

\*\*Excerpts from Culture Complexes and Chronology in Northern Texas, by Alex D. Krieger, 1946, pp. 17-39.

## Exploration of Texas Panhandle Ruins

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Where it flows eastward across the high plains of the northern Panhandle of Texas, the Canadian River has cut a narrow valley several hundred feet deep. For a considerable distance its course is peculiar among large streams in that it has only a very small lateral drainage basin. Short tributaries rising from springs enter the Canadian from both sides almost across the Panhandle. Above these side canyons the level high plain stretches to north and south, for the most part draining away from the Canadian rather than toward it.<sup>1</sup> Except for sparse cottonwoods and willows along the watercourses, this part of the Panhandle is a vast grassy expanse with scattered sage and mesquite brush. This country agrees on the whole with the High Plains extending far northward. Though much of the Panhandle is still given to grazing, very considerable parts of it are used for summer crops of corn and wheat.

The presence of numerous masonry ruins on or near the short tributary valleys of the Canadian has been known for many years, thanks largely to the labors of Mr. Floyd V. Studer of Amarillo. There is a general idea that they somehow form an important link between Plains and Puebloan cultures, but this has remained vague and undefined. In the following pages a review of the work in this area to date will be made, after which a tentative culture complex which the writer proposes be named Antelope Creek Focus will be defined. Most attention will be given to architectural features, since the available notes are scattered through many short papers, are often vague and conflicting, and it is highly important that these matters be well understood. Less attention will be given to artifacts in this review, for there is more consistency among the investigators as to what forms have been found in and about the ruins. In the list of traits characteristic of these sites given under the definition of Antelope Creek Focus, all artifacts which appear to belong to the complex are included, and the reader may check back through the literature regarding their occurrence for details.

In 1921 Moorehead<sup>2</sup> published an account of his exploration in this region which includes a brief history of the few previous investigations. Working westward from Oklahoma, Moorehead states that the first stone buildings

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\*\* Page numbers and footnotes represent the original pagination.

<sup>1</sup> This is well brought out in Studer's site map, reproduced in Moorehead, W. K. *Archaeology of the Arkansas River Valley*, fig. 74.

<sup>2</sup> Moorehead, W. K., *Recent Explorations in Northwestern Texas*.

were found on the Jackson ranch on Wolf Creek, in central Ochiltree County. These two sites remain to the present day the only masonry ruins reported in Texas outside the narrow Canadian Valley.

Proceeding southwestward into the Canadian Valley, Moorehead viewed successively ruins on the Archie King ranch, others on Cottonwood and Tarbox creeks, on Antelope Creek and Dixon Creek about 25 miles north of the town of Panhandle, the Landergin ranch 40 miles north of Amarillo, and perhaps others. In each case he was surprised by the size of the site, which often covered several acres or extended intermittently for a mile or more along a ridge. At Cottonwood Creek he reported "109 stone graves in one group, and more than 40 buildings." The graves interested him particularly, being "somewhat like those in Tennessee," lined with flat stones set on edge, and "enclosing a space two by one-half meters." Although a grave of this size could have contained an extended burial, Moorehead does not mention the position. Also noted was a general method of building walls with large slabs set vertically rather than in horizontal coursing as in the classic Southwestern ruins. He specifically states that no Puebloan pottery, turquoise, or "ocean shells" were found in the various sites, but these have been found by subsequent workers. At the Landergin ranch, atop a high mesa, he counted 22 foundations, nearly all circular. Upon questioning an aged Mexican, the information was gained that Kiowa, Comanche, and Apache had camped on the mesa some 60 years before, using stones to weight their tipi covers.

At this time, Moorehead advanced a theory that the Canadian Valley buildings represented an ancient civilization which gradually extended westward and eventually evolved into that of "the Pueblo-Cliff Dweller people." His statement that "They also built irrigation ditches farther up the streams from their villages. . . ." would be interesting if supportable by fact, but no information was given.<sup>3</sup>

In 1929, Dr. W. C. Holden of Texas Technological College, Lubbock, published a short account of his work with students in a ruin on Tarbox Creek.<sup>4</sup> Ruin B, he says, consisted of some 12 to 15 rooms, with outside dimension of 68 by 33 feet; "Some rooms are rectangular; some are round, some are oblong, and some are rectangular on one side and circular on the other." Certain rooms had been made by building partition walls across former large rooms. One wall, he notes, consisted of 16 inches of the usual vertical-slab masonry, plus 16 inches of horizontal coursing.

