

SMITHSONIAN MISCELLANEOUS COLLECTIONS

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KANSAS AND THEIR POSSIBLE BEARING
ON THE LOCATION OF QUIVIRA

(WITH 10 PLATES)

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Assistant Curator, Division of Archeology,
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CITY OF WASHINGTON
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The archeological survey of Kansas begun by the United States National Museum in 1937, and continued each summer thereafter under the writer's direction, in 1940 was carried into the Arkansas River basin in the central and southern parts of the State. Archeological remains in this region had previously been accorded virtually no attention by trained investigators, though the presence of pottery-bearing sites was reported as long ago as 1873 (Mudge, 1896, p. 70). The Arkansas River is one of the largest streams of the central Great Plains, and its lower reaches in Oklahoma and Arkansas were formerly the seat of several highly advanced native civilizations. It was hoped that some of the village sites in its drainage basin in central Kansas might provide clues toward a cross dating of Plains cultures with lower Mississippi Valley archeological horizons. Added interest derived from the fact that certain large village sites in Rice and McPherson Counties have yielded Puebloan sherds and chain-mail fragments, and have been identified by local historians as the site of Coronado's province of Quivira.

Within the brief limits of this paper, I do not propose to detail either the archeological findings or the much-debated records of the various early Spanish exploring expeditions which may or may not have reached the area. With the topography of eastern New Mexico and western Texas I am not sufficiently familiar to be able to evaluate fully the Coronado and Oñate documents. Moreover, as regards the route of Coronado at least there is already a fairly extensive literature to which the interested reader is referred.¹ Indeed, this particular subject has been argued so often in the past that were it not for certain new considerations raised by recent field researches

¹ See especially Simpson, 1871; Winship, 1896; Hodge, *in* Brower, 1899; Baskett, 1912; Shine, 1916; Jones, 1929 and 1937.

there would be scant reason for reopening a problem toward whose ultimate solution I can contribute at present little else than archeological data.



FIG. 1.—Map showing probable location of the province of Quivira during the sixteenth and seventeenth centuries. Solid circles indicate sites visited or partially excavated by the United States National Museum in 1940; not shown are numerous others reportedly of the same archeological horizon but as yet unchecked. Numbered sites include: 1, Malone site; 2, Tobias site; 3, Thompson site; 4, Udden site on Paint Creek; 5, Arkansas City Country Club site. All have yielded fragments of Rio Grande glaze-paint pottery; from 3 and 4 were taken chain-mail fragments.

The sites with which this paper primarily deals are situated (fig. 1) on Cow Creek and Little Arkansas River, in Rice County; on and between Sharps and Paint Creeks draining into Smoky Hill River in McPherson County; on Cottonwood River in Marion County; and on

the Walnut River in Butler and Cowley Counties. I know of none on the immediate banks of the Arkansas itself, which are for the most part low and sandy and subject to devastating floods; or in the Neosho, Verdigris, and Fall River drainages of southeastern Kansas, which are still largely unexplored archeologically.

Only a few of these sites have been investigated as yet, and none exhaustively. Excavations were carried on by the National Museum at the Malone site on Cow Creek 4 miles west of Lyons, at the Tobias and Thompson sites about 5 miles southeast of Geneseo on the Little Arkansas, and on three sites lying northeast and east of Arkansas City on the lower Walnut. Short published reports are available on the Udden site on Paint Creek (Udden, 1900; Wedel, 1935), and I have seen a sample of the pottery and other materials from the nearby Swenson site on Sharps Creek. Surface collections only are available for other village sites southeast of Marion, south of Augusta, southwest of Larned, and in the valley of Grouse Creek east of Arkansas City. As far as my observations go, the materials from all these sites and localities are very similar, and there can be no reasonable doubt that all the communities indicated had essentially the same economic basis and material culture status.

These sites are, or prior to modern farming activities were, generally marked by low mounds on and between which are to be found an abundance and variety of artifacts. Contrary to local belief the mounds do not mark the former location of houses; there is no evidence in or under them of post molds, house floors, or fire pits. They consist of animal bones, ashes, broken pottery and other artifacts, and soil, and are in reality refuse dumps. Among them are to be found innumerable caches or storage pits, some of which attain a depth, and a diameter, of 8 or 9 feet. On the larger sites, as in Rice and McPherson Counties, these pits occur literally by the hundreds. From the ashy soil within them have been taken quantities of pottery fragments, chipped-flint artifacts, worked and unworked animal bones, charred maize, beans, wild-plum pits, and other village refuse. Persistent search has disclosed no evidence of house units, and it seems quite certain that the semisubterranean earth-covered lodge used by the Pawnee in northern Kansas and Nebraska was not characteristic of the peoples under consideration. At the same time, the numerous cache pits, refuse deposits, pottery remains, charred maize, and other materials argue for a fairly sedentary mode of life. For this, such easily transported skin structures as the tipi of the Plains hunting tribes would have been poorly adapted. I am of the opinion that an unexcavated semipermanent structure consisting of perishable ma-

terials is to be inferred. The familiar grass house of the Wichita (pl. 1) and their southern Caddoan kindred would probably fulfill these requirements; and, if erected on the ground surface rather than in a dug pit, such a dwelling would leave few or no surface traces a few years after abandonment.

On at least four village sites in Rice and McPherson Counties there are large ditched circles with mounded centers. The circles average about 90 to 120 feet in diameter, and are sometimes discontinuous. They have been locally termed "council-circles"; no village site has more than one. Excavations by the National Museum within such a circle at the Tobias site disclosed curving dug basins (Wedel, 1941, fig. 71) with post molds, hearths, successive floor levels, and quantities of burnt wattle-impressed clay. From one basin came disarticulated human bones. Some sort of specialized building, with a partially or wholly clay-daubed superstructure, is indicated. Dr. J. R. Swanton in conversation has suggested that these remains may mark the site of a temple or ritual center analogous to the community centers of the Caddo villages.

The items characteristic of the central Kansas sites may be briefly inventoried. Some are to be found among other established archaeological horizons to the north and northeast; others are of more restricted distribution, and may prove diagnostic of the local complex. Since a detailed site-by-site analysis has not yet been made, I shall not attempt here to determine which elements are locally diagnostic.

The subsistence economy included horticulture, as well as hunting and gathering. Domestic plants included at least maize and beans. Hoes made from bison scapulae (pl. 6, *b*) were plentiful; the muller and mealing slab were extensively used. The principal game animal was undoubtedly the bison, but expert examination of the large quantities of bone refuse recovered will probably indicate the use of many other species. The bow and arrow may be inferred from the hundreds of small well-made triangular notched and unnotched stone points (pl. 5, *e, f*). Sturdy bone projectile points, usually with well-defined stems, are common (pl. 7, *d-f*); the socketed conical antler-tip point (pl. 7, *g*) was also known. All the sites yield grooved mauls (pl. 3 *c*) and great numbers of the familiar planoconvex end scrapers (pl. 5, *d*) as well as knives of various forms; the latter include the diamond-shaped and other beveled and unbeveled types (pl. 5, *a-c*). For use in skin working there are chipped drill points of straight and expanded-base types (pl. 5, *g-i*), many bone awls (pl. 7, *a-c*) and eyed needles (pl. 7, *h, i*), and wedge-shaped paint "brushes" made of can-

cellous bone (pl. 7, *k*). Pierced mussel shells (pl. 10, *d, c*) used as pendants, flat disk beads and perforated gorgets of shell (pl. 10, *b, c*), tubular bird-bone beads (pl. 7, *j, l, n*), hematite, and, very rarely, glass and turquoise beads (pl. 9, *a*) served for adorning the person or costume. Pipes are fairly common (pl. 8); they include typically an L-shaped form, and less commonly a projecting-stem variety, both made of fine-grained red sandstone often mistaken for catlinite. Tubular specimens, including one of soapstone (pl. 8, *f*) have been found at the Tobias site. Other items include mussel-shell spoons or scrapers (pl. 10, *f*), transversely scored ribs (pl. 6, *d*), large chipped stone blades (pl. 9, *b*), imperforate pottery disks (pl. 4, *f*), and spheroidal objects of cancellous bone. A coiled basket with single rod foundation (pl. 3, *b*) was uncovered during the work of the National Museum at the Tobias site.

