar motif to 155.
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wash from the higher portion of the mound. In the peripheries of the mound there is a solid layer of this fine laminated sand under the top clay, but toward the center it breaks into separate layers indicating successive building periods. In the central portion there is none of this laminated sand, indicating that the floods, if floods are responsible for the layer, never covered the mound.

Discontinuous streaks of dark earth at different levels suggest that the mound was used at various stages of its growth, but the usage was not necessarily extensive nor is its type definitely indicated. Shards and burnt wattle in the mound support the theory that the mound was occupied to some extent while at a level lower than the present one.

That the mound had been built over a midden deposit and house site is indicated by the finding of potsherds, animal bones, and pestholes in the bottom black layer. A total of one hundred and ninety-one pestholes was uncovered in our trench. The most westerly of these were so scattered that the outline of no dwelling is indicated by them. In the center of the trench there was a large semi-circle of pestholes, having a radius of fifteen feet. Four yards to the east and two yards to the west were lines of pestholes running north and south. Other holes were scattered inside the arc, but what they indicate has not been determined. It is probable that there was a complete circle of holes, and that these holes are the only remaining evidence of a former large house. That the straight lines represent portions of a rectangular enclosure can well be surmised.

There is a great deal of variation in the depth and diameter of the holes. They vary from one and a half to ten and a half inches in diameter, averaging about six inches. Many are oval. They are close together on the lines and on the arc.

The potsherds indicate that the builders of this mound were also the architects of the building that had previously occupied the site. The similarity of the designs on the shards in the mound and below

it is striking. Both employed parallel straight line incisions, punctate marks, or combinations of the two. The absence of curvilinear designs finds no exception among the many decorated pieces. Redware was found at both places. This similarity of pottery in the midden and earth above it indicates that the mound was constructed by the builders of the buildings represented by the pestholes. These people also deposited a rich midden in the bottom lands to the west of the mound.

It is unfortunate that no burial site was found in conjunction with the mound, for we should like to know how the mound fits into our picture of prehistoric chronology in Titus county. The straight line and punctate marks of the pottery decoration indicate connection with the Farrar type burials, but this evidence is far too scanty to permit any definite statement. A good deal of pottery with this type of decoration was found on a rise east of the mound, but investigation was discontinued here because the long drought had made the soil extremely hard.

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1. Jackson, A. T., "Some Pipes From East Texas," *Bulletin of the Texas Archeological and Paleontological Society*, Vol. 5. 1933; also, Jackson, A. T., "Types of East Texas Pottery," in the same Society's *Bulletin*, Vol. 6, 1934.
2. Harrington, M. R., *Certain Caddo Sites in Arkansas*, *Indian Notes and Monographs*, Heye foundation, 1920, pp. 177-180 and plates XXXIII to XLI.
3. *Ibid.* Plates XLII and XLIII.
4. Jackson, A. T., "Types of East Texas Pottery," *Ibid.*, p. 56.
5. *Field Notes, Archeological Expeditions of the University of Texas*, 1931, 1932. A. T. Jackson, foreman.
6. Harrington, M. R., *op. cit.*, p. 65 ff.

## THE SPLIT STITCH BASKET, A DISTINGUISHING CULTURE TRAIT OF THE BIG BEND IN TEXAS

BY VICTOR J. SMITH

Possibly the most valuable and important results of research in the Big Bend area have been obtained by a study of parallel culture traits shown in a part of the Trans-Pecos area and in that of the Southwestern Basketmakers. These similarities have been rather fully discussed in a series of articles which have appeared in the Texas Archeological and Paleontological Society Bulletins, 1932 to 1934, inclusive, to which a valuable addition has recently been made by Mr. F. M. Setzler<sup>1</sup> of the U. S. National Museum.

At the moment, however, I am interested not in the Basketmaker evidence in the Big Bend, but rather in the items of difference between the two cultures. These points of difference lie chiefly:

1. In the use of small reed arrows in western Texas, sometimes fitted with bunt points.
2. Differences in sandal technique, and
3. Differences in basketry technique.

Until further competent research throws light upon the use of atlatl and arrows in the Big Bend, there can be little profit in discussing the first of these items.

As to the sandal types and techniques, I have already reported in the Bulletins above mentioned.

We may, therefore, center our attention upon the basketry problem. Scattered throughout the area under discussion we have the following types of baskets assembly:




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### PLATE 13

157. Small split stick basket. (See text).
  158. Lattice basketry, fragment similar to one found by Harrington in Gypsum Cave.
  159. Basket fragment showing typical Big Bend basketry stitching.
  160. A killed basket, split stitch type.
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- I. Sewed.
  - 1. Coiled.
    - a. Non-interlocking open coil.
    - b. Interlocking stitch.
    - c. Split stitch.
- II. Woven.
  - 1. Twined.
    - a. Plain.
    - b. Twill twined.
    - c. Vertical and horizontal rod foundation (known also as "tee" rods or lattice) with wrapped twined yucca weaving.

In my work and in the investigations of others it has become evident that the coiled bundle foundation with split stitch assembly is the typical and distinguishing feature of the Big Bend Culture. It is found distributed over the entire area and specimens appear in greater numbers than other types except in the Pecos River district where Setzler and Jackson report it as a secondary type. I understand that Weltfish reports that this basket technique was confined to the Big Bend region and was not found exactly duplicated elsewhere. The distribution area lies to the east of Devil's River near Bracketsville and almost to El Paso, and from the south into Mexico for an unknown distance. Unverified reports point to a horizon in Texas extending as far north as McCamey and to the southeast of that town.<sup>2</sup>

A typical split-stitch basket is shaped somewhat like a wash basin though more pointed at the bottom. The diameter ranges, with few exceptions, from 14 to 20 inches at the rim and in depth from 6 to 10 inches.

As proof, however, of the constant necessity for revising Big Bend records in order that they may be abreast of developments related to the area, I have added to this paragraph in order to call attention to a small split-stitch basket in the collection of Mr. and Mrs. B. B. Alves, El Paso, which is 1 3-4 inches deep and 5 1-2 inches in

diameter. It is possible that this unusually small utensil was a toy as it was found as a mortuary offering in the grave of a child.

The foundation of one of these baskets is a single bundle, most commonly of grasses, but sometimes of twigs, small rods, "splints," (Coffin) or mixtures of grasses and small twigs. These less common variations of the bundle are in no sense comparable to the regular two-twig and bundle triangle foundation of the Basketmaker. The sewing is to the left of the worker (viewed from the inside worked surface) and the "run" or angle of stitches is approximately 30 degrees on the larger utensils. Stitches range from five to eleven to the inch and coiled bundles from four to eight to the inch.

A distinct variation from the usual split stitch basin type is indicated in plate 14 No. 157. This small basket has split stitches on both concave and convex surfaces, possibly because the worker shifted position or work surfaces during the construction of the smaller basket. This utensil is also unusual because of a woven black band a short distance from the top edge. The usual split-stitch basket does not have woven or painted ornament though both baskets and twined bags have been found in the same mortuary deposit, the latter having decorations in red and black pigment lines.

The illustration Plate 14 No. 160 seems to indicate that the practice of killing baskets might have been common in the Big Bend region. Not enough specimens have been found of this to prove the point but the container illustrated was one of two found in the burial of a young woman and child. The second of this pair had been damaged on the bottom and rather skillfully mended with stitched rawhide reinforcements.

Because of the unusual interest attached to a new type of weave discovered recently at Dead Cow Cave by myself and also reported by Setzler<sup>3</sup>, attention is called to a weave technique in which single, vertical, and horizontal rods of small diameter are securely bound together in a wrapped twined assembly. Vertical rods are on the inside of the utensil which seems to be a conical type of basket, Plate 14 No. 158. The thread element seems

to be the usual yucca leaf fiber which binds, without inter-locking, consecutively one horizontal rod to the adjacent vertical rod.<sup>4</sup> M. R. Harrington in his report on Gypsum Cave, Nevada, describes by illustration and diagram an identical technique which he discovered at Gypsum Cave but with questionable dating.

To sum up the differences between Basketmaker weave technique and that of the Big Bend as it relates to basketry, we find that true Basketmaker does not include the single bundle types, or the split stitch assembly such as are found in western Texas. Basketmakers did however, use twined work in bags, sandals, and to a very limited extent (Weltfish) in their basketry.

In conclusion, we may say that great progress has been made during recent years with respect to the archeological riddle presented by the Big Bend. But many unsolved questions remain and new ones are constantly arising. At the moment we are confronted with Jackson's discovery of pottery associated with the Big Bend culture types and an arrow shaft with bunt point. Recently Roberts has suggested that the culture herein discussed may not be an ancient one after all, yet the nature of the deposits indicate clearly to field workers that the caves of western Texas have been occupied for a great length of time, the extent of which, it is predicted, will be partially solved by a tree ring study. The problem of the Big Bend should continue to hold the interest of Southwestern students and is worthy of continued investigation.