In 1929 also, Dr. J. Alden Mason made investigations in the Panhandle and northeastern New Mexico for the University of Pennsylvania Museum, accompanied by Satterthwaite and Bache. He notes that the Canadian Valley served as a trade route between Puebloans and Plains Indians, a fact

. . . indicated by the discovery, on the slopes of the bare hills lining Palo Duro Creek fifteen miles south of Amarillo, of small bits of pottery represent

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<sup>3</sup> Later, he observed irrigation ditches in Meade County, southwest of Kansas. These have since come to be recognized as due to the temporary settlement of Taos Indians in this area during the Pueblo Revolt. Wedel, Waldo R., *Culture Sequences in the Central Great Plains*, p. 325, discusses ruins and ditches in Scott County, Kansas.

<sup>4</sup> Holden, W. C., *Some Recent Explorations and Excavations in Northwest Texas*.

-ing most, if not all, the types of pottery found at the ancient Pueblo of Pecos near Santa Fe. . . . That the former inhabitants, of Pecos journeyed so far east is thus established, but since no ruins of pueblo type are found in this region, it seems most probable, that these potsherds represent merely temporary camps of the Pecos people while on expeditions to hunt bison. . . .

But along the Canadian and especially on the short creeks which flow, into that river are found the houses of a people whose culture was apparently pueblo and plains elements. . . .<sup>5</sup>

Mr. Studer conducted the party to Alibates Ruin, north of Amarillo.<sup>6</sup> Here,

On one of the hills overlooking the broad low valley of the Canadian are dozens of rings and a few rectangles made of stones, laid flat or placed on edge. These probably represent the walls of semi-subterranean houses; the superstructures now fallen in and the rooms filled with soil. A few artifacts were picked up on the surface. On an adjacent hill are a few, more similar sites which were chosen as the expedition's scene of labor. Three sites were partially excavated, a small round ring, a large rectangle and a small hillock with many stones placed on edge. The former revealed nothing of importance. The rectangular site was partially excavated by Mr. Satterthwaite, with help from Mr. Bache. It was outlined by a rectangle of stones, mainly placed on edge, which were found for the greater part to be embodied in a hard material made, apparently, of a lime cement. The flooring was of the same, material, but the arrangement was, too unusual and intricate to be here detailed. . . .

A second room was, partially: excavated, and a third which had previously been opened, ". . . was continued until the important features were determined."

The room measured about 15 feet in diameter and was mainly rectangular, though one corner was rounded and one side may have been curved. Built, in the side of a [refuse] mound, the upper floor was at ground level on the lower side of the mound, but about four feet below the surface at the crest. The underground walls were of adobe or mud, but were solid and not built of adobe bricks as in the modern Mexican style. Most of them were blackened by smoke. . . . A number of different floor levels were noted, the lowest being two or three feet beneath the uppermost; These floors were apparently made of hard packed clay or mud over which was laid a thin film of plaster. In the center of the house on the uppermost floor level was a rather deep conical depression with a few large stones and a large quantity of packed ash in it, undoubtedly the fireplace. . . . The area of the fireplace was marked by a depression of probably six inches in the floor which dropped in a rather abrupt curb with rounded edges. At four points at equal distances from the fireplace were holes in the floor, which details showed plainly represented the posts which upheld the roof. Above most of the floors were found charred beams turned to charcoal, clay burned to brick bearing the imprint of small poles or reeds, and carbonized grass.

The deductions from these data are evident. The house consisted of a room partially underground, the walls and floors made of day faced with plaster. The roof, which rose to an unknown height above the surface, was supported on four posts placed in the interior of the room and consisted of cross poles with a straw thatch above this and possibly a covering of mud. The walls above ground may have been of the same construction as the roof

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<sup>5</sup>Mason, J. A., *The Texas Expedition*.

<sup>6</sup> The site is in Potter County on the great Bivins ranch, 37 miles by speedometer reading from Amarillo, and about five miles west of the highway from Amarillo to Dalhart.

or of solid adobe. The inflammable nature of the building led to frequent conflagrations during which the roof was destroyed and fell to the floor, partially filling the room. Instead of cleaning the debris out to the level of the original floor, it was packed down, leveled off, and a new and higher floor made upon it.

It is clear from this description that a four-centerpost support was used for the roof, which was covered with poles, grass, and mud. Although Mason makes no mention of it, this same room (and several others like it at Alibates) has two parallel rows of slabs on edge which project at right angles to the east wall. These are the remains of a peculiar form of masonry tunnel discussed in more detail in the summary of Antelope Creek Ruin (see pp. 33-35, below).