Broken pottery is plentiful at most sites, and excavation has brought to light several restorable vessels. In Rice and McPherson Counties most of the ware is grit-tempered; on the Cowley County sites shell tempering is relatively more abundant and possibly predominant. With some exceptions the pottery is of mediocre quality, and looks like the result of a decadent industry. The usual form is a jar from 8 to 12 inches tall with vertical rim, rounding shoulder, subconical underbody, and flat or round-pointed base (pls. 2; 3, *a*). Commonly, two handles (pls. 2, *a*; 4 *a, b, g-i*) connect the neck and upperbody, these usually being attached by riveting. The lip, if not plain, bears small incised or stroked units. Vessel surfaces, usually brown to gray in color, are either smoothed, or else have low subparallel ridges which give a corrugated or stamped effect. This surface finish may have been achieved by paddling with a scored rib of the type mentioned above (Wedel and Hill, no date). Incised neck or body decoration is virtually nonexistent; fillets applied below the rim are about equally rare. A small proportion of the sherds have cord-roughened exteriors strikingly reminiscent of the prehistoric Upper Republican wares, from which they may have been derived. There are a few red "slipped" fragments that may have been traded in from peoples to the south or southeast, and at the Udden site on Paint Creek has been found part of an incised pot with "cloistered" rim (Udden, 1900, fig. 10) which unquestionably shows protohistoric Pawnee influences (cf. Dunlevy, 1936, pls. 2, 3, 6, 7; and Wedel, 1938, pls. 4 and 5). On the whole, however, the pottery is readily distinguishable from all known Pawnee wares, as well as from the Oneota and other pottery types so far reported to the north, northeast, and east. To a con-

siderable degree, this statement holds for the local archeological complex as a whole.²

In addition to the artifacts of local Indian manufacture just described, there are other specimens that afford important clues to the time of occupation and to the relationships of the natives with other peoples and localities. A very characteristic banded chert containing fusulinid fossils (pl. 9, *b*) and said to come from aboriginal quarries near Maple City, Kans., and Hardy, Okla., was traded in some quantities as far northwest as Rice County. A foreign provenience must also be accepted for turquoise beads, obsidian, glaze-paint potsherds, and for the very limited European articles of glass and metal.

Potsherds with glaze-paint decoration have been picked up from time to time on the surface of several sites on Cow Creek and Little Arkansas River. A number of these surface finds, together with other similar fragments unearthed by the National Museum party in cache pits and mounds on the Tobias site in northeastern Rice County, were submitted to Dr. H. P. Mera, of the Laboratory of Anthropology at Santa Fe. Mera states (letter of August 13, 1940) that they represent "without question, late Rio Grande forms which began to appear as early as the first quarter of the sixteenth century and continued with few changes until about the middle of the seventeenth century. After this latter date the quality of glaze generally became so poor that I feel sure that your examples can safely be assigned to the period mentioned. All of these would come within my Group E." The glaze-paint sherds from the Tobias site have also been examined by Dr. A. V. Kidder, who reports (letter of May 6, 1941) that they are "certainly Rio Grande glazes, most of which would be grouped as Glaze IV if they came from Pecos, although they might be somewhat later if from farther west. As there are no bowl rims one cannot be absolutely certain but I agree with Mera that 1525 to 1650 would certainly cover them. In fact, I would prefer to place them prior to 1550. . . ." Other glaze-paint sherds from surface collections in Rice County fall in Mera's "Group C and were in style for a short time during the last half of 15th century." It is noteworthy that none of the Puebloan sherds reported on by Drs. Mera and Kidder are of types made after ca. 1650.

² Contrary to some local views, I see no evidence whatever for regarding the Whiteford burial pit east of Salina as belonging to the manifestation under discussion. The associated pottery types and earth-lodge dwellings pretty definitely align these burials with a different and earlier people probably more closely related to the prehistoric Upper Republican horizon.

That definite trade relations existed with the Rio Grande pueblos is further demonstrated by the finding of turquoise in and on Rice County sites. It is possible that the obsidian not infrequently used for arrowpoints in the locality also came from New Mexico, although Yellowstone offers an alternative but more distant source. We know further that this trade was going on at a time when white men were in contact with the Indians, for the same sites which yield glaze-paint sherds, turquoise, and obsidian also contain rare glass beads and objects of iron. These last items can probably be regarded as of Spanish origin, obtained directly or indirectly through contacts with white men in, or operating from, the Rio Grande Valley.

Among the objects of European provenience, probably the most interesting yet found are several fragments of chain mail. The first of these was unearthed prior to 1890 by Udden (1900) in a refuse mound on Paint Creek about 4 miles southwest of Lindsborg. Additional pieces were recovered in 1940 by the National Museum in a cache pit and nearby refuse heap at the Tobias site, about 25 miles west of Paint Creek. Udden's specimen has since been lost but from the description and surviving illustration it appears to have been essentially like the recent Rice County finds. The rings in each case average circa $\frac{3}{8}$ inch in diameter.

Just what significance is to be attached to these chain-mail fragments is not clear. One is tempted to think of them as possible relics from some early Spanish exploring expedition out of the present New Mexico region. The heyday of chain mail in Europe, according to Dean (1930, p. 50), was the tenth through the twelfth centuries, and its use had been largely discontinued by military forces long before the time of Coronado and his contemporaries. The same authority, observing that ". . . European chain mail was rarely made after 1600 . . .," figures suits of plate armor from the Maximilian period (1500-1540) in which mail was used for brayettes or groin defenses (op. cit., figs. 65, 67, 72, 75, 91). In Coronado's muster roll (Aiton, 1939) and also in the list of equipment requisitioned by Oñate (Hackett, 1923, p. 229) there are references to "cueras de malla" or "cotas de malla," which has been translated as coats of mail. It appears, however, that when chain mail was superseded by plate armor, the latter was frequently though inaccurately designated by the same term as its predecessor. For this reason it is exceedingly difficult, if not impossible, to determine from the surviving documents whether the coats of mail carried by these and other

sixteenth- and early seventeenth-century explorers consisted of true chain fabric or, alternatively, of overlapping plates or scales.³

In this connection we may note a possibly significant clue in the narratives of the De Soto expedition. Describing the weapons used by the natives of Florida, the gentleman of Elvas says of certain of the arrows (Robertson, 1933, p. 37): "Those of cane split and enter through the links of mail [malhas] and are more hurtful. . . ."

Apparently not all of the extant translations agree on this rendering of the term "malhas." It is difficult to see, however, how the splitting of a cane arrow would be "more hurtful" on another type of armor, as for example on a cuirass of plate, than would one of the other arrow types previously listed by Elvas as having unusual penetrating power. There is at least an implication in this passage that chain mail was worn by members of De Soto's party; and since this expedition was to all practical intent contemporaneous with that of Coronado it is entirely within reason to believe that similar equipment was used by Coronado's men. Whether subsequent exploring or punitive expeditions into the Great Plains were similarly armored I am unable to say.

In answer to my query, Mr. Thomas T. Hooper, City Art Museum of St. Louis, has commented as follows (letter of June 10, 1941) on the use of chain mail in the American Southwest:

In discussing archeological finds there is too often, I think, the tendency to assume that certain types of objects were specifically in use during certain limited periods and never thereafter. In the case of European expeditions to this country it seems to me entirely possible that many items of equipment might have been taken along which would have been "out of fashion" in the courts of Europe. It is true that chain mail ceased to be worn in Europe extensively after the 16th century but during practically all of that century it was used as supplementary protection for the joints which could less easily be guarded by plate: the elbows, armpits, and groin. It seems to me entirely possible that mercenary soldiers or adventurers might, especially in a land where their possible opponents were known to be fond of the bow and arrow, continue to wear such reinforcing patches of mail until a very late period.

From this it would appear that the chain-mail specimens in themselves are not likely to throw much light on the period of occupancy represented by the sites under consideration.

Despite the fact that some of these sites were obviously inhabited since the beginning of contact with white men, and that they indi-

³ Cf. Curtis, 1927, p. 109. In response to a direct inquiry Aiton (letter of January 4, 1941) says "I am certain that the *cueras* and *cotas de malla* in the Coronado accounts refer to link or chain mail and not to overlapping plates or scales. . . ."

cate the former presence of a comparatively widespread and numerous people, their identification in terms of historic tribal groups is not easy. As already noted, the remains as a whole are quite distinct from those found on Pawnee sites in northern Kansas and Nebraska (Strong, 1935, p. 57; Wedel, 1936) though there are a number of resemblances. Unlike the Pawnee, who clung to their territory in central Nebraska from pre-Spanish days until 1875, and whose remains consequently have been identified through exploration at documented village sites, the erstwhile inhabitants of the protohistoric sites in central Kansas were gone by the time American explorations west of the Missouri set in. Pike traversed a part of the region between the Smoky Hill and Arkansas in 1804, but neither he nor his successors made any mention of villages of sedentary farming Indians. What is evidently Cow Creek is shown on Pike's map (reproduced in part in Wedel, *op. cit.*, map 9) as buffalo range; to the south, across the Arkansas, were the hunting grounds of the Pawnee and Kansa. Without exception the maps purporting to show this territory prior to 1800 are so sketchy or inaccurate that they have decidedly secondary value in tracing the early native occupancy.