1. Setzler, F. M., A Prehistoric Cave Culture in Southwestern Texas, *American Anthropologist*, Vol. 37, No. 1, 1935.

2. Recent reports from Dr. Mera, Santa Fe, and Prof. Brown, Colorado Springs, indicate a northward extension of these limits as far as the Guadalupe Mountains and into southern Colorado.

3. Setzler, F. M., Op. Cit. p. 106.

4. A "tee" technique quite similar, but not identical with this type is reported to have been used by the Pomo Indians of California. See Mason, O. T., *Aboriginal American Basketry*, U. S. National Museum Report, 1902.

### Bibliography

Coffin, Edwin F., *Archeological Exploration of a Rock Shelter in Brewster County, Texas*, Indian Notes, No. 48, Heye Foundation, 1932.

Harrington, M. R., *Gypsum Cave, Nevada*, Southwest Museum Papers, No. 8, 1933.

Mason, O. T., *Aboriginal American Basketry*, U. S. National Museum Report, 1902.

Pearce, J. E., and Jackson, A. T., *A Prehistoric Rock Shelter in Val Verde County*, Soc. Sci. Study No. 6, 1933.

Smith, Victor J., 1. *Some Notes on Dry Rock Shelters in Western Texas*, *American Anthropologist*, Vol. 29, No. 2, 1927.

2. Various articles in the *Bulletins of the Texas Archeological and Paleontological Society*, 1932, 1933, 1934.

Setzler, Frank M., 1. *Prehistoric Cave Dweller of Texas*, *Explorations and Field Work of the Smithsonian Institution*, 1932.

2. *A Prehistoric Cave Culture in Southwestern Texas*, *American Anthropologist*, 1935.

Weltfish, Gene, 1. *Prehistoric North American Basketry Techniques*, *American Anthropologist*, Vol. 32, No. 3.

2. *Problems in the Study of Ancient and Modern Basket Makers*, *American Anthropologist*, Vol. 34, No. 1.

## AN ARCHEOLOGICAL SURVEY OF THE NUECES CANYON OF TEXAS

BY VANE HUSKEY

The Nueces Canyon extends from the head waters of the Nueces River in Edwards County south through Real and a part of Uvalde County. This Canyon gradually becomes broader and more level from the headwaters of the river, until at places it reaches a width of five miles. In the Canyon are many springs, which gave a plentiful supply of good water at all times. There were also several varieties of wild fruits and nuts, and an abundance of wild game.

This, with its mild dry climate tended to make the Canyon an ideal hunting ground for prehistoric man, which can be attested by the large number of burnt rock mounds found there. Three distinct types of sites are to be found relatively, mounds, middens, and rock shelters. These shall be dealt with in the order named above.

### *Mounds*

The burnt rock mounds, while of the same structural materials, seem to be of two separate cultures. These mound cultures, I shall designate as mounds "A" and "B", and describe them in the order named. Mounds of the type designated by the letter "A" are numerous, while mounds of the type designated by the letter "B" are scarce and are found in widely separated localities.

Mounds of this type, with the exception of a few variant forms, such as the sotol pit or mound, generally consist of one very large central mound, with a number of smaller ones scattered around with no uniformity. Smaller tepee hearths can also be found around these groups. It seems that the inhabitants entertained no fixed idea of building a mound or mounds, but merely carried limestone slabs and rocks, and placing these in a circle, built a fire in the center and when the rocks became heated, placed chunks of meat upon them to roast. This is further substantiated by the fact that the ashes found deep down near the centers of the mounds

are still greasy. The rocks being of a soft texture, when subjected to intense heat for any length of time, broke up into smaller pieces than more slabs were brought up. Through the years of more or less continuous inhabitation these mounds were built. The large central mound, being the community center, is where one makes the greatest finds.

Of the relatively few mounds found where the ash deposit has been left undisturbed by man and the elements, four mounds were excavated, two completely and two partially. In these mounds, the ash deposit, with one exception, was found only upon the north and northwest sides. The location of this ash deposit has been found to be the same in mounds type "B", and in the camp middens. This ash deposit in some instances was found to run a distance of seventy feet from the outer circle of rocks, and in depth from four and one-half feet at this circle to eight inches on the outer edge.

Three strata of habitation are found. Between the middle and lower levels the stratum is very clearly defined. In some instances a layer of earth and gravel approximately one-half inch thick separates the two levels, while between the upper and middle only a humus line separates the two.

### *Food Products*

Great quantities of snail shells, some burned and blackened by fire, are found at all levels. This leads one to the conclusion that the snail was one of the principal food supplies and that a good number were eaten raw. Only an occasional fresh water mussel shell is found, and as no living mussels are in the streams of the Canyon at the present time, this leads one to believe that mussels were very scarce at the time the inhabitants were here. Crushed and battered bones of deer and buffalo are usually in all levels, in the majority of the mounds; in others only small quantities were found.

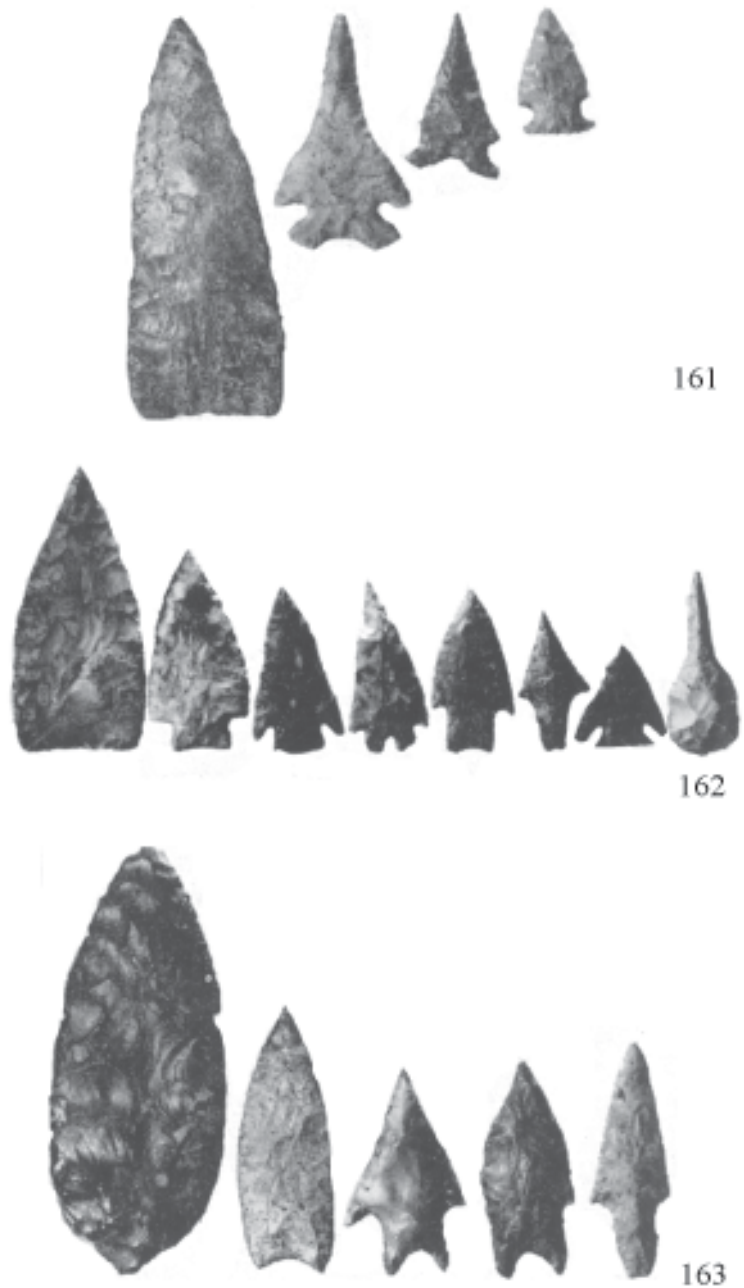
### Artifacts

No evidence of the use of tobacco, other than the finding in close conjunction of two pieces of deer horn which may have been used as tubular pipes. The two pieces were from the butt or end of the horn. Both pieces were about two and one-half inches in length, the butt having a small hole drilled through the end, while the hollow end was charred and burned. As these were in the ashes there is a possibility of their having come in contact with the fire, thereby becoming charred. As only two were found, others will have to be found before any definite conclusions can be reached as to their use for the purpose of smoking. No potsherds are found around mounds of this type.

That contact and trade was carried on between these and other tribes, is evidenced by the finding in one of the mounds richest in artifacts of one three-quarter grooved axe of gray granite or similar stone, three celts, two of hematite, and one highly polished of a fine dark green stone three and three-quarter inches long and two inches wide at the sharp cutting end, from which it tapered to a small rounded head. These celts are suggestive of those found farther north. These artifacts were found in the middle stratum and are entirely foreign to this locality.