Although but few artifacts are mentioned, Mason stated that

All of these artifacts, including the pottery, resemble those of the Plains Culture far more than those of the Pueblo. But the architecture is strikingly Puebloan on the whole, resembling decidedly that of the semi-subterranean rooms of the Post-Basket-Maker or Pre-Pueblo peoples. The culture is therefore probably a hybrid and intermediate one and deserves more attention than has hitherto been paid it.

Continuing his investigations farther west, Mason states that

Another site of this same culture was observed further to the west on the Canadian and to the north of the town of Vega. Here are a large number of house sites crowded together on the top of a steep sided mesa, obviously for protection. They may therefore be of a period subsequent to the building of those on Alibates Creek, which are open to easy attack. On the slopes of this mesa are pockets in, which are found quantities of animal bones, refuse from the houses above, and on the slopes and at the bottom of the mesa quantities of pottery fragments were picked up.

Following this, Mason and his companions proceeded into northeastern New Mexico in the hopes of tracing the relationships of Canadian Valley culture into the Pueblo area. On the Mora River, no sites were found, but near Watrous, at the confluence of Mora River and Sapello Creek, a ruin was seen which in architecture "somewhat resembled that on the Canadian, the underground walls and floors being made of adobe mud, but less smoothed and finished." Superposition of floors, burned roof clay, and the presence of charred beams were noted as similar to the Canadian, Pottery, however, was clearly Puebloan, mainly black corrugated ware but including painted Black-on-White and Black-on-Red. Here Mason reveals an erroneous belief that the Canadian ruins consist of single rooms. As will be seen, most of the Texas Panhandle masonry structures consist of pueblo-like apartments or clusters of rooms.

Another building of stones was found on Lorna Parada, a mesa near Watrous, but at a campsite north of Logan, New Mexico, Mason noted bones, chips, and pottery fragments "clearly of plains type."

The following year, Holden reported on an excavation made in the "A-C" (Antelope Creek) Ruin by Texas Tech students under his direction.<sup>7</sup> This

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<sup>7</sup> Holden, W. C., *The Canadian Valley Expedition of March, 1930.*

ruin was found to be a solid block of rooms measuring 163 by 52 feet over all. Figure 2 of this work presents an excellent sketch of the peculiar off-set method of wall construction characteristic of much masonry work in the Canadian Valley of Texas. Briefly, this consists of placing two parallel rows of large, flattish limestone slabs on edge about three feet apart to form the base of a wall. The space between the slabs was then filled with adobe and small stones. The second course was laid by placing two more rows of slabs on edge, just inside the tops of the first rows and resting on the fill. The second space was likewise filled with rubble, and the third set of slabs placed on edge inside the second, and so on. Four or five courses usually served for a wall about five feet high, perhaps a yard wide at the base and tapering to a width of one foot or less at the top. The earth fill may have been dampened so as to make it sticky, for much of it still remains in place even when the sand is removed from around the walls.

Holden further notes the regular manner in which Antelope Creek Ruin was constructed. Many corners were neatly right-angled, and the whole pueblo built in more orderly fashion than some others (*e.g.*, Saddleback). Construction evidently began at the north end and progressed southward, the rooms being increasingly larger and better built in that direction.<sup>8</sup> Hearths floored or lined with flat stones were found in several rooms, in some cases two to a room. Under room 12 were two hearths, not connected with the room itself, but suggesting occupation of the site previous to the beginning of masonry construction.

Among brief descriptions of the artifacts recovered, Holden mentions that

A comparison of the A-C sherds with sherds from the Tarbox ruin, something like twenty miles to the northeast, shows the two types to be similar in appearance, workmanship, and material; but all the A-C potsherds have, a thin black slip on the inside while those from Tarbox have no slip. . . .

It is significant to note that no arrow points were found in the excavation. . . . It is also to be remembered that no arrow points were found in the Tarbox. Many were found on the surface, but none on or near the old floor levels. Spear heads were found there in abundance, but no arrow heads. . . .<sup>9</sup>

Though perhaps only an accidental omission, no mention occurs in this report of diamond-shaped, four-bevel flint knives, which have been found in nearly every Canadian ruin. A few fragments of bison-scapula hoe blades were recovered from different rooms.