The recurrence at several widely separated sites of Puebloan sherds attributed to the period 1525-1650 is strong evidence that these villages were flourishing during the sixteenth and seventeenth centuries—that is, at about the time the Spaniards were exploring and beginning to develop the country along the upper Rio Grande. It may be significant therefore that from the time of Coronado (1541) until at least the latter part of the seventeenth century, Spanish exploring parties repeatedly visited, or heard reports concerning, farming Indians who dwelt in grass-house villages in the province of Quivira northeast of the Rio Grande pueblos. Coronado, of whom we shall have more to say presently, was followed about 1594 by Bonilla and Humaña, and in 1601 by Oñate. Both of these later expeditions saw large rancherías of grass lodges on a stream identified as the Arkansas (Bolton, 1916, pp. 200, 250-267). Sometime later, apparently between 1664 and 1680, while in pursuit of Puebloan fugitives at El Cuartelejo in the western plains north of the Arkansas, Archuleta found them in possession of kettles, copper, and tin acquired by journeys eastward to the Quiviran settlements. From this circumstance, the Spaniards "inferred it to be a kingdom very civilized and wealthy" (Thomas, 1935, pp. 53, 261). The ill-fated Villazur expedition, headed for the Platte and a crushing defeat, passed through El Cuartelejo in 1720, but there is no way of determining from the published record whether Quiviran towns still stood to the

east. The Du Pratz map of 1757 (partly reproduced in Wedel, op. cit., map 5) shows only the *Panis blancs* (Pawnee) at head of the R. Blanche between the Smoky Hill and Arkansas Rivers, and our sites are not Pawnee. In short, it appears that the grass-house communities of Quivira in the plains northeast of Santa Fe were abandoned some time between 1664 and 1757.

The repeated references by the Spaniards to grass houses and a sedentary horticultural mode of life in Quivira have been commonly interpreted as a description of the Wichita (Hodge in Brower, 1899, pp. 69-72; see also Handbook of American Indians, Bur. Amer. Ethnol. Bull. 30, pt. 2, pp. 346, 947). Judging from traditions and other evidence which we shall not detail tribes or bands belonging to this confederacy were at one time on intimate terms with the Pawnee of Nebraska.⁴ They were apparently the northernmost group of grass-house Caddoans as contrasted to the earth-lodge-using Pawnee and Arikara. Their history and movements previous to circa 1700 are still veiled in uncertainty; since that date they seem to have resided with related tribes at various localities on the lower Arkansas, Red, Brazos, and Trinity Rivers in present Oklahoma and Texas (Bolton, 1914, pp. 23, 43). On present evidence it seems to me that the archeological findings in central Kansas, insofar as direct comparisons are feasible, are in accord both with what is said by the Spaniards concerning Quivira and also with what we know concerning historic Wichita material culture (Dorsey, 1904, pp. 4-6).

CORONADO AND QUIVIRA

On present information the archeological remains inventoried in the foregoing pages constitute one of the most characteristic and noteworthy manifestations of aboriginal culture in Kansas. If correctly assigned to the late sixteenth and early seventeenth centuries, they offer a chronological point of reference tied in with the first European contacts in the central Great Plains. They assume additional interest because Bandelier, Winship, Hodge, and others have suggested that the Quiviran settlements visited by Coronado lay somewhere in central or east-central Kansas on or near the Smoky

⁴ Sarfert (1908, p. 148) has suggested that the natives of Quivira may have been the Pawnee who still retained the southern Caddoan grass dwelling and only later developed or took over the earth lodge. Recent archeological researches have shown, however, that the earth-covered pit house was widely used throughout the central plains in prehistoric times (Strong, 1935, p. 276; Wedel, 1940, p. 320), and that the Pawnee since at least their first trade contacts with white men were already using the earth lodge and not the grass house.

Hill-Kansas Rivers. Since discovery of the large protohistoric sites in Rice and McPherson Counties, Jones (1929, 1937) has stoutly maintained that the earlier students of Coronado's route went too far east or northeast and that the villages seen by this expedition were on Cow Creek and Little Arkansas River not far from the present town of Lyons. Let us see in how far the extant narratives of the Coronado adventure support this latter view.

Jaramillo's brief eye-witness account of Quivira and its environs, including the approach from the southwest, seems to me to be a strikingly faithful description of the central Kansas region. Thus, he observes (Hammond and Rey, 1940, p. 303) that on the feast day of Saints Peter and Paul (Wednesday, June 29), after approximately 30 days march north from the point where the army was left,

We came to a river that we found there below Quivira. Upon reaching this river the Indian [Isopete] recognized it and said that it was the one and that the settlements were down the stream. We crossed it at that place and followed it downstream along the opposite north bank, turning our route to the northeast. After traveling for three days we met some Indians who were out hunting, killing cattle to take meat to their pueblo which was about 3 or 4 days from us, farther down. . . . Once the Indians left for their homes, which were at the distance mentioned we too proceeded by our regular journeys until we reached the settlements. We found them⁶ on arroyos [which] though not of much water [were] good and had good banks, which enter the other larger one mentioned; there were, if I remember right, six or seven villages one apart from the other; passing through which we traveled 4 or 5 days, it being understood that the country is uninhabited between one of these arroyos and the other. We reached the back country of Quivira, according to what they said, which they told us there was much of, which they designated to us as *teucarea*. This was a river of more water and settlements than the others. . . .

The Arkansas River in west-central Kansas turns toward the northeast about 20 miles below Dodge City, which direction it pursues for some 70 miles to the town of Great Bend. Here it flows east for about 10 miles, thence turning southeastward to the Oklahoma line. If Coronado crossed the stream a few miles below Dodge City, perhaps near the present Ford, and then followed its "opposite north bank" his route would very soon have turned to the northeast, as Jaramillo says it did. The Quiviran hunting party would have been encountered about halfway down this bend, between the present towns of Kinsley and Larned. Another 3 or 4 days to the main settle-

⁶ Throughout the remainder of this passage I am following a translation made from the Spanish of Buckingham Smith (1857) by Drs. J. P. Harrington and J. R. Swanton, of the Bureau of American Ethnology. This differs in certain possibly significant details from the published translations of Winship and of Hammond and Rey.

ments—a total of 30 leagues, or about 80 miles, below the crossing, according to the *Relacion del Suceso*, would have taken the expedition around the northernmost point of the great bend.

It is possible that the first settlement, after the hunting camp, was seen in the vicinity of the present town of Great Bend. So far as I am aware, archeological sites assignable to the Coronado period have not been reported from this locality. Jaramillo's account suggests, in fact, that the party left the main river valley, probably marching overland in an easterly or northeasterly direction where the river again swings to the south. Such a course would have taken the explorers directly to the village sites on Cow Creek in western Rice County. One of the largest of these—the Malone site 4 miles west of Lyons—is about 100 miles from Ford, which is not greatly in excess of the 30 leagues given by the *Relacion del Suceso*. This site, together with others nearby and those on Little Arkansas River northeast of Lyons, are on streams which, to paraphrase Jaramillo, although not having much water are good and have fine banks and flow into the larger one mentioned, i. e., into the Arkansas. Between these populated lesser streams the upland prairies were uninhabited, says Jaramillo, and precisely the same situation is shown by the archeology of the Rice-McPherson County locale.

The various documents leave us in some doubt as to the length of time spent in Quivira, the distance and direction traveled to reach its limits, and the number and size of the settlements seen. Coronado, in his report to the king, states that there were not more than 25 villages, and that he spent 25 days examining the province. The *Relacion del Suceso* says he marched 25 leagues through the settlements. Jaramillo's account is not very explicit, but he indicates that if his memory was trustworthy it was "past the middle of August" when the return trip was begun. This is probably an error. In any event, there is no proof that the party traveled any great distance in Quivira. Many days were doubtless spent in resting and refreshing men and horses preparatory to the return journey, in summoning and waiting for the chief of Arahe, in councils with the natives, and in similar activities. From the standpoint of archeology, it should be noted that among the known sites on Cow Creek, on Little Arkansas River, and farther east on the tributaries of Smoky Hill River in McPherson County there are easily six or seven large villages sufficiently removed from one another to have required 4 or 5 days' marching, as Jaramillo reports. Since closely related sites occur as far east as Marion on the upper Cottonwood, and also southeastward down the Arkansas drainage, I believe Coronado could easily have spent 25

days and counted up to 25 villages south of Smoky Hill River within 100 miles of the present town of Great Bend. I see no reason whatever to assume that Coronado crossed the Smoky Hill-Kansas Rivers, and am inclined to believe that this was the stream at the end of Quivira—with more water and more inhabitants than the others—as it also appears to be the northern limit of archeological sites of the type discussed earlier in this paper. There is no evidence that the expedition crossed the Smoky Hill, Saline, Solomon, and Republican, as Hodge suggested, nor have any traces of protohistoric sites of the Coronado period come to light in that area.