While it is apparent that the inhabitants went through a period of considerable transition in the making of flint artifacts, from the lower levels into the middle where one finds artifacts that show complete mastery of flint work. From the middle to and in the upper levels one finds a marked change. The artifacts in this upper level are generally of one form and show a marked degree of crudeness.

No true arrow or bird points were in these mounds. Considerable work was done to determine these facts. The entire ash deposit of one and a part




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#### PLATE 14

161. Artifacts of upper level Mound A.  
 162. Artifacts of middle level Mound A.  
 163. Artifacts of lower level Mound A.
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of those of the other mounds were screened. Metates, manos, fist axes, (Coup de poings) and knives of similar type are found, as well as side and duck bill scrapers, and the so-called war club points or heads, which were too large for hafting as projectiles and probably were devoted to the former usage. On the other hand they could have been unfinished knives or rejects which were interspersed



through all levels. While there is a noticeable degree of variation in the form of the projectile points, this is not sufficiently pronounced to lead one to think of another culture, but merely to indicate that the inhabitants may have passed through a period of transition, thereby becoming more skilled in the art of flaking and working flint, creating changes in the forms which showed improvement over the older ones. While a very large percentage of broken knives and projectile points occur at all levels, the artifacts as a whole run about twenty per cent for the lower level, seventy per cent for the middle level, and ten per cent for the upper. Awls and punches of various sizes and lengths, while not rare, are not plentiful. Some have rounded and flat bases, others were reworked from projectile points, which could be hafted.

#### *Lower Level*

The artifacts from this level, while not crude in workmanship, are thick, heavy and very sharp pointed. The projectile points are of two distinct forms and do not vary from these types. In both, the end of the tang is rarely square across, but always has one corner lower than the other. The knives are of uniform pattern, many of which still retain their sharp cutting edges; and some are notched for hafting. One triangular shaped slate pendant with two holes drilled in the tip, and two close to the bottom of the triangle for the suspension of shell or other ornaments was found at this level.

#### *Middle Level*

Five different types of knives and projectile points are found in this level which are perfect in workmanship, and show complete mastery of secondary chipping. The knives, while of the same shape and pattern as those of the lower level, are much thinner and have sharp cutting edges. Four of the corner tanged knives were in this level, three of them were taken from one mound. Of these three, one was in contact with a fist axe and an unnotched triangular shaped knife. These three artifacts were so placed as to lead one to believe that they were being used by the owner to complete some piece of work. It is the writer's opinion that these corner

tanged knives, fist axes, and other artifacts were used for several different purposes. The projectile points are very thin, are worked to a sharp point, and are perfectly notched. Fist axes are much better shaped and have sharp cutting blades.

#### *Upper Level*

The change from the middle to the upper level can only be discerned by a humus line and the radical change in shape and form of projectile points. One form seems to dominate. The flaking shows a carelessness in workmanship. The bottom point of the tang projects farther than the points of the barb, all of which seems to indicate that these points were only made or used when the user could not procure more suitable material, such as iron or steel.

#### *Mounds "B"*

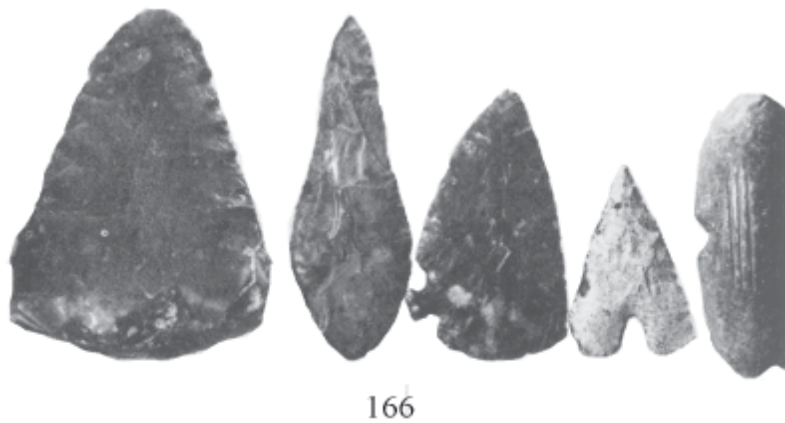
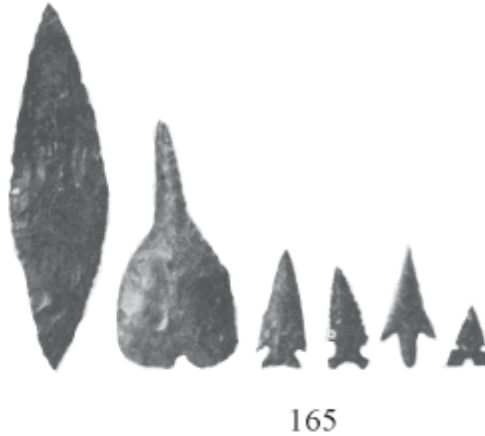
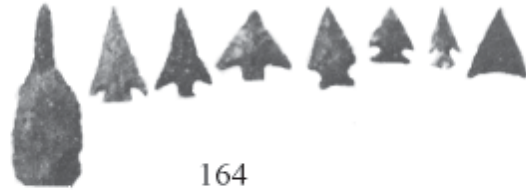
Mounds of this type, while of the same structural materials are of such an entirely different nature as to form of artifacts, and mode of burial as to lead one to believe that the inhabitants were of an entirely different culture from those of mounds type "A". Only one stratum of habitation is found. This type consists of only one large conical mound. Very few of the kind are found in this locality, and of those, only three were suitable for excavation. Of these three, one was completely, and two partially excavated. All artifacts were entirely different from those found in type "A". Only very small arrow and bird points three-eighths to one and one-half inches in length were found. While of some variation as to form, all were of the same type. Not one large knife nor projectile point was found. A very small combination knife and punch, along with these small arrow points, a few scrapers, and rough bone crushers comprised the artifacts found. In the one mound completely excavated, all of the ash deposit was screened and over three hundred unbroken artifacts were found. Very few animal bones were found; those consisted chiefly of the bones of deer, turkey and other small game. No buffalo bones were found. A few potsherds, tempered with bone, were found upon the surface. The artifacts are very similar to those of the Gulf Coast, but the absence of shell ornaments and other artifacts, such as those usually

associated with the Coast tribes, is very confusing. Other similar sites must be studied and marginal cultures found before definite conclusions can be drawn concerning the status of this culture.

### MOUND BURIALS

#### *Mounds Type "A"*

Two forms of burials associated with this type of mound have been found. Namely, flexed and bundle burials. Of the former, four were found, three of infants or very small children and one of an adult female. Those of the infants or children were in the ash deposit around the mound. A round hole of approximately eighteen inches in width was dug to a depth of about twenty inches below the surface of the undisturbed earth, the body was then placed in the hole and large flat stones placed over it. These rocks were then covered with about one foot of soil, then a metate, (in one burial there were three metates) was placed horizontally in the earth, and the rest of the hole filled. The burial of the adult was in a deep wash where the water had cut into the bank, leaving the skeleton exposed. The mode of burial was the same as those in the mounds, except that the body had been carried about thirty yards from the mound. The body was placed in a sitting posture with knees drawn up under the chin. Artifacts found in these burials consist of two or three pieces of broken knives and projectile points, several pieces of chipped flint, a pebble or two, suggestive of the painted pebble, and invariably the metate. It is very probable that earth burials were made only when the mound was so situated that neither convenient caves nor fissures in the rock were near.




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#### PLATE 15.

164. Artifacts of mounds of B. type.

165. Artifacts from kitchen middens.

166. Artifacts from all levels Mound A.

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#### *Bundle Burials*

These burials are found where mounds are so situated as to be near small caves or deep fissures in the faces of cliffs. Eight such places were found, and I am sure that more could be located. After discovery of one such burial others are easy to find. None of the known burial places have been completely explored nor excavated. Three such places were worked only enough to enable one to

be sure that there was no variation in this mode of burial. The exact number of burials in each one of these caves or crevices could not be ascertained. In two cases only one skeleton was found, while in another thirty-two skulls are known to have been taken. This was a very large fissure, running horizontally in the face of a cliff some sixty feet high. The fissure penetrated the face of the cliff a distance of approximately thirty-five feet. In the fissure were cracks or openings running parallel to the larger opening. The skeletons had been pushed back into these cracks, then rocks were placed so as to close the openings. Another place contained a large number of skeletons. This was in a large cave, entrance to which was gained by removing a very large rock, and it was necessary to use a rope to go down a distance of about twenty feet to get into the cave proper. This cave was found by the land owner, who noticed that the earth was washed from one side of the rock covering the entrance, leaving a hole. Upon exploration the skeletons were found. Only one inspection was made, and this was of very short duration, owing to the extreme danger from the large rock in the top of the ceiling which was very loose. Unfortunately a few days after this visit, following a very heavy rain, the entrance caved in, covering the skeletons with rocks and earth. From the one inspection it was apparent that the skeletons were brought to the opening and thrown in, as all of the bones were directly below the opening.