In the summer of 1930 another student expedition under Holden made attempts to find connecting links between the Puebloan and Canadian Valley cultures in east-central New Mexico.<sup>10</sup> Tecolote Ruin, on Tecolote River, was partially explored. As this site is near the Santa Fe-Las Vegas highway and not far east of Pecos Pueblo, it is not surprising that Tecolote Ruin was

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<sup>8</sup> It appears to me, however, that some of the very small, irregular, north "rooms" might have been storage bins (see Holden, W. C., *The Canadian Valley Expedition of March, 1930*, fig. 1). Many stone-walled bins were built adjacent to regular rooms at Alibates.

<sup>9</sup> This statement on Antelope Creek Ruin was altered by Johnson, who found arrow points associated with the rooms. (Johnson, C. Stewart, *A Report on the Antelope Creek Ruin.*)

<sup>10</sup> Holden, W. C., *Texas Tech Archaeological Expedition Summer 1930.*

wholly Puebloan. No suggestion of Canadian Valley architecture or artifacts appeared.

Moorehead, in his well-known work on the archaeology of the Arkansas River Valley,"<sup>11</sup> re-mentioned many of the sites visited by him in 1919-1920, and quoted extensively from the works of Mason and Holden already discussed above. The reader will find in this book the best photographs yet available of the topography, vegetation, sites, pottery, and other artifacts typical of the Canadian ruins and the nearby Wolf Creek sites. Further brief notes on Cottonwood, Tarbox, Dixon Creek, King, and Handley ruins add little specific information on the area. Many graves in stone-lined cists were observed but few, apparently, were cleared. The most important new information concerns a strange structure called Gould ruin, part of the Handley group on Wolf Creek, Ochiltree County. Moorehead's party spent some three weeks here. The Gould ruin or "Temple" was a rectangular enclosure, described as follows:

. . . Its major axis along the east wall is 70 feet, and the southern end is 23 feet in diameter, whereas the northern measured 34 feet 6 inches wide. Within and without the soil is dark and heavy. . . "

The west wall, Figure 32, 62 feet in length, was more prominent than the east, and the stones were larger. There were 4 openings or doorways. In some places the diameter of this wall is almost 5 feet.

The east wall, shown in Figure 34 is lower and not quite so massive, and there are 5 openings or doorways. In the foreground the 2 blocks of wall between the openings are chiefly of adobe and not so much stone, although slabs were used to hold the adobe in place. A marked contrast is observed in the rest of the wall, which like the western wall, is almost entirely composed of stone. Our party extended a trench outside the west wall, full length of the building, finding near the center a large ash pit or fireplace, 5 or 6 feet in extent.

It was long in use, being hard burned, and its base was some 5 feet below the present surface, and extended under the wall. With this discovery, we were led to the conclusion that a lodge site existed before the walls of Gould ruin were erected. Indeed, 2 or 3 ruins presented similar conditions. . . .

A trench nearly 60 feet in length was extended through the center of Gould ruin from north to south. About 18 inches down the ground was found very hard, probably an upper floor, if there were two floors. . . . Near the south end of the trench we found a fragmentary bunched burial, down 20 inches no skull and no large bones. In the small room marked A on the diagram, Figure 33, were portions of another skeleton, a broken skull, femur, tibia, and fragmentary arm bones. This room, A, was the only one we could positively identify. It was very small, 4 feet 8 inches in diameter, and adobe walls extended to a height of about 2 feet. . . .

The artifacts discovered were not numerous, and consisted of small arrow points, a few knives, and fragments of several bone hide dressing tools. Some of these are shown in Figure 41. . . .<sup>12</sup>

The chief point of interest here is the occurrence of graves within a large rectangular walled enclosure with open "doorways." Pottery is said only not to be of Pueblo forms. Brief notes are given on other buildings in the

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<sup>11</sup> Moorehead, W. K, *Archaeology of the Arkansas River Valley*.

<sup>12</sup> *Idem.*, pp. 100-102.

Handley group. In one, also called "Handley ruin," another burial was found within a room. The impression gained is that the Handley group consists principally, if not entirely, of single stone rooms thickly clustered over a large area, rather than that there are large multiple-roomed structure. This, if true, is of considerable importance in comparison with the ruins farther west in the Canadian Valley proper. Again, Moorehead's statement on the Wolf Creek valley as a whole is interesting:

We are of the opinion that it was inhabited prior to the erection of the stone ruins because, as previously stated, we found fire pits, chips, and buffalo bones, in the banks of Wolf Creek, at various points on the plain, and occasionally under the walls themselves. In most of these no pottery was in evidence, all of which is important. . . .<sup>13</sup>