For Quivira as a land Coronado had only words of praise. The soil was rich and black, well watered with arroyos, springs, and rivers, and abounding with plums, grapes, and mulberries. It was, he said, the best country he had seen in his long trek. All of these observations fit the Rice-McPherson County locality, which differs sharply from the terrain to the southwest and from the plains south of the Arkansas River. As for the natives, whose fabled riches had lured him thence, they were savage and bestial though they received him peaceably enough. Their houses, round in form, were of straw; according to the *Relacion del Suceso* some of the villages had as many as 200 lodges. The people grew maize, beans, and calabashes, in addition to which they hunted the bison. They had no cotton or domestic fowls, and clothed themselves in animal hides. One Indian wore a copper breast piece or pendant, but otherwise no native metal was found.

There is little in the above characterization which would enable the present-day student to distinguish the Quivirans from the inhabitants of other nearby horticultural communities, such as the Pawnee or their supposed Siouan contemporaries to the east. The persistent references to straw houses, however, rules out the Pawnees with their earth lodges. It also eliminates from serious consideration most of the village sites in the Kansas drainage east of the 97th meridian, *i. e.*, below Junction City, where Brower and apparently Hodge were inclined to look for Quivira. My own survey of that region shows that these sites are generally littered with cord-impressed pottery such as is associated in northern Kansas and Nebraska with the prehistoric rectangular semisubterranean earth lodge. Furthermore, there is as yet no shred of evidence that any of the known archeological sites east of Salina date from the early white contact period as do the sites mentioned in Rice and McPherson Counties.

As one may readily judge from the widely divergent conclusions reached by various students from time to time, identification of the

route taken by Coronado from Pecos to Quivira is not a simple matter. The extant narratives are essentially summaries written months or years after the events recorded had transpired. The exact distance and direction of travel each day is nowhere stated, and apparently neither map nor journal was kept. On a number of points there are discrepancies between one account and another. Some of these can be reconciled; others are extremely difficult to dispose of satisfactorily. We are dealing, in short, with probabilities; hence it is not to be expected that the exact line of march from beginning to end will ever be conclusively established.

All attempts to reconstruct Coronado's route during the summer of 1541 are based on the identification of two pueblos, in the Rio Grande area. Tiguex, where the army was quartered while awaiting Coronado's return from Quivira, was located where the present town of Bernalillo, N. Mex., stands. Cicuye, last pueblo seen by the army before it entered the buffalo plains, is identified with the ruins of Pecos.

In the matter of chronology there are apparently two established points. Coronado, in his letter of October 20, 1541, to the king, says he left Tiguex on April 23. Castañeda, presumably from memory, gives May 5 as the day of departure. Coronado's date fits the subsequent narratives rather better, and since he was writing within a month or two of his return from Quivira, his statement probably merits greater weight. The second fixed date is Wednesday, June 29, "the feast day of Saints Peter and Paul," on which Coronado's picked band crossed a river below Quivira. As far as I am aware, the date on which this detachment returned to Tiguex is nowhere stated.

Leaving Tiguex on April 23, then, Coronado and his army marched southeast (see Hodge *in* Brower, 1899, p. 60) to cross the Pecos River after 4 days, whence they proceeded in a more easterly direction. According to Coronado (Hammond and Rey, 1940, p. 186), they traveled for 17 days to reach a Querecho rancheria; after another 5 days, they "reached some plains as bare of landmarks as if we were surrounded by the sea." Here the native guides lost their bearings "because there is nowhere a stone, hill, tree, bush, or anything of the sort . . . we wandered aimlessly over these plains. . . ." Finally, their food supplies exhausted, the Spanish held a council and Coronado with 30 picked horsemen (and 6 foot soldiers?) rode northward in search of Quivira. Coronado does not state how long the army "wandered aimlessly" or how many days they had traveled when he turned north (see footnote 6, p. 16). Castañeda (Hammond

and Rey, 1940, p. 239) says they had traveled 37 days of from 6 to 7 leagues each, and that they were then 250 leagues from the settlements, *i. e.*, Tiguex. They were also among some arroyos and barrancas. At the last barranca, "which extended a league from bank to bank" and had a small stream at the bottom, the council was held and the army remained to rest many days before returning to Tiguex while Coronado headed north. The *Relacion del Suceso* (Hammond and Rey, 1940, p. 291) says they had marched 150 leagues, 100 to the east and 50 to the south.

It is not easy to harmonize all these varying statements of distance, particularly since the army seems to have spent nearly or quite 2 weeks in purposeless wandering. There can be no doubt, I think, that the plains without landmarks were the Staked Plains of Texas. Hodge (Brower, 1899, p. 64), accepting Castañeda's figure of 250 leagues, was of the opinion that the Staked Plains had been crossed and that the expedition divided on the Colorado River in central Texas—probably "well along the stream, say between longitude 99° and 100°." *Relacion del Suceso* would put the point of separation somewhat farther north.

Both Jaramillo and Castañeda say that the expedition divided in or near a large ravine—"una barranca grande como las de colima," as Castañeda has it. Whether the valley of the Colorado at the location given by Hodge, or the North Fork of the Canadian as Winship suggests (Winship, 1896, p. 399), would fit this description, I leave to students familiar with local topographic conditions. Considering the aimless wandering mentioned by Coronado, I am of the opinion, however, that Hodge took the expedition much too far to the southeast, and that Winship erred equally in taking it into central or eastern Oklahoma. From either of these points north the expedition would have crossed numerous streams and rivers, which is at variance with Coronado's later words.

Castañeda's comparison of the last barranca with those of Colima on the west coast of Mexico raises an interesting point. It suggests that he was describing no ordinary gully or arroyo such as one might see anywhere along the edge of the High Plains, but rather a considerable canyon or gorge. It is possible that Castañeda's memory was playing tricks on him, and that his recollection of the barranca was altogether out of line with reality. On the other hand, Donoghue (1929, p. 189) may be right in his contention that the wanderings of the army had taken it more or less in circles and that this last barranca was none other than Palo Duro Canyon and its branches in Randall and Armstrong Counties, Tex. This remarkable canyon,

with its precipitous walls, its depth of 700 to 900 feet and a width of $1\frac{1}{2}$ to 5 miles (Gould, 1906, p. 12; 1907, p. 10) would certainly have profoundly impressed the Spaniards after the weeks spent on the monotonous plains. One objection to this identification is that Palo Duro Canyon is under 300 miles, or a little over 100 leagues, east by slightly south of Pecos. This is not so far from the *Relacion del Suceso's* 150 leagues if we assume that one-third of the distance was given over to the aimless wandering mentioned by Coronado. It does not square with Castañeda's estimate of 250 leagues.

From the point where he left the army, possibly at Palo Duro Canyon or somewhere not far away to the south or southeast, Coronado says (Hammond and Rey, 1940, p. 187) he traveled 42 days and that "after traveling 77 days [from Tiguex] over these barren lands" he reached the province of Quivira. Castañeda (*ibid.*, p. 241), who was not among those selected to accompany his commander north, states that the journey to Quivira required 48 days. According to the *Relacion del Suceso* (*ibid.*, p. 291), "after traveling many days by the needle God was pleased that in 30 days we should come to the Quivira River. It is reached 30 leagues before coming to the settlement of the same name." Jaramillo (*ibid.*, p. 302) observes that "Turning always to the north from here, we continued on our way for more than 30 days, or close to 30 days of travel, although the marches were not long, without ever lacking water in all these days So on the feast day of Saints Peter and Paul [June 29] we came to a river that we found there below Quivira." The settlements of Quivira, he says further, were another 6 or 7 days' journey down this stream.⁶

⁶ Excepting Castañeda's statement that 48 days were required for Coronado's trip to Quivira, the varying figures just given from the several accounts for the number of days traveled are not so disparate as they seem at first glance. Jaramillo and the *Relacion del Suceso* both say that the river below Quivira was reached in 30 days, and that it was another 30 leagues (*Relacion del Suceso*) or 6 or 7 days (Jaramillo) to the Quiviran towns. This gives a total of about 36 or 37 days to Quivira, as against Coronado's 42 days. Figuring back 30 days from the crossing of the "Quivira River" on June 29, the northward dash would have begun on or about May 31. This can be checked against Castañeda's assertion that the expedition had traveled 37 days to reach the barranca where the separation occurred. Thirty-seven days after April 23 would be May 30.

It will be recalled that Coronado says the plains without landmarks were reached after 22 days' travel, i.e., about May 15. If the dates given above are substantially correct, and the expedition was not divided until May 30 or 31, about 2 weeks were given over to aimless wandering through the Staked Plains.