#### *Burials, Mounds Type "B"*

Only two burials have been found thus far in mounds of this type, both of which were found in mounds widely separated, although the manner of burial and artifacts were practically the same. These were in the top of the mound and were discovered by reason of the fact that some seven or eight large flat stones had been placed in an extended formation; these were evidently uncovered by rains. In both instances a hole had been excavated approximately six feet in length, three feet in width, and thirty inches in depth. The body was placed in the grave in an extended position with the head to the east. In each instance the bones were very badly decomposed.

The artifacts found were of the same type and consisted of two rubbing stones of gray quartz, or other similar stone, showing much use and one hammerstone of the same material. Stones of this material are foreign to the locality. Also one mano and one metate were found. In this instance the metate was placed in the grave flat, with the bowl or depression side up, with the mano placed in the bowl, as in use. Twenty-seven perfect arrow and bird points were found in one burial and the other contained ten. These arrow points were of the same variety as those screened from mounds of this type. Two shell pendants were found, one in each grave. These were elliptical in shape and were one and one-half inches in width, and two and one-quarter inches in length; two holes were drilled in the top for suspension. The same symbols had been carved on each, upon one side only. In one of these graves a piece of white stone of a soft material, resembling alabaster, was found; this was about two inches square and it had the same symbols, as those found on the pendants, carved on one side. One confusing point was noticed, namely, the presence in one grave of a finely chipped very thin knife, two and three-quarter inches in length, and one and one-eighth inches in width at the base. In the other grave, no knife was found.

#### *Middens*

Kitchen middens, other than the mound types, described in the preceding pages are found in this locality, but not abundantly. Artifacts and potsherds in these middens seem to denote a much later culture. That these camp sites were used by different tribes from time to time is evidenced by the artifacts. The midden deposits around the campsites are rather small, the deposits varying from depths of a few inches to two feet. Bones of the buffalo and deer are found in abundance. No burials have been found in association with these middens, therefore, no information could be obtained upon this subject.

Two kinds of potsherds are found; one is very rough, of black clay which is sand tempered; the other is of a reddish gray color and is tempered with bone.

### *Artifacts*

The flint artifacts consist of small arrow points, side and duck bill scrapers, and knives of the common type.

Steel or iron projectile points are found very frequently upon the surface.

Flint projectiles, while of some variation as to form, are decidedly different from those found in "B" type mounds.

### *Shelters*

With the exception of the work done by Mr. A. T. Jackson of the University of Texas, in which seven rock shelters were completely excavated, very little work has been done in the shelters of this locality. The writer, with the assistance of Mr. E. A. Alhaus, excavated one small shelter on the Wallace Ranch, from which the following information and artifacts were secured: This shelter, while very small (fifteen feet in length and twenty feet in width, with an eight foot opening at the entrance) was very dry and dusty. Excavation was started at the entrance, and a deposit of ashes and refuse three inches deep, which ran to a depth of eighteen inches at the center was found. Two very young children or infant burials were found close to the entrance. These burials were of the same type as those in mounds type "A", and described under that heading with the exception that one painted pebble was taken from one of these burials.

One yucca sandal of the square toed type<sup>1</sup> was found. Two bone needles and a part of one wooden needle, one painted pebble which had three parallel lines in red (hematite), one fire stick, rounded at one end and showing much use, a small piece of fiber cord, a small bed of lechugilla and sotol leaves and prickly pear pads and shreds, and a small piece of reed or cane which may have been an arrow shaft, comprised the perishable materials found.

A small quantity of bones of buffalo, deer, turkey and small game were found. Snail shells were very numerous.

The flint artifacts consisted of knives, projectile points, bone crushers and scrapers, all similar to

those found in mounds of type "A," all of which leads one to believe that people of the same culture inhabited both the mounds and shelters.

### *Pictographs*

Pictographs of red, orange and black were found at several places, but as a rule were so dim as to make even tracing of the objects pictured difficult. The figures depicted were of both animate and inanimate objects, such as human forms, tracks, snakes, animals and unrecognizable types.

### *Mortar Holes*

Mortar holes were found in but one place, this in a rock shelter on the Weaver Ranch, Lost Creek, Kinney County, Texas, thirty miles west of this canyon. The round-shaped holes, five in number, were shallow and did not show use over a long period of time.

### *Summary*

It appears that the inhabitants of Mounds of type "A" were of a Sedentary Group, moving to new sites only when necessity dictated, while on the other hand these mounds do not differ greatly from those found elsewhere in the State.

As for the location of the ash deposits being only upon the north and northwest sides of both types of mounds, and middens, it would seem to be a very probable conclusion to make that during the times of inhabitation, buffalo gnats, mosquitoes, and other winged pests were very numerous. As the prevailing winds in this canyon come from the south and southeast, the inhabitants used the north and northwest sides of the mounds more continuously in order to stay in the smoke and thus escape these pests.

The finding of no great quantity of buffalo and deer bones in the mounds, while an abundance of bones are found in the middens would lead one to the conclusion that the inhabitants of the mounds did more individual rather than group hunting, while the inhabitants of the middens engaged mostly in group hunting.

The crudeness and the marked degree of carelessness shown in the making of the artifacts found in the upper level of mounds "A" leads one to believe that the inhabitants of this level had made contact with white men, thereby procuring iron and steel to replace the flint artifacts. This contention cannot be substantiated by any known facts other than the finding of an occasional steel or iron projectile point upon the surface around the mound.

No evidences of agriculture were found in either the mounds or rock shelters.

This brief description of the mounds, shelters, middens, and the specimens from them is not intended to be in any sense a complete report on

this region, but is presented merely to draw attention to this particularly unexplored section of the State. There are many puzzling problems which can be solved only by much additional work. Unquestionably there is some mixture of both early and late cultures in these sites. But much more work must be done before any definite opinions can be formed.

Uvalde, Texas.

1. Similar to those found and described by University of Texas Bulletin No. 3327 of July 35, 1933.

**REPORT ON FOUR SHUMLA CAVE PACKETS**

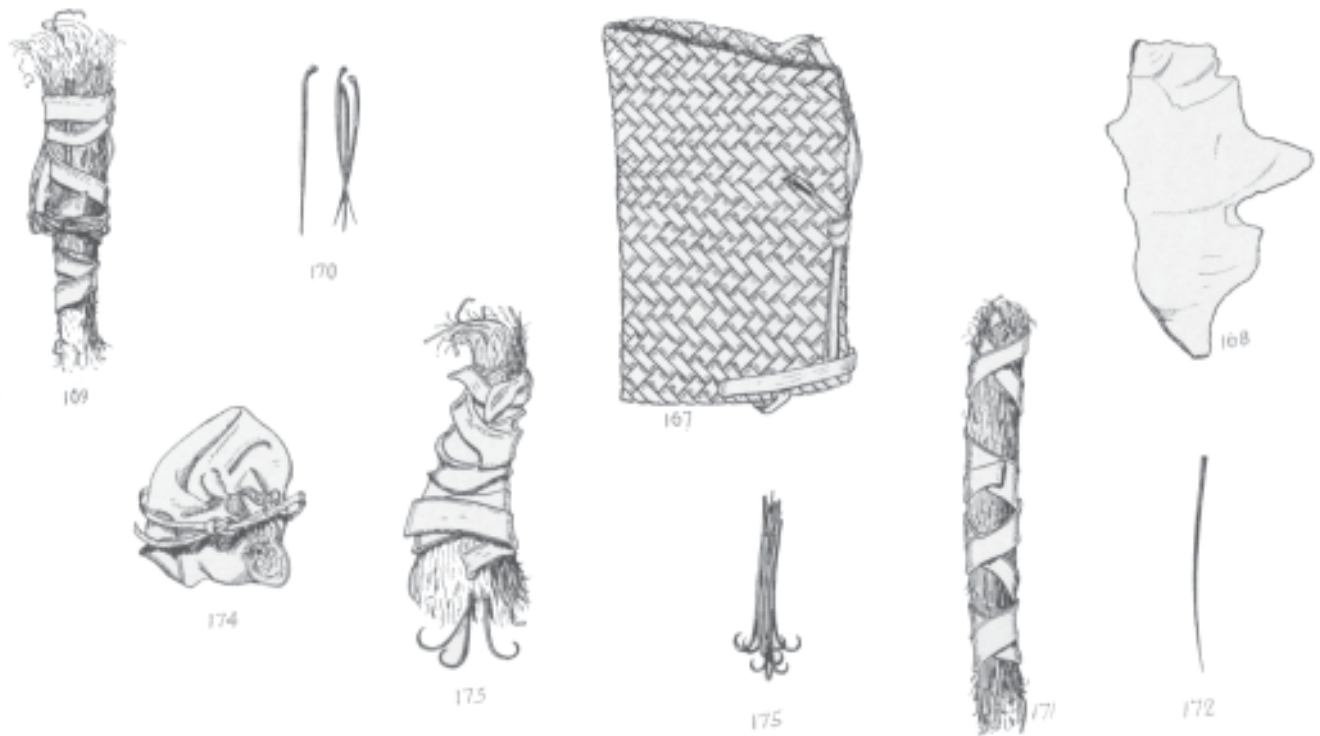
BY GEORGE C. MARTIN

In the "Archeological Exploration of the Shumla Caves" (Southwest Texas Archeological Society, Witte Museum, 1933, page 23) are mentioned four small packets which had not been opened and examined at the time that report was written. These have recently been investigated, opened as a courtesy to the Texas Archeological and Paleontological Society so that the contents could be described in an article in the "Bulletin." For the benefit of those readers to whom the original report is not available some little information concerning the finding of these specimens is given here.