In his conclusions, Moorehead went into considerable detail to validate his theory that the "Texas Panhandle Culture" represents an ancient form of life dependent on the bison and agriculture, that the art of masonry was hit upon there, and that as this art spread westward into New Mexico it formed the basis upon which Southwestern Pueblo an architecture and associated culture gradually developed. "Certainly there is steady improvement in architecture and art upstream from Handley and King ruins until we reach well defined Pueblo settlements at the head of the Mora." That the Panhandle villages represent peripheral Pueblo an culture he regarded as improbable because this would entail complete loss of Pueblo an ceramic art.<sup>14</sup>

Holden, in a letter to Moorehead<sup>15</sup> gives a clear statement of three alternative interpretations. In addition to the two discussed by Moorehead (above), Holden suggests that "A third alternative would be that the Panhandle culture had no relationship to the Southwestern Pueblo culture, and that it was a glorified Plains development which existed during early Pueblo time or before."

Studer, in a chapter added to Moorehead's study, gives a summary of his work and discovery in the northern Panhandle area.<sup>16</sup> Up to that time (1931), he had located and mapped 110 "major ruins" in 23 years of investigation, together with "Plains sites in abundance." To the masonry villages Studer gave the name "Post Basket Maker culture," while "Plains" designates camp sites attributable to bison-hunting nomads without agriculture or pottery, and marked by rings of stones which probably were used to weight tipi covers. In addition to these, Studer had located a few rock shelters in the canyons, sand-dune sites farther south in the arid expanses of the Llano Estacado, and numerous pictographs.

Studer's account includes the interesting statement that, "Perhaps, without exception, every Post Basket Maker site shows an intrusive, or later occupation, by the Plains tribes." Site 80 is a "Plains" camp, on which were found considerable flint fragments, broken flint artifacts, fewer bones than usual,

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<sup>13</sup> /dem., p. 105.

<sup>14</sup> *Idem.*, pp. 120-130.

<sup>15</sup> *Idem.*, pp. 129-130.

<sup>16</sup> Studer, Floyd V., *Archaeological Survey of the North Panhandle of Texas.*

"exceedingly large spear points," a beautiful lance point, of flint foreign to this section, and many hide scrapers, three of which "were somewhat unusual for this section in that they were triangular and worked on all three sides." No pottery was found.<sup>17</sup>

Studer goes on to describe site 63, Saddleback Ruin, on the south side of the Canadian Valley opposite the town of Tascosa, and one of the more westerly sites in the Panhandle. This building "has not less than 12 rooms," and "shows long occupancy by these people, followed by Plains occupation, which latter is a matter of historical record. It was here that intrusive Pueblo-Pecos pottery was found." This, however, is not the only ruin to yield such pottery. Two rooms were opened, one of which gave the respectable dimensions of 29 by 15 feet, the adjacent one 11 by 14; feet. The first of these revealed four superimposed floors, the uppermost one foot and four inches below the surface, the lowest five feet six inches deep and resting on bedrock.

Between each floor level was found an unusual amount of buffalo, deer, antelope, turkey and other bird bones. . . . Many pieces of pottery, several bird points and scrapers were at a depth of 5 feet 6 inches.<sup>18</sup>

Other artifacts recovered include "an unusually large amount of whole and broken metates," many manos; one tubular pipe, a combined hide scraper, and drill, several beautiful bone implements, including an incised awl, "a great number of perfect points," "many beveled types, one perfect specimen being a double beveled knife," and obsidian flakes, of which one worked specimen is stated to be the only worked obsidian found by Mr. Studer, although most of the sites show obsidian flakes.

Another ruin, site 13, is mentioned. One large rectangular room measured 25 by 30 feet, but "most of these rooms are small." Only one potsherd was found here, several "arrowheads of flint and quartzite," two metates, two manos, and two "unusual notched knives." Still another ruin, site 85, Studer estimates to contain 60 to 80 rooms. There is also a brief description of the great flint mine, site 58, from which source comes the vast amount of red-banded "Alibates flint" or agatized dolomite used so commonly throughout the Panhandle for chipped artifacts.

Burials are said to be found in abandoned rooms and in proximity to the ruins. Some are either covered with large, loose stones, or surrounded with stone slabs set on edge. In some instances, however, these "small circular stone affairs of vertical masonry" probably do not represent graves, for they contain no skeletal material. That is, they seem rather to have been storage cists; while, conversely, storage cists appear to have been at times used as graves.<sup>19</sup>

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<sup>17</sup> Site 80 is two miles from a stone ruin, site 5, on the north side of the Canadian, Potter

County (see map, Moorehead, W. K., *Archaeology of the Arkansas River Valley*).