The chroniclers of the expedition have vouchsafed almost no details concerning the nature of the terrain traversed during this march to the north. Coronado remarks on the great numbers of bison seen, on which the party mainly subsisted. Also he observes (Hammond and Rey, 1940, p. 187) that "we went without water for many days and had to cook our food on cow dung, because there is no other fuel in all these plains, except along the arroyos and rivers of which there are very few." Jaramillo, it will be remembered, says the party did not lack water at any time and that the march was by easy stages. If this leg of the journey began in the general vicinity of Palo Duro Canyon, or to the south, a northerly route to the Arkansas would have led across few rivers indeed—the Canadian, the North Canadian, the Cimarron, and a few secondary streams. Each of these major streams flows in a deep but relatively broad valley, and between water-courses the flat High Plains topography continues northward from the Texas Panhandle for hundreds of miles.

We can only guess at Jaramillo's meaning when he says the day-by-day marches were not long ones. Previously, according to Castañeda, the army had marched 6 or 7 leagues, about 15 to 18 miles, daily. Hodge, noting that the airline distance from the Rio Colorado of Texas to the Arkansas River near Dodge City is about 440 miles, points out that this could have been traversed in 35 days at $12\frac{1}{2}$ miles per day. From Palo Duro Canyon, on the other hand, the Arkansas is distant only about 250 miles, or less than 8 miles per day of continuous marching. This figure seems very low for a small party consisting largely or entirely of picked horsemen. Still, we have Jaramillo's statement that it was 6 or 7 days' travel from the crossing of the river on Saints Peter and Paul's day to the settlements of Quivira, and the *Relacion del Suceso* gives this distance as 30 leagues. Here the daily mileage would have been 10 or 12. It is possible that the party rested frequently or for some other reason loitered along the road so that the average distance covered during this march did not much exceed 8 miles a day. On the other hand, they may have started farther south than Palo Duro Canyon. In any event, in the light of what follows in the narratives concerning the river and province of Quivira, I agree entirely with Hodge and others who point out that the Arkansas is the only river within 30 days' easy march north of central or panhandle Texas which can reasonably be considered as the one crossed by the Spaniards on June 29, 1541.

One further point should be noted here. After leaving the army, according to Jaramillo and the *Relacion del Suceso*, Coronado traveled

to the north. A due northward course from Palo Duro Canyon or from any other point along the east front of the Staked Plains would have brought the party to the Arkansas near Garden City, about 75 miles above the place where the river turns to the northeast. Jaramillo's statement suggests that the crossing took place much lower down and nearer the bend. An approach from due south to the Arkansas below Dodge City would have taken the party across the western part of the Cimarron Breaks in southern Meade and Clark Counties, Kans. Here the terrain is rugged and broken, in striking contrast to the flat plains to the west and north. One wonders whether such an area, if crossed by Coronado, would have escaped some notice in at least one of the narratives. Had the party marched northward from Texas to the vicinity of Meade, or a little farther west, thence northeast for a day or two, and then north again, it would have traveled almost altogether through a High Plains terrain and would have reached the Arkansas near the present town of Ford.

ONATE AND QUIVIRA

In the half century following their discovery by Coronado, the settlements of Quivira were visited by Spanish expeditions on at least two other occasions. The first of these was under Bonilla and Humaña who, in 1593 or 1594, led a party to a large rancheria on a stream identified by Bolton (1916, p. 201) as the Arkansas. Here the houses were of grass, and the natives grew plentiful crops. Subsequently, perhaps on the Platte, practically the entire command was annihilated by Indians.

A few years later, in 1601, Juan de Oñate led a force of more than 70 men, with 700 horses and mules, 6 mule carts, artillery, and the usual servants and camp followers eastward from New Mexico into the plains (Bolton, 1916, p. 250). The point of departure was San Gabriel, on the right bank of the Rio Grande between Santa Clara pueblo and the mouth of Chama River. The route led across the Pecos and Gallinas Rivers, and down the Canadian. One hundred eleven leagues from San Gabriel they left the river because of sand dunes, turning northward up a small stream which led them into the plains covered with bison. Two small streams flowing eastward were followed for a time. Then, like Coronado's army, they lost their bearings, and wandered off their course. Eventually, at more than 200 leagues from San Gabriel, they encountered a camp of Escanjaques, and 12 leagues farther on, after fording a large east-flowing stream, found a great rancheria of Indians dwelling in grass houses.

This rancheria, to judge from the map and narrative, lay on both banks of a good-sized river flowing from the north into the large one crossed by Oñate. It consisted, according to the Spaniards, of 1,200 houses, all round in form, and built of poles covered with grass. Much fine maize was found, and in addition there were fields of beans and gourds. The Spaniards were informed that large numbers of people like these lived farther up the river. Owing to hostilities between his Indian "allies," the Escanjaques, and the natives of the grass houses, the expedition was unable to extend its explorations.

Additional information based on the subsequent testimony given by members of the Oñate expedition in Mexico City in 1602 has been presented by Scholes (Scholes and Mera, 1940, p. 274). Here we are told that "the huts were grouped in barrios of 30 or 40, the huts being about 30 to 40 paces apart, and . . . the barrios were separated by two or three hundred paces. Surrounding each hut was a small cultivated plot where maize, beans, and calabashes were raised." The Indians wore clothing of deer and bison skins, had no textiles, used metates, made pottery of brown clay and small dishes from calabashes, and apparently possessed a few small dogs.

Scholes says this "gran poblacion was undoubtedly a Quivira settlement, located in the same region as the Quiviras whom Coronado visited in 1541" (op. cit., p. 274), and notes that the details of material culture are essentially the same in both cases. Bolton (1916, p. 260) suggests that the large rancheria seen by Oñate was either on lower Cow Creek or else on Little Arkansas River. Unfortunately, both of these localities are now occupied by cities of some size—the former by Hutchinson, the latter by Wichita. It is extremely improbable, therefore, that archeology will ever be able to throw any light on the aboriginal occupancy of either place.

If Oñate actually reached the Arkansas Valley, I venture to suggest a third possibility—the Walnut River east and northeast of Arkansas City. This enters the Arkansas River from the north at a point where the latter flows due east, which accords with Oñate's observations. On the lofty bluffs overlooking the Walnut from the east, on land now occupied by the Arkansas City Country Club, is a large group of mounds—probably the largest and best-preserved in Kansas. From a cache pit beneath one of the lesser mounds came a Pueblo sherd dated circa 1525-1650, along with locally made pottery and other artifacts virtually identical with materials in Rice and McPherson Counties. Closely similar remains, with middens and cache pits, are scattered north and south from this mound group along the Walnut for a distance of at least 3 miles, possibly more. Across the

river, along an abandoned channel of the Walnut, are to be found a series of habitational areas covering an equal or greater stretch of ground. Here, too, cache pits yielded Puebloan glaze-paint sherds of the 1525-1650 periods, together with specimens like those on Cow Creek and Little Arkansas River. If several of these neighboring communities were occupied contemporaneously they would have given the visitor precisely the impression received by Oñate's men—a great rambling settlement made up of barrios or groups of huts with a fine river flowing through their midst. Moreover, it is clear that farther to the north up the Walnut, as well as up the Arkansas and its branches, there were other settlements whose inhabitants must have lived in essentially identical manner. In other words, the geographical observations of Oñate tally nicely here; and so far as archeology affords any check, the inhabitants of these Walnut Valley sites followed a subsistence economy and practiced arts and industries like those recorded by him in the Quiviran rancheria of 1601.

I am acutely conscious of the fact that the incomplete record left by Oñate, especially as regards his route from the Canadian, imposes several difficulties on present final acceptance of the Walnut River locality. As with Coronado's explorations, the movements of Oñate were not recorded in a detailed day-by-day journal. We know that Oñate left San Gabriel on June 23 and returned on November 24 (Bolton, *op. cit.*, p. 265), a total elapsed time of 154 days, and that the return trip from Quivira required 59 days. How much of the remaining 95 days was spent in exploring Quivira, and how long it took the presumably slow-moving expedition to reach the province is not stated. Neither the narratives nor the map indicate several rivers and a number of creeks which would have been crossed between the Canadian and the Walnut. Some large ravines and broken hills were encountered, but nowhere did the terrain offer any serious obstacles to easy movements of the army's carts. The Quiviran settlement, as previously stated, was about 220 leagues from San Gabriel, i. e., just about double the distance from San Gabriel to the point where the Canadian was left. If this latter point was in the Texas Panhandle (Donoghue, 1936, p. 11) or immediately east of it (Bolton, *op. cit.*, p. 255), the expedition would have been about halfway, in an airline, to the Walnut River.⁷

⁷ Donoghue has published several papers (1929, 1936, 1940) arguing that neither Coronado nor Oñate ever marched beyond the Staked Plains and Texas Panhandle. He deals harshly with the "Quivira-in-Kansas idea." The ravine "like those of Colima" he identifies with Palo Duro Canyon, the river below Quivira with the Canadian, and Quivira with the Canadian Valley, Wolf Creek,

SUMMARY AND CONCLUSIONS

Scattered throughout a wide area in central and southern Kansas, chiefly in the Arkansas basin but extending also into the Smoky Hill and upper Cottonwood drainages, are numerous aboriginal village sites. Preliminary archeological investigations show that these were

and their tributaries. Since I am not intimately familiar with the topography of the Texas Panhandle, I cannot fairly judge whether Palo Duro and Tule Canyons are the only ones in the northern or central part of the State that could possibly qualify as the barrancas mentioned by Castañeda. I am unable to accept Donoghue's categorical assertion that the rivers named or specifically mentioned in the sixteenth-century narratives are the only ones the expedition could have seen. If such streams as the Canadian and Cimarron carried no more water in June of 1541 than they have in recent summers, their crossing would probably have been quite uneventful and might not have lingered long in the memory of the Spaniards.