Burial No. 9 in Cave No. 3 at Shumla was that of an adult male in partially mummified condition, the hair still attached to the head. The uppermost indications of burial were found at a depth of four feet, a bed of mingled twigs and vegetable fiber. Under this mass were two metates and three manos laid on a mat of checker weave. One mano and one metate had been used in pulverizing red paint\* and much of that substance still clung to them. The raising of the mat disclosed several other mortuary offerings, a fishing net, with bow and pole attached, two coiled baskets, and an envelope-shaped pouch of matting folded into shape and sewed with buckskin thongs. These items rested on a second mat below which was a folded robe of fur-string cloth, and below it was the matting shroud containing the body. Around the matting container, used to hold it in shape, were fur-cords, feather-cords, hair-cords, and cordage made of twisted netting. Within the shroud the body lay on its right side, flexed, and resting on a thick mat of fur-cord cloth and fiber-cord cloth. The envelope-shaped pouch was of unusual interest. It contained thirty objects, knives, seeds, paint, fibers prepared for use, bone implements, a gee-string, two scrapers, two necklaces, etc., etc. Among the items were four small packets of fiber and hide. The latter substance had become hard and brittle and the opening of the packages without great care would have meant their destruction.

In the basketry pouch before mentioned was found a (willed weave scabbard which has been pictured by J. Walker Davenport, Witte Museum staff artist, as Plate 17, No. 167, in the illustrations. The scabbard measures three inches in length and two and five-eighths inches in breadth. Within it was the flint flake knife pictured as No. 168, and the packet No. 169. The latter specimen is three and a half inches in length, and is slightly under a half inch in width. It is composed of fiber of the lechugilla (*Agave lechugilla*), the strands laid parallel, and bunched together forming a rough cylinder, this bound with a strip of animal skin supplemented with a similar band of lechugilla leaf. Its contents consisted of thorns of cactus, these averaging one and three-quarters inch in length, the end formerly attached to the plant being permitted to remain and thus forming the heads of the "pins" which these thorns probably were. Four of these have been removed from the packet No. 170. Apparently, this packet was a "pin cushion," and was not intended to be unwrapped when its contents were to be removed. The "pins" could be removed from one end and replaced after use.

The packet pictured as No. 171 is four and three-eighths inches in length and three-eighths of an inch in diameter. It was formed as was the first described specimen, but, its contents were packed into the fiber composing its body before the binding thong was placed on it. It was necessary to unwrap the thong before its contents could be reached. The binding was formed of untanned hide a foot in length and about a quarter of an inch in width. Its ends were anchored by being thrust under formerly laid coils, not tied. This packet also contained cactus thorns, but of a variety different from those described as being in the first described bundle. The thorns measure approximately two and a quarter inches in length. See Figure No. 172. Stain still adhering to the points suggest that they were used in tattooing, or for minor surgical work.



## PLATE 16.

Nos. 169 to 172 show a packet and objects which it contained found in Shumla Cave. (See text).

The packet depicted as No. 173 was formed much as were the two described above. It is three and a quarter inches in length and has an irregular width varying under and over a half inch. In the forming of this bundle the fibers were laid parallel, the contents were placed among the strands, then one end of the fiber mass folded back upon itself and the contained materials. It was then wrapped with a half inch wide strip of untanned hide. The contents consisted of cactus thorns which had been artificially recurved to serve as fishhooks, No. 175. Twelve have been removed from the package and it apparently contains as many more. The hide wrapping is stiff and brittle, and the removal of the entire contents would necessitate the destruction of the container. The identification of the recurved

thorns as fishhooks is positive. Other specimens found at Shumla still retain the fiber wrappings with which they were attached to line or leader, and one cluster of hooks is tied in the form of a lure with fiber "fly" attached.

The fourth packet is pictured as No. 174. It consists of a small sheet of animal hide, the fur still on it. Originally the skin was four inches or more square, but has shrunk and hardened until it is brittle. Its contents proved to be a vegetable wool, possibly from the milkweed. The wool had been laid on the furry side of the skin which had then been bundled up around it and tied with a narrow strip of lechugilla leaf. A square or reef knot was used.

## REVIEWS AND NOTES

The University of Texas Bulletin, No. 3537, Oct. 1, 1935, Tales that Dead Men Tell by J. E. Pearce, Professor of Anthropology and Director of Research in Texas Archeology, Bureau of Research in the Social Sciences Study No. 14, Anthropological Papers, Vol. 1, No. 1, Published by The University of Texas, Austin, Texas. Contains 118 pages of text, 14 pages of photographic plates, and two tables illustrating geological and cultural time periods. Distributed free.

This work by Dr. Pearce briefly deals with many of the diverse fields interwoven with the study of archeology, such as geology, organic evolution, sociology, ethnology and psychology.

Dr. Pearce has produced a very readable book from which the non-professional archeologist can get a short somewhat connected idea of human progress and evolution, and some valuable suggestions as to the reasons why such civilizations as those of China reached a certain stage, and then "fossilized" into a certain unchangeable pattern, a "conditioning" of the mind against all new ideas or change as either wicked or dangerous, which operates to "freeze" a civilization into whatever pattern seemed desirable in the beginning.

He described the Peruvian Utopia where all men were cared for, worked for, and had the most minute details of their lives regulated by the Inca overlords, in short were the slaves of the Government. It would have been sacrilegious, and indeed fatal, to oppose these Gods on earth, these children of the sun. By familiarity with archeological research the enlightened man can see that "new deals" are not new, but have been tried many times in the past, and he can see from whence certain governmental bedlams derived their "plans" and the abyss toward which they stagger.

To those who can see no practical side to archeology Dr. Pearce's thesis proves it of value in explaining all of man's inherent urges, desires, and

aspirations. We are the products of all the racial experiences of the past. He shows the evil effects of false beliefs and superstitions in retarding the progress of civilization. By a study of archeology man learns why he is as he is. Some of Dr. Pearce's observations on the effects of superstitions doubtless will offend some of the Texas brands of Whirling Dervishes. The book will make one think, and to many that is an unforgivable offense. When we knock on the door of an empty house all we get is an empty sound, but when one knocks at the door of an empty mind all of the bats of prejudice and hate fly out in one's face.

C. N. R.

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During the past year The Society for American Archeology has been organized with officers as follows: President, Arthur C. Parker, Rochester, N. Y.; Vice-President, M. R. Harrington, Los Angeles, California; Secretary-Treasurer, Carl E. Guthe, University of Michigan, Ann Arbor, Michigan; Editor, W. C. McKern, Milwaukee, Wisconsin.

The organization of this national society for archeology is something which has been needed for a long time; a quarterly such as The American Anthropologist covers too large a field to be able to give as much space to archeological discoveries as is desirable in a nation so large as ours. The first number of this quarterly, Vol. 1, No. 1, of American Antiquity, July, 1935, has been issued. This volume has 79 pages of text, 9 photographic plates, and 1 map. It contains one long article on "Bluff Mounds of Jersey County, Illinois," by P. F. Titterington, editorials. Field Reports 1934, Notes and News, and book reviews. The very able official family insures the success of this publication. We hope that Texas archeologists give "The Society for American Archeology" their support.

C. N. R.



Field and Laboratory, Contributions from the Science Department of Southern Methodist University, Dallas, Texas.

Volume II, Number 2, April 1934 (33 pages, 8 line drawings). This publication contains seven articles by faculty members of Southern Methodist University on biological and physical science subjects. While there are neither archeological nor paleontological articles in this volume we welcome it as a worthy addition to a growing list of scientific publications in the State.