<sup>18</sup> See his figures 69-71 for locus of ruin and stratigraphy of room A.

<sup>19</sup> When visiting Alibates Ruin in July, 1945, some of these stone-lined cists were pointed out by Mr. Studer. Many of them, at least those nearest the building walls, were probably originally storage cists for the walls were carefully chinked with small stones, evidently as rodent-proof mg. The sides slope slightly, while the bottoms are flat. Flexed burials are thus found in circular or oval pits lined, with slabs and apparently made specifically as graves while other burials were placed in abandoned cists; chinked cists are found outside the buildings, however, while stone-lined graves may be found either inside or outside. Mr. Studer plans to publish this material in detail.

Under "General Observations," Studer lists traits which apparently apply to the northern Panhandle as an area, including both Post Basket Maker and Plains sites. The following, however, apply to the masonry rooms:

The rooms of all these sites vary in size, and shape, therefore no approximate measurements can be given. Some are as small as 6 or 7 feet square, and others 20 to 30 feet in extent. Some of the square, or rectangular outlines, show many rooms upon excavation. The fire pits are very interesting and are of two types. One made of plaster, or adobe, was 12 inches deep and 20 inches, across, with a raised edge of clay around each pit. The adobe, or burnt clay, was quite smooth and the fire pit symmetrical. Other types are made of small, flat stones, even as we would build a hearth today. A few mortar holes, in solid rocks, are found, but the metate or grinding stones predominate for they are portable. We do not observe many objects for personal adornment. I have observed no irrigation ditches, yet it is reasonable to assume they practised irrigation. One 'cist' at site No. 77 was 7 feet in diameter at its widest point, and oval shaped rather than round. Flat, well laid stones extended to a depth of 7 feet. There was undisturbed soil beneath the flat stones. A few bones, charcoal and ashes were found, but there was no evidence of skeletal remains.<sup>20</sup>

Two years later, Holden published a description of excavations at Saddleback Ruin, a single building containing 33 rooms.<sup>21</sup> The method of building walls with vertical slabs is again reviewed, and the dimensions of each room with the thickness of its walls given in some detail. In this structure there was a fair amount of horizontal masonry, especially in the eastern outside wall, which "is of horizontal masonry and is of good workmanship, showing that the original Panhandle masons could do good work on occasion. The stones are sized and evenly placed. Often the inside partition walls are composed of a first course of heavy slab-stone upon which crude horizontal masonry is super-imposed." He notes that several of the rooms at Saddleback are too small, or their floors too steeply inclined, to have served for living purposes, and hence may have been storage rooms or bins built against the sides of living rooms. No doors were found, and "it is probable that entrance into the rooms was through hatch-ways in the roof." It may be seen in Holden's plate 11 that the smaller rooms or bins are of various shapes--rounded, rectangular, oval, triangular, etc., but they were all built into a single multiple-roomed pueblo which is itself of triangular shape.

There is no mention of interior posts. That the roofs were made of light poles with clay covering is shown by the discovery of a lump of hard, reddish adobe with impressions of small poles and twigs on one side. Room 10 is said to have had in it a plastered "cist" with stones laid flat around it; from the description this would seem rather to have been a fire basin with prepared clay lining. Room 25, with four floor levels, contained a hearth in the second level, against the north wall. This was rectangular, four feet long and 18 inches wide, lined with "flat stones on edge in such a way that the wall formed the back side."

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<sup>20</sup> Studer, Floyd V., *Archaeological Survey of the North Panhandle of Texas*.

<sup>21</sup> Holden, VV. C., *Texas Tech Archaeological Expedition Summer 1930*.

Since flint artifacts are mentioned as "of the Panhandle Indians," it is not clear whether those listed were actually found at Saddleback. If so, the site yielded triangular arrow points, diamond-shaped beveled knives, and snub-nosed scrapers, awls fashioned from "shin bones of antelope, the leg bones of turkeys, and the rib bones of larger animals," bones with grooves cut across them, antler flaking tools, and "spades made from buffalo femurs." A total of 4,901 cordmarked potsherds were recovered in the one ruin, and subdivided into 3,034 grey, 1,215 orange and red, and 625 so fire-blackened their original color is unknown. Temper is stated to consist of quartz and mica. Other artifacts are again referred to "the Panhandle Indians," including pipes of clay and soapstone, turquoise pendants, necklaces, turquoise inlaid objects, "certain kinds of shell beads from the Pacific coast," rattles made of terrapin shells encasing small, black, polished pebbles, necklaces of bone beads, and "metates."