I have already shown that there are difficulties in the way of accepting the relatively short distance (ca. 250 miles) from Palo Duro Canyon to the Arkansas as sufficient to occupy Coronado's band of horsemen for 30 or 35 days. It is infinitely more difficult—and for me impossible—to believe that 30 days would have been required to travel the 50 or 60 miles from Palo Duro Canyon to the Canadian where it turns toward the northeast. Jaramillo says the marches were not long, but are we to believe that they averaged under 2 miles a day? Moreover, if the settlements of Quivira were no farther from the barrancas than Wolf Creek is from Palo Duro Canyon (circa 120 miles), Coronado could easily have discovered them and sent back for the army which waited 15 days at the barranca for word from him.

In a footnote Donoghue (1936, p. 8) observes that "The latest support to the Quivira-in-Kansas theory is based on flimsy evidence supplied by 'certain spots of extremely rich soil' identified as the archeological remains of grass lodges presumably standing at the time of Coronado's alleged visit and occupied by the Quiviras or Wichita!" Moorehead (1931) is cited in this connection but no page reference is given and I am unable to determine just where these "certain spots" are located. If, as I suspect, they were in central Kansas, it is probable that the passage refers to some of the refuse mounds which characterize the Rice and McPherson County sites. I consider the evidence collected from these spots by the United States National Museum expedition of 1940 far from flimsy, and as constituting strong support for the position toward which this paper is making. As for the ruins along Wolf Creek and elsewhere in the Texas Panhandle, to which Donoghue (*op. cit.*, p. 9, footnote) calls attention, limited archeological investigations have shown that they comprise chiefly rectangular adobe or adobe-and-slab walled structures (Moorehead, *op. cit.*, pp. 94, 131 ff.) in no wise comparable to the grass houses seen by Coronado and Oñate in Quivira.

The Quivira-in-Texas theory is tenable only if we follow Donoghue (1936, p. 7) in his almost complete disregard for the number of days or the distance in leagues which Coronado, Oñate, and their followers estimated they traveled. I do not believe that the observations in the documents concerned can be swept aside in such arbitrary fashion.

the habitat of a widespread and numerous semisedentary people practicing a maize-bean-squash horticulture, as well as hunting and gathering. There is a striking uniformity in the pottery and other cultural remains from sites in Rice, McPherson, Marion, Butler, and Cowley Counties. The discovery of chain-mail fragments, glass beads, an iron ax blade, etc., indicate that the sites were inhabited into or during a very early period of white contact; turquoise, glaze-paint sherds, and obsidian are evidence of trade relations with Puebloan groups in the Rio Grande area. Moreover, glaze-paint sherds from widely separated sites in Rice and Cowley counties have been identified with wares produced on the Rio Grande between circa 1525 and 1650.

As I view the archeological evidence and its geographical setting the conviction is strong that the Quivira of the sixteenth- and early seventeenth-century Spanish documents and the central-Kansas archeological sites were the habitat of one and the same people. I cheerfully admit that the final word on the routes of Coronado and Oñate has yet to be written. Meanwhile, and until convincing evidence to the contrary is adduced, including archeological and ethnological as well as documentary data, I am of the opinion: (1) That Coronado's entrada into the province of Quivira probably took place in the present Rice-McPherson County locality; (2) that Oñate's visit to Quivira 60 years later possibly took place on the Walnut River near the present Arkansas City, Kans.; (3) that while the exact limits of Quivira in Kansas cannot now be set up, the heart of the province (fig. 1) lay north and east of the Arkansas and south of the Smoky Hill, extending from Rice, or possibly Barton, County east through McPherson and Marion Counties, thence south through Harvey, Butler, and Cowley Counties, to or beyond the Kansas-Oklahoma State boundary.

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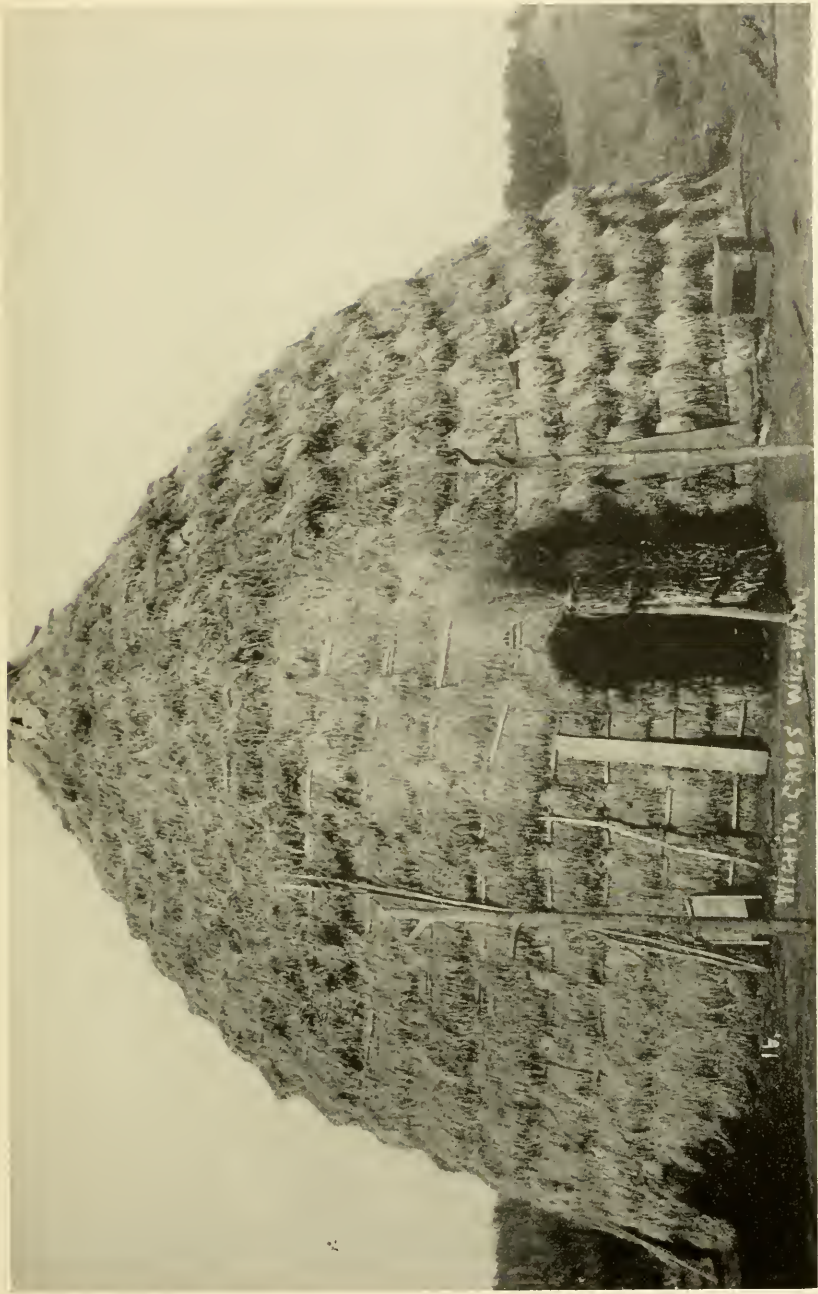
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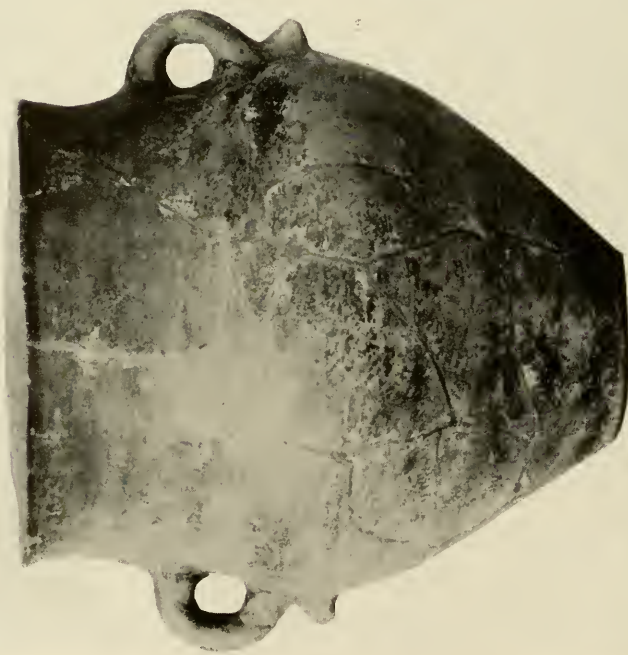
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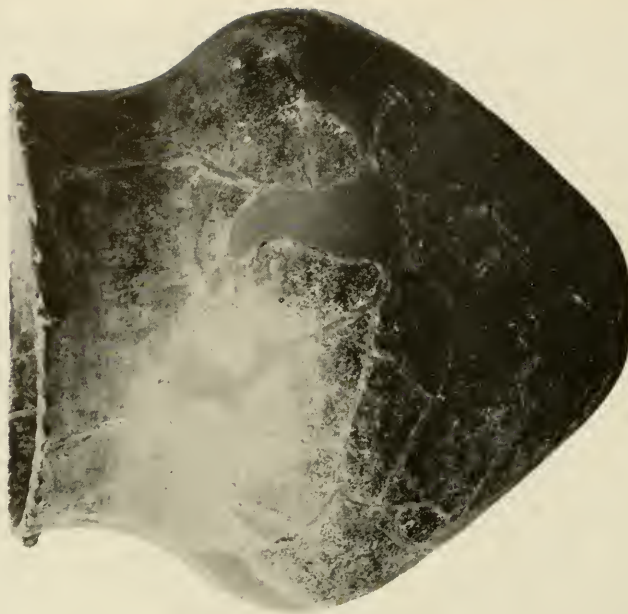