Volume III, Number 1, November 1934 (33 pages, 2 plates, 6 line drawings). This number contains nine articles. Dr. Ellis W. Shuler's "Collecting Fossil Elephants at Dallas, Texas" is reprinted from Volume 6 of The Texas Archeological and Paleontological Society.

OTTO O. WATTS.

A Folsom Complex, Preliminary Report on Investigations at The Lindenmier Site in Northern Colorado, Smithsonian Miscellaneous Collections, Vol. 94, No. 4, by Frank H. H. Roberts, Jr. Archeologist. Bureau of American Ethnology, published by The Smithsonian Institution, Washington, D. C., June 20, 1935.

The Roberts report contains 35 pages of text, and 16 pages of plates. This description of a buried Folsom campsite is much better written and edited than most archeological publications and its photographic plates are unusually clear and sharp. The information which it contains is a much needed contribution to the literature on Folsom artifacts. However its claim to discovery of the first Folsom campsite is a mistake. (See Vol. 2, 1930 Bulletin Texas Arch. and Pal. Society, p. p. 45, 46 and plate 10, figs. 1 to 11.) All of the artifacts shown in this report with the possible exception of the channel flakes shown on plate 4 can be duplicated from stone artifacts found in two local Folsom sites. However the Lindenmier site probably contains the largest collection of unmixed culture Folsom artifacts yet found and as such is extremely

interesting, as well as for its confirmation of the fact that the typical small scrapers, graters and bevel edged tools, found here and elsewhere, belong with the same culture as the channeled points which have long been found together in the same sites. To one who has closely studied the flint chipping of Folsom points, it is hard to see how any one could fail to agree with Roberts that the cross flaking was done before the longitudinal channels were taken out. Also there can be no question that his statements as to the unreliability of such evidences, as were obtained in Howard's, Clovis, New Mexico, sand "blow outs," are correct. In sand blow-outs anything thrown into them during the last twenty thousand years is very likely to find a common level after the last sand storm and it would be possible to find a tomato can on the tip of a mammoth's tusk under such conditions. The statement, evidently quoted from Howard, which reads as follows, is not correct. "Present evidence is that the true Folsom is restricted to the strip of terrain known as the High Plains, extending along the eastern slopes of the Rockies. The other form not only occurs in the High Plains but is widely distributed across the Eastern portion of the United States." Both forms have been found in the same campsite near Abilene referred to above and it is situated 120 miles east of the eastern edge of the cap rock of the High Plains, and at least 300 miles east of the nearest point of the Rockies. Also other Folsom points have been found 150 miles southeast of Abilene.

This publication contains pictures of the Lindenmier site, a page plate of the channel flakes removed by the flint artisans in making the channels of Folsom points, four pages of pictures of Folsom points, showing both faces of 26 Folsom points and knives, shown actual size.

It also contains two pages of "snub nosed" scrapers showing end, side and back views, natural size, of 12 scrapers which appear to be almost exact duplicates in size, shape and chipping of 266 scrapers found by the writer in a site near Abilene illustrated in plates 8, 9 and 10 (P. scraper C.) of this Bulletin.

There is one page of pictures of side scrapers, plate 11, which includes figure b. which is described in the text as a bevel edged tool; this has the appearance of one end of a double pointed, beveled four edged knife, of a type found abundantly near Abilene in another Folsom site.

Other artifacts shown are one page of rough flake scrapers, one page of flake graters, one page of rough-flake knives, one page of leaf blades, turtlebacks and choppers, and one page which shows fragments of smoothed sandstone some of which greatly resemble pieces of the shallow sandstone metates of the Abilene region. According to Roberts one sandstone fragment showed traces of red paint; this is not surprising since one channeled point was found by this writer at the huge prehistoric red oxide of iron paint mine near Abilene.

C.N.R.

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Southwest Museum Papers, Number Nine, "The Pinto Basin Site," by Elizabeth W. Crozier Campbell and William H. Campbell. Published by Southwest Museum, Highland Park, Los Angeles, California, March 1935. Contains 51 pages text and 17 plates. Price fifty cents.

This interesting volume deals with an area of desert which at some period in the past has been inhabited by man but like some of the old campsites in Texas now has no water supply. This area has an additional interest for Texans in that the artifacts shown in its plates apparently are much closer in types to the flints found in ancient dry sites near Abilene than are the flints found in other portions of Texas. The points shown on plate 12 appear (in so far as one can determine from pictures) to be good depictions of "Abilene Points" found by the reviewer in old dry campsites near Abilene. However one cannot determine from the pictures whether these similar shaped leaf blades also have the typical thickness, and the bases thinned on one face by the striking off of a large flake from the base tip towards the center of the blade. Evidently this was done to make possible the hafting of a blade otherwise too thick, There seems to be a similarity

to the "Abilene Points" in both the outlines and the rough flakes of the blades. Flints of the "Abilene Points" above described occur here buried 24 1-2 feet deep on Elm Creek, are deeply buried in gravel pits on Dead Man Creek, and are also found in an old camp site on a small, now dry branch of Elm Creek where a carved petrified Pleistocene horse bone was found by the reviewer in 1930. (See Vol. 6, 1934 Bulletin Texas Arch. and Pal. Society Bulletin, plate 18, No. 100).

The "Pinto Type Points" are of a projectile type common over a considerable area of Texas extending from the Abilene region east to the region of Waco. The manos and metates shown on plate 7 are common Texas types. The large rough choppers shown on plate 8 are found commonly in the Abilene region and are usually of quartzite but sometimes of flint. The artifacts shown on plates 9, 10, 11 and 14 may all be duplicated from Abilene sites. A point very similar in shape to fig. m., plate 14 was found by the reviewer in a deep gully near Abilene where it was exposed in a layer of old gravel in the bottom. The gully is now cutting into this old gravel bed. This type is only found occasionally, as is also the round scraper fig. h. in plate 14, but usually under conditions which suggest age of deposit.

It appears that the Campbells have found campsite materials strewn along the banks of a now dry old river bed for a distance of five or six miles; this dry wash has only had water in it three times in the past three years and that only immediately after rains. There is probably not more than 3 or 4 inches of rain yearly in that area and it is evident that the inhabitation of the region occurred when a regular supply of water existed in the wash which probably dates back to close to the end of the Glacial period. Ancient fossil camel and horse bones found close below and near to artifacts of man, are found broken in the same manner man used in fracturing bones to obtain the marrow. The writer states that "thus far no association of human artifacts and fossil bones can be proved, as the fossil bones, mostly camel and horse, appear to be weathering from a level somewhat lower than the campsites. We are not convinced, however, that all of these bones necessarily antedate the human occupation."

The bones referred to and shown on plate 5 certainly have been fractured by exactly the same method as those excavated by the reviewer from a campsite buried eight feet deep on the Myatt covered site. (See Vol. 2, 1930, Bulletin Texas Arch. and Pal. Society, plate 11, figs. 1 and 2). The reviewer has always assumed that only man's efforts produced this type of fractured bones.

C. N. R.

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Bulletin 48, Number 5, West Texas Historical and Scientific Society, published quarterly at the Sul Ross State Teachers College, Alpine, Texas, December 1, 1933. (77 pages, 5 plates).

The fifth publication of this Society contains in addition to its roll of officers one geological, one archeological, and four historical articles. Clifford B. Casey in "The Trans-Pecos in Texas History" relates the recent archeological evidences of Big Bend culture as prehistory to his development of the history of that section of the State. Charles Kelley gives a "Report on Archeological Field Work in the Madera Valley Area" in which he classifies sixty-seven Indian sites in the valley as hunter sites, sotol or mescal pits, Toyah Creek sites, and unstudied rock shelter sites. He reports pictographs, boat shaped mortar holes, large and small hearths, burials, sotol pits and other artifacts similar to neighboring regions. Pottery is rarely found. Indications are of only sporadic occupation by Mescalero Apache.

O.O.W.

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#### *A Mistake*

During the years of 1929 and 1930 the Editor discovered a series of deeply buried stratified campsites in the Abilene region buried at depths of 3, 4, 6, 8, 15, 18, 24 1-2, 27 and 30 feet below the soil surface.

The first contained two primitive skeletons deeply buried in a stratified campsite. This was reported in an article in Scientific American, May 1929, entitled "New Evidence of Ancient Man in

America." Deeper sites were reported in Daily Science News Bulletin, Dec. 10, 1929. "News of Ancient Man Reported from Texas," Science News-Letter, Dec. 21, 1929. "Traces of Ancient Man Reported," a Pan American Union publication entitled Summary of Archeological Work in The Americas. During 1929 and 1930, reported these finds p. p. 21 and 40. The Museum Journal, University of Pennsylvania, September-December 1929, p. p. 321-322-323. American Anthropologist, April 1930, p. p. 368-369-370. American Anthropologist, July-September 1931, p. p. 481-482. Bulletin (2) Texas Arch. and Pal. Society, September 1930, p. p. 48, 49, 50, 51, and 52, plates 11, 14 and 15.