Most important was the finding of about two dozen potsherds from the Pueblo area. Taken to the Laboratory of Anthropology in Santa Fe, these were identified by Mera and Nusbaum as of Glaze I and Biscuit A types. From this proved contact with Puebloans of the Upper Rio Grande area, Holden infers that the peoples of the Texas Panhandle might also have acquired Puebloan social institutions, especially in view of their settled mode of life in large communal houses, and partial dependency on agriculture.

In 1934, Studer published an account of Ruin No. 55,<sup>22</sup> located in Potter County, 38 miles north of Amarillo, not far from Alibates Ruin. The name Texas Panhandle Culture Ruins is here adopted for the masonry houses, replacing the term "Post Basket Maker." Studer mentions that three ruins of similar, if not the same culture, were recently reported to him from the vicinity of Optima, in the Oklahoma Panhandle, by Mr. C. S. Johnson, thus extending the probable range of this general civilization farther north. Several general observations on the Canadian Valley stone buildings are given:

Among the several types of house structure found are pit houses, circular slab houses, and rectangular houses of stone or adobe. Some were semi-subterranean, some were built on mesa tops, others apparently were on original ground level, and a few were built to utilize vertical cliff walls. The houses containing rectangular rooms of rock and mortar with roof supports of posts predominate. This type of structure appears to correspond somewhat to the houses of the Basketmaker III, Pueblo I and II Culture phase. In several respects these people advanced well into the Pueblo horizons. . . .

Most of the ruins indicate the builders followed no definite plan of house construction. There is one house plan example, however, showing a very definite original arrangement of rooms. Many semicircular rooms, uniform in shape and size, were built adjacent to arid utilizing one wall of a large rectangular cluster of romps. These clan houses, while perhaps small in size compared to the true Pueblo ruins and cliff houses, are many in number.

It is not stated which ruin is referred to in the last paragraph quoted. From the plan given of Ruin 55 (Studer's plate 14), it is not this site, for its rooms are all square to rectangular, with a number of circular structures or cists

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<sup>22</sup> Studer, Floyd V., *Texas Panhandle Culture Ruin No. 55*.

lying nearby but separate from the main building. Possibly Antelope Creek Ruin is the one indicated, to judge from an excellent scale model on display in the Panhandle Plains Historical Society Museum in Canyon, Texas. This model includes a number of extremely interesting features which are treated in more detail below.

Of Ruin 55 itself, we learn that it is "a typical unit-type dwelling, built with indefinite original plans." New rooms were built "when needed," with much re-building on top of rooms destroyed by fire. Fire had evidently razed the whole structure more than once, complicating the task of reconstructing its history. In the north wall of room A there again appears a combination of horizontally laid masonry above the characteristic vertical construction. Wall plaster remained in place in several rooms, concealing the masonry, but irregularly laid stones in massive adobe were seen here and there. "More adobe-mortar and less stone work appears than in the other ruins." More evidence concerning roofs was gathered here in the form of interior post holes and much hardened clay with imprints of reeds. Excavations along the eastern side showed that the rooms had been dug only slightly below the original ground level. No communicating doorways were found between rooms.

Rooms A and B are described by Studer in some detail, summarized here. Room A, rectangular, measured 17 feet east to west and 22 feet north to south, inside the walls. Within this space was a rectangular pit seven by eight feet, sunk 12 inches below the "lower floor level." The sides of this pit were smoothly plastered and the corners "nicely rounded." The plaster was about one inch thick and well burned. Dug flush with the floor of this (or another) pit was a fire basin, circular and bowl-like; 26 inches in diameter and 10 inches deep, also well plastered. It had no raised rim or curb, and was filled with "clean, white wood ashes." The position of the sunken rectangular areas is not given, but the circular fire basin was three feet four inches into the room from the "ventilator" about to be described. .

At about the center of the east wall, a long masonry tunnel was found, extending 13 inches into the room, and about 10 feet outward to the east. This tunnel was 18 inches wide and 18 inches high, square in cross section, and of uniform dimensions from end to end. It entered the room on a "level floor," hence seems to have been placed well above the circular fire basin in the rectangular pit, for *this* pit was dug from the lower floor. Mr. Studer refers to this tunnel as a "ventilator" and, "No deflector was in place, though a few stone slabs were found in about the right location."<sup>23</sup>

Several holes were discovered in the floor of room A, some probably marking the location of upright support posts, but one located within the rectangular depression "was perhaps the sipapu, if this room is finally determined to be a kiva or ceremonial room." This room had a fill averaging four to five feet deep, of which the upper foot was "rather barren wind and water borne sand and clay," Unburned artifacts were found in the upper parts

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<sup>23</sup> Although I have difficulty in visualizing the exact relationship between the "ventilator," floors, and pits in this room, Studer's plate 13 shows them in part.

of the fill, while in the lower parts burned artifacts occurred including bits of wiled basketry. The floors were unusually hard and well smoothed.