WICHITA GRASS LODGE

From a photograph in the United States National Museum collections, made by Lenny and Sawyer, Purcell, Indian Territory.



a



b

RESTORED VESSELS FROM KANSAS

a, from Arkansas City Country Club site, Cowley County, height 11 inches; *b*, from Tobias site, Rice County, height 9½ inches.



a



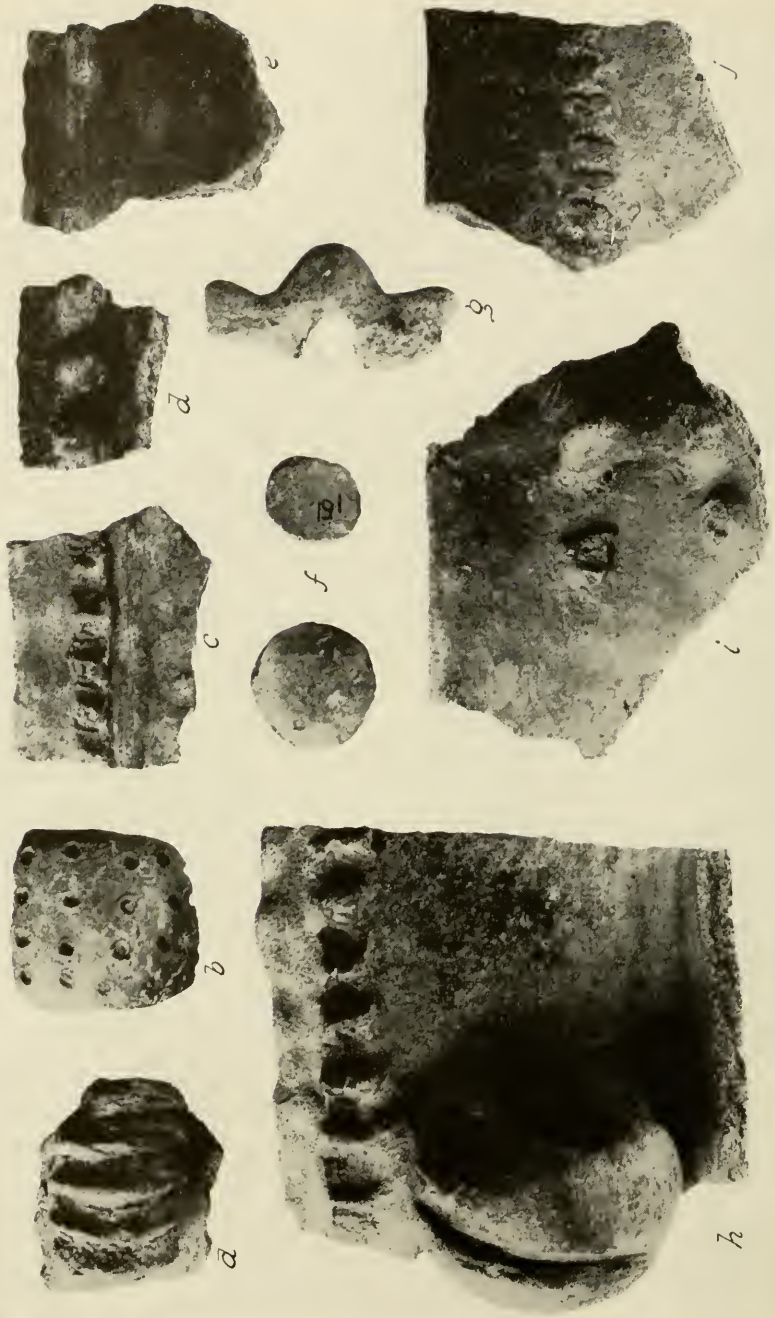
c



b

MISCELLANEOUS SPECIMENS FROM TOBIAS SITE, RICE COUNTY, KANS.

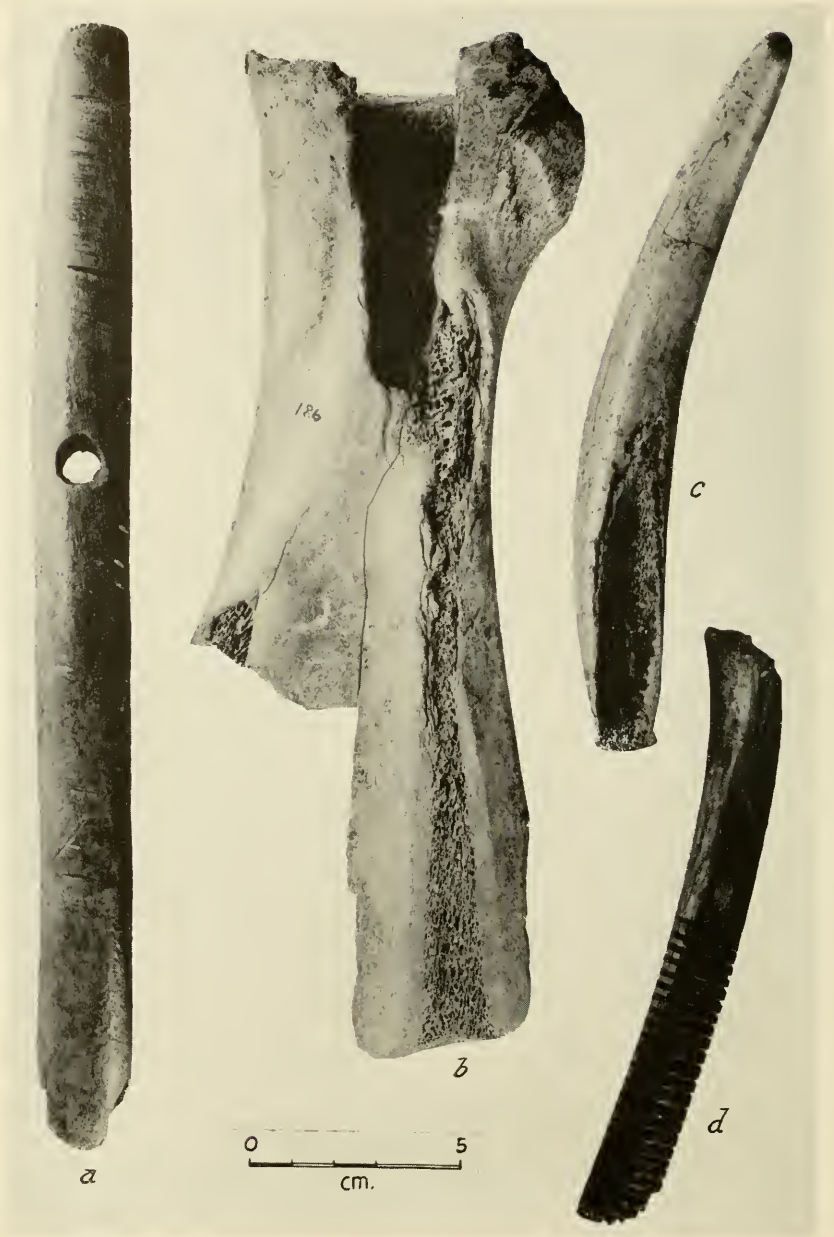
Height of *a*, 8¼ inches.