Various local persons interested in archeology, Dr. J. Richard Spann, Dr. Otto O. Watts, Ernest W. Wilson, E. B. Sayles, and others, in the order in which they are here named helped the finder excavate in these sites, but laid no claim to their discovery.

In the April 1935 issue of The Geographical Review published by the American Geographical Society of New York appeared an article by Dr. Ernst Antevs entitled "The Spread of Aboriginal Man to North America" which among other things of interest contained this concluding passage. "Surely old and significant finds of artifacts and hearths have been made by Mr. E. B. Sayles and Dr. Cyrus N. Ray near Abilene, Texas, in river terraces that record several distinct climatic and physiographic changes in the region since the arrival of man."

The above statement by Mr. Antevs is incorrect, as is shown by the numerous citations above; these sites were discovered by Dr. Cyrus N. Ray without the assistance of any other person. Of course other archeologists in Texas found other sites at similar levels at various places in Texas after the original sites were discovered and the results published. In so far as the writer knows Mr. Sayles never has made any such claim.

This mistake illustrates the fact that outside scientists cannot be too careful in the matter of giving credit for discoveries in fields where they

are unfamiliar with the facts, when a mistake of this character could be made on a matter so abundantly documented as the above mentioned discoveries.

C. N. R.

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#### *The Pan American Union Summary*

At intervals of several years The Pan American Union, which is "the international organization maintained at Washington, D. C., by the 21 American Republics," issues summaries of all the archeological work done in North, Central, and South America. In past issues work of members of The Texas Arch. and Pal. Society has been listed. Recently the Pan American Union has issued American Archeology series No. 7, Summary of Archeological Work in the Americas: 1931-1932-1933.

This book devotes 77 pages of text with illustrations to a summary of research in all of North and South America. Considerable space was devoted to the work of members of this Society in various sections of Texas such as the Abilene, Amarillo, Big Bend and East Texas archeological regions. Texas Institutions mentioned as doing work were: West Texas Historical and Scientific Society, Witte Memorial Museum, Texas Technological College, University of Texas, Texas Archeological and Paleontological Society. A little more than two pages was devoted to Texas archeological research. The Pan American Union publishes its bulletins in the English, Spanish and Portuguese languages.

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#### EDITORIALS

##### *Indian Flint Saws*

In 1929 the writer took some Texas flint artifacts to a Convention from the then unknown Abilene archeological area. Among other things was a patinated flint knife with a serrated edge which had been obtained from the man who found it near Colorado, Texas, and another was an old white patinated small flint disk saw found by a local associate. Two nationally known archeologists at

that time assured the writer that both flints were forgeries, after asking whether or not the writer found them. One of them assured the writer that the principle of the saw was utterly unknown to the American Indian and that some white man made them. As the writer had found neither of them he could not contradict such statements although he believed that the gentlemen were badly mistaken. Not more than thirty days after his return the writer found an almost exact duplicate of the serrated flint disk condemned by the professionals and it also was covered with white patina. While not common, such disks are occasionally found in the Abilene region; however any one who has either collected near Colorado, Texas, or examined local collections in that area, can testify to the fact that serrated knives are often found in that region.

Serrated arrow heads of several different culture types are often found in Texas. The deeply serrated points seem to be typical of a region extending from sixty miles east of Abilene, to more than one hundred miles west of that place. The minutely serrated spruce tree shaped pottery site arrow point is found over a much larger area. One of the deeply serrated type of arrow heads was found by the writer beside a long headed skeleton of primitive type which was exposed in a sand blow out. It is quite evident that no white man made that arrow head. Its chalk white patina was so thick, and so altered, that it was cracking and scaling off in chalky flakes. The natural color of most of the local flint is dark blue-gray, and it is also translucent.

It would have had to have been an unusually dull wilted tribe of Indians which would have continued to make saw edged arrow heads and never have learned to saw wood, bone or shell with them, or to have applied the same idea to the construction of knives. Even if it is true that Indians elsewhere in America did not know the principle of the saw, there is no shadow of a doubt that Texas Indians of the Abilene region used flint saws during a very long period of time.

The writer would recommend that archeologists study intensively the patination, gloss, and the wearing away of fracture marks, which it is probable requires many millenniums of time to produce,

before questioning the authenticity of artifacts which may have been made of materials, or of forms unfamiliar to the scientists. The writer believes it impossible to duplicate patina, gloss and aged fracture marks in such manner as to hoax those who have really studied such things. It is doubtless a different matter in the case of unpatinated flints.

In 1929 another gentleman also examined the same knife-saw carefully without comment. Several years later the writer was astonished to read in the *American Anthropologist* the following passage: "The tooth edged knife (pl. 19 a, b) is unique so far as we know. No similar one is known to the following four important museums in America: American Museum of Natural History, New York City; Field Museum of Natural History, Chicago; Museum of Anthropology, University of California, Berkeley; National Museum of Canada, Ottawa. No references to a similar type of knife have been found in publications at hand. We hope there are other knives of the same type, known to readers of the *American Anthropologist*, which may assist in identification." We hereby refer the writer of that article to Vol. 1, 1929 *Bulletin of Texas Archeological and Paleontological Society*, plate 1, lower panel, fig. 2, which shows a flint saw of somewhat similar shape.

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#### *Folsom Sites*

The *Smithsonian Bulletin* by Roberts reviewed elsewhere brings up many questions of interest. One of the two main local channeled point sites is discussed as pottery site 17, elsewhere in this *Bulletin*. That site bears little evidence of age. However there is another local site which shows considerable signs of age. It is in the deeply eroded banks of a small dry branch between two mountains. Embedded in a bank at a depth of eight feet from the original surface the writer found a flake knife. Embedded in another bank a generalized channeled point. Other typical points of that type were found on its deeply eroded surfaces as well as one of the beautifully chipped true Folsom Points.

This is only part of a larger deeply gullied area in which many flint artifacts of The Clear Fork

Culture Complex were found. It would appear that flake knives, graver points and spokeshaves are common to both cultures, or are so mixed as to be hard to separate. At any rate all seem to be equally patinated. The mano and metate have not thus far been found in that eroded area, and the later forms of end scrapers have been found but rarely, and then only one in a place. Nor have the small graver-scrapers of site 17, nor Roberts similar type of end scrapers been found; of the latter type only one scraper has been found in many years search of this area. The small thin arrow points of site 17 are not found in the camp sites of this area. Nearly all of the artifacts found in the area are heavily patinated and nearly all of the projectile points are large enough for either dart or spear points.

The forms of projectile points may be separated into many distinct types which apparently are not at all related. The erosion of the area probably has exposed several ancient culture types on a common level. The mass of the evidence would indicate that all probably date from a period of greater rainfall than exists in the region at the present time. Whether the Folsom Criteria are the older, or those of the Clear Fork, the writer cannot definitely determine, but inclines to the belief that the latter are the oldest.

During the summer of 1935 the writer found four teeth and the decayed bones of a mammoth's skeleton embedded in the same reddish-tan light wind blown soil in this site. The teeth were excavated with the assistance of Dr. Otto O. Watts of Hardin-Simmons University and Dr. E. H. Sellards of Texas University. Apparently the flints in this site erode out of the same wind blown deposit, but whether they extend below or as low in the deposit as the mammoth bones we could not determine from the small amount of digging done thus far in the site.

From the finds here and elsewhere the writer takes no stock in the theory that stemmed and shouldered points were not used long before the Folsom Points in America. Locally more evidence exists of their age than of Folsom Points. In this site several broad based, shouldered, broad, thick, roughly fractured points were found which also had central channels beginning below one shoulder and