Room B, adjacent to room A on the south, was of similar size and proportions; except that the west wall was oblique. The charred remains of four central supporting posts were found toward the center and in the "lower floor." Wall plaster is said to have been in splendid condition. Like room A, there was a "ventilator" extending from the east wall; it was only four feet long and unroofed, but parts of it may have been washed away. This passage was 20 inches wide and its walls two and a half feet high. It opened directly onto a large rectangular pit within the, house which extended completely across from the east to the west wall, and there was "a nicely plastered apron around the aperture." The shaft itself extended 27 inches into the room, at which end the walls were eight inches thick, well rounded and plastered.

The long pit into which the "ventilator" opened within the room appeared "to have been used in its entirety as a fire place" and was seven inches lower than the lower floor level. As the floor of the ventilator was flush with this lower floor level, the pit bottom was seven inches lower than the mouth of the ventilator. This "fire pit" was 13 feet, 11 inches long, three feet two inches wide at the east or ventilator end, expanded to a width of four feet seven inches in the center, and narrowed to a width of two feet three inches at the west wall. Expansion at the center may have been made to accommodate the four centerposts, the holes of which were, within the pit. Its side walls were "uniformly rounded and plastered." The floor itself sloped gently away from this trench, toward the north and south walls. Actually, this room had two floors, separated by 21 inches of rubble fill, probably indicating that a new house had been built on top of a previous one, destroyed by fire. No holes in the floor were found "to suggest a 'sipapu,'" and no deflector was in place, but several flat slabs lay on the floor near the ventilator. In the southeast corner was a slab-lined storage bin, 30 inches across and 13 inches deep. Another bin about three feet square (stones not mentioned) was found in the northeast corner.

We have here for the first time a brief description of storage cists which helps to clarify this important point:

Storage pits and bins are found in the floors of various rooms, and near the houses. The bins within the dwelling[s] were round and rectangular in shape; one example was lined with stone [room B], but the usual types were merely pits dug in floors. A few of them were plastered.

The outside cists were placed at most any convenient location. They were built by first digging a round or oval pit in the ground. The walls were lined with flat stones over which plaster was probably placed. A superstructure of brush was probably used as a covering. Occasionally a double row of slabs were used as the first circle of stone. One example was 5 feet long, 4 feet wide, and .3 feet deep. Each cist examined contained the usual house refuse. The number found indicates that the people had much use for the storage places.

As in practically every ruin excavated, No. 55 had a refuse heap on one side of the pueblo. These are often referred to as "mounds" in the reports, but it should be clear that they are purely incidental accumulations. . That at

No. 55 was about three feet high, and it is interesting to note that it consisted of "well defined strata" revealing ashes, charcoal, broken bones, wind-blown sand, washed-in clay and sand, potsherds, flint and bone artifacts, and charred corn cobs. Studer adds that no burials have been discovered in the refuse heaps at any location.

No burials were found within rooms at No. 55, but no floors had yet been removed. The remains of two children were discovered on a mesa top nearby. They were 30 inches below the present surface and three feet apart, heads to the east. A large flat stone had been placed on top of each body, and the grave (or graves) were marked on the surface by irregularly laid stones. Only portions of the skulls and finger bones remained, but it was ascertained that 56 pierced *Olivella* shell beads and a mussel shell pendant were around the neck of one child, the only artifacts with the burials.

Here Studer includes the description of "a splendid burial example" of the Texas Panhandle Culture. This was discovered at Ruin 28, not part of No. 55 but near by. The burial was on a hillside slope within 30 feet of the house walls. A number of stones were placed on edge and sloping inward, around a circular pit six feet four inches, inside measure, and 27 inches deep. The skeleton was flexed and placed upon an adobe shelf 37 inches long, head north with face east. Six rectangular stones about four by six inches lay on top of it. There were many broken sherds near the skull, probably representing a restorable vessel. This, so far as I know, is the sole reference in the Panhandle area to possible inclusion of a pottery vessel in a grave.

As the report of Ruin 55 includes the most complete artifact inventory of any Panhandle