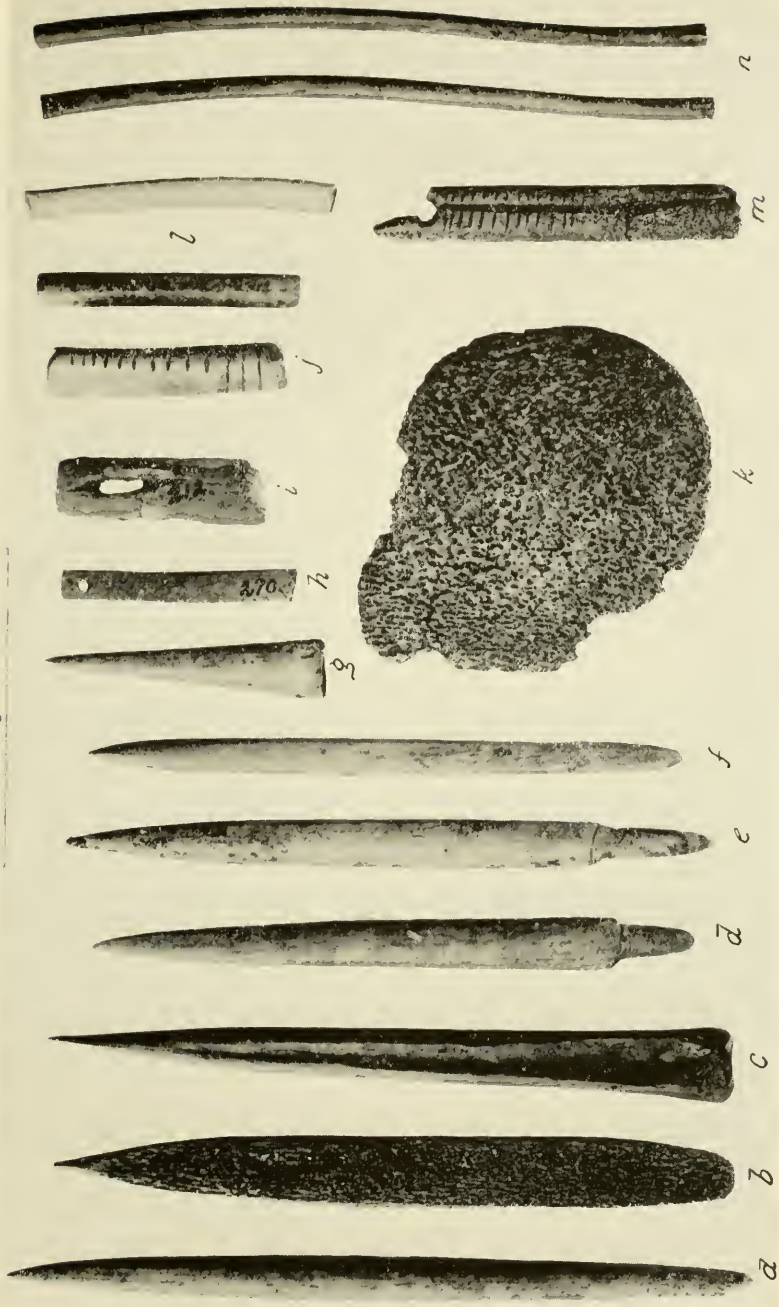
RIMSHERDS, VESSEL HANDLES, AND SHERD DISKS FROM TOBIAS SITE, RICE COUNTY, KANS.



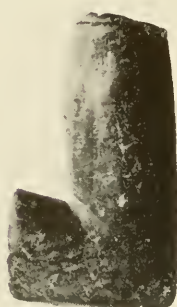
CHIPPED STONE ARTIFACTS FROM VARIOUS SITES IN RICE AND COWLEY COUNTIES, KANS.



BONE ARTIFACTS FROM THE TOBIAS SITE, RICE COUNTY, KANS.



BONE ARTIFACTS FROM SITES IN RICE COUNTY, KANS.



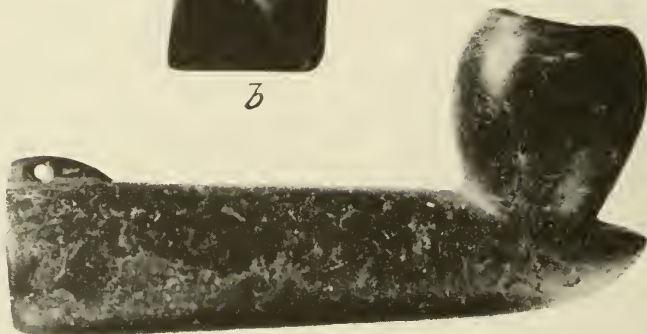
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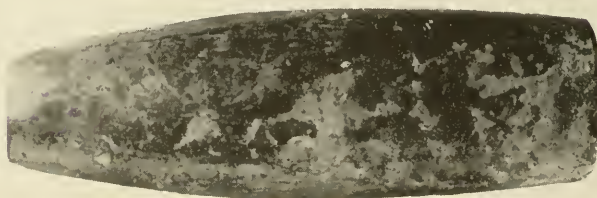
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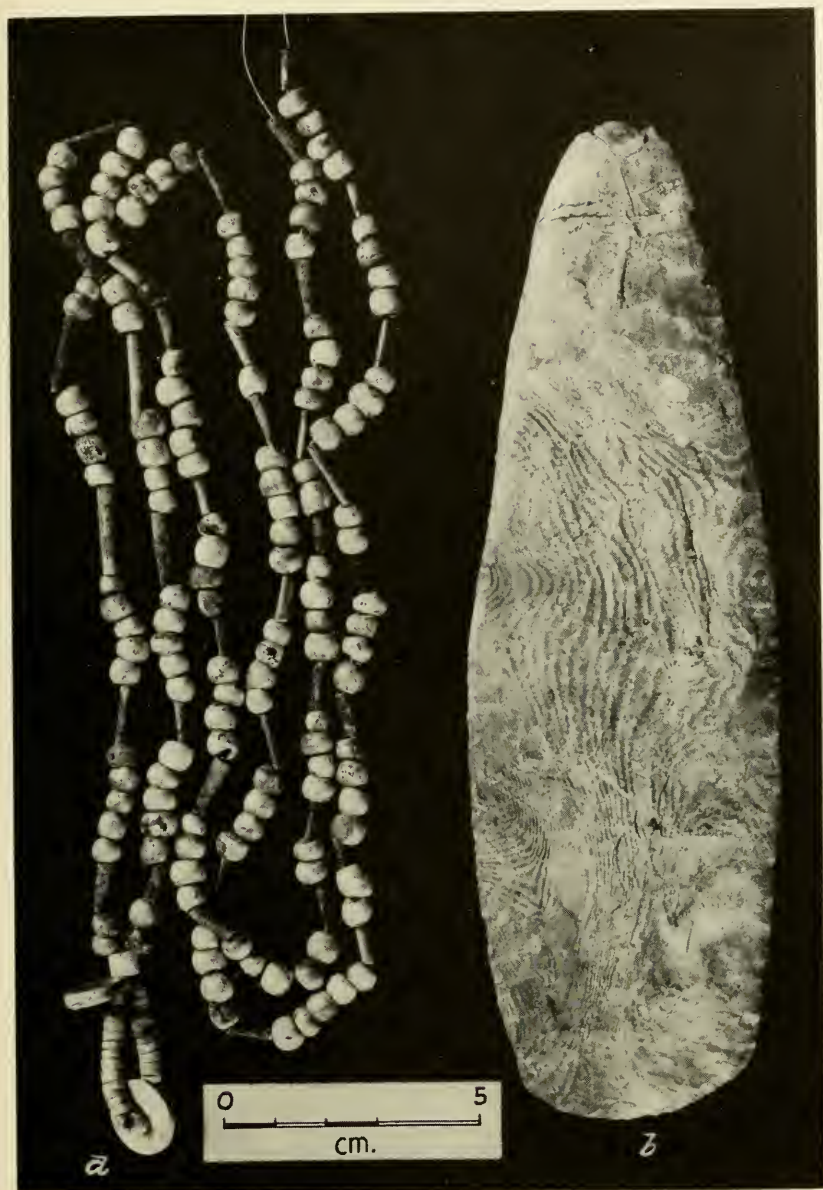


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PIPES FROM TOBIAS SITE, RICE COUNTY, KANS.



ARTIFACTS FROM TOBIAS SITE, RICE COUNTY, KANS.

a, necklace of blue glass and bird-bone beads, with turquoise and shell pendants;
b, blade of banded Florence flint, possibly from aboriginal chert quarries near
Maple City, Kans., or Hardy, Okla.



SHELL ARTIFACTS FROM VARIOUS SITES IN RICE AND COWLEY COUNTIES, KANS.