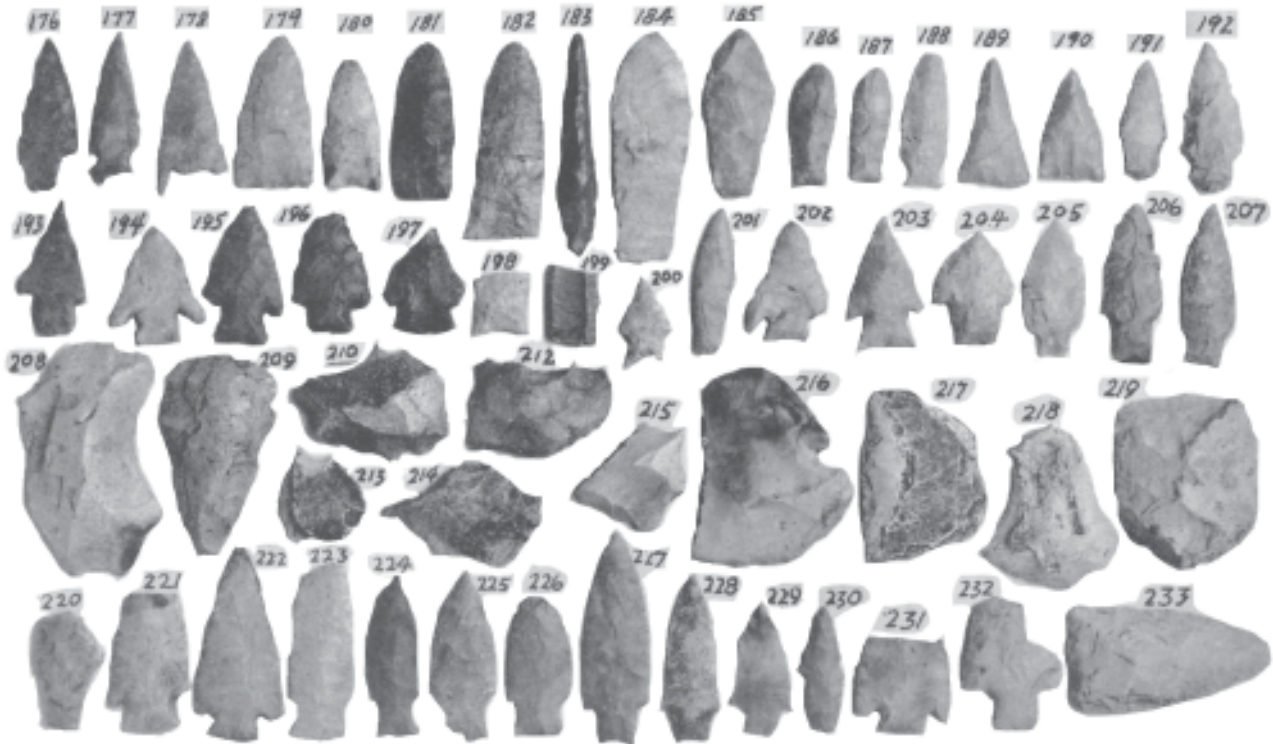


PLATE 17.

The artifacts shown on this plate came from an eroded area where both the large generalized Folsom type, and the smaller, finer worked, true Folsom points have been found. Nos. 179, 180 and 182, are of the generalized type and No. 199, is of the true Folsom type. Nos. 195, 196 and 197 are broad based shouldered points, from this site, which have channels extending from beneath the shoulders diagonally across the faces of the blades to end on the opposite cutting edges near the points. This same technique was used in two square based points, Nos. 180 and 182. The long (3 3-4 inches) flint drill, No. 183, is the only one of that type found in this region. The nearest to it in type are two much smaller drills with rounded, thickened bases from Pottery Site 17. Nos. 208, and 218 are spokeshaves. No. 209 is a typical planer of a type which is usually found in this eroded area with No. 233; both are part of the "Clear Fork Culture Complex" which probably belongs somewhere near to, or is older than the Folsom Criteria. Nos. 210, 212, 213, 214 and 215, are graters. No. 216, a side scraper, was found in 1929 embedded in a vertical bank at a depth of 8 feet below the soil surface, across the dry creek branch from where a mammoth's skeleton was exposed by erosion in the same chocolate colored wind blown deposit during the summer of 1935. Nos. 217, and 219, are side scrapers of an ancient type. The bottom row are dart or spear heads of ancient types. Nos. 223, 224, 225, and 226 have a peculiar form of bevelled base; this type always erodes from deeply buried sites. Nos. 227, 228 and 229 are quite thin and straight edged; No. 227 is 3 1-2 inches in length, and 1 2-16 inches in width. Nos. 195, 196 and 197 are thick, roughly fractured, shouldered and channeled; others of this type with the exception of not being channeled, have been found deep in gravel deposits in this region and under conditions elsewhere which indicate that they are of a very old type. No. 180 was found embedded in the side of a gully in the wind blown deposit from which these artifacts erode; it is channeled on both faces, and is covered with a thick white patina. There is a rather uniform white coating of patina on nearly all of the artifacts shown on this page. Only a few have only progressed to the gray stage of patination.

extending down the centers to near the points. Other similar points, not channeled, have been found deep in gravel deposits on other creeks near Abilene, and the writer has found them in the loose gravel immediately below the deeply buried Gibson site, where it is probable that they had eroded from those superimposed strata. (See plate 15, Vol. 2, 1930 Bulletin Texas Arch. and Pal. Society). Typical artifacts of this deeply eroded area are shown in plate 17 of this issue.

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#### *In Appreciation*

We wish to herewith express our thanks for prompt identification of specimens and courteous co-operation to the University of Michigan authorities, Dr. James E. Griffin and Frederick R. Matson; to Dr. Carl E. Guthe of The Committee on State Archeological Surveys of The National Research Council; to Dr. Ernest A. Hooten of Harvard; to Dr. Warren K. Moorehead of Phillips Academy, Andover, for advice and valuable literature; and especially to Mr. Albert G. Ingalls, Associate Editor of The Scientific American Magazine, for a mass of information and good advice cheerfully given, as well as much valuable literature made available to the Editor of this Bulletin without cost. This particular issue of The Bulletin is indebted to Dr. H. P. Mera of The Laboratory of Anthropology, Santa Fe, New Mexico, for his kindness and very unusual promptness in making identifications of materials sent to him. We wish also to acknowledge with thanks the receipt of a collection of marked New Mexican Pueblo pot sherds from J. Charles Kelly. The assistance of such scientists has added many facts to the Bulletin and materially reduced the editorial burden.

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#### *On Artifact Forgers*

In the writer's opinion some of the most contemptible characters infesting the good earth are those who forge antique furniture, paintings or any artifact of past ages and palm their productions off on the unwary as genuine products of the past.

The writer knows of certain private collectors who have bought beautifully chipped, suspiciously long spear, arrow and dart points and drills which apparently are either of a beautiful ruby red, or of an equally fine shade of green glass. The sellers of these must enjoin secrecy on the buyers as the only information obtainable is that the alleged "finder" found them in "graves" high up in the western mountains. The buyer is led to believe that they are of some rare form of obsidian or some other mysterious red stone.

The source of these glass artifacts, supposedly made from the colored glass of switch lights, should be ascertained and their originator should be prosecuted. If there is now no adequate law on the books, in the various states, which will stop such counterfeiting, or at least the sale, or offer to sell, or transportation of fraudulent antiques, such laws should be enacted. The writer knows of one farmer in this region who has practiced flint chipping until he is now able to duplicate any of the small delicate Indian arrow heads in flint or any color of bottle glass. He showed the writer arrow points of one-half to one inch in length in amber, blue and green bottle glass and one made from the milk colored glass of a Mason fruit jar top. His work is perfect, but in so far as the writer knows he has not attempted to deceive anyone thereby. However, while his intentions are doubtless innocent, when once these arrow heads leave his possession they are then likely to fall into the hands of unscrupulous antique store proprietors who may invent a "bear story" to fit them.

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#### *Some Unusual Cremated Burials*

Until the year 1935 the writer has had to rely entirely on his own funds with which to finance excavation, and on week end periods for the time to do the work. This year a contribution toward the formation of an "Excavation Fund" was made by J. L. Bridwell who is interested in Texas scientific research. Part of this fund was used to make three trips to a site in Mitchell County, 105 miles west of Abilene.

Here a stone grave situated on a high hill top above a campsite containing many boat shaped mortar holes (the site previously described in Vol. 2, 1930 Bulletin Texas Arch. and Pal. Society, p. p. 52 to 58, plate 13) was excavated, and in it were found five stone pendants, one shell pendant, one shell bead, one stone problematical object, probably a head band ornament, three large dart points, and two polished gray-green stones shaped like a portion of the moon when only about a third is visible on the horizon. The rounded edges of each were notched. A stone ring was also found. The grave had been partially cut into bed rock like another one excavated on the banks of the Colorado River in 1932, described in Vol. 4, 1932 Bulletin of this Society, p. p. 67 to 69, plate 14. The body had been cremated with all of its ornaments. Two teeth indicated it was that of a young child. There was

little left but a few very small charred bone fragments. Considerable broken shell fragments indicated that the fire had probably destroyed many shell ornaments.

On a later trip excavation in a small cave on the south side of the same mountain showed that the bodies of two adults had been flexed, and then cremated. However the fire had not been so hot and the bones, with the exception of the skulls, were not greatly damaged, and were still partly in flexed position. Four deeply serrated, small arrow heads were found with the bones. No ornaments similar to these have previously been found in the region with the exception of an Abalone shell pendant found on the same hill by J. H. Lowry when the writer first visited the site in 1930.



SECRETARY AND TREASURER'S REPORT OF THE TEXAS  
ARCHEOLOGICAL AND PALEONTOLOGICAL  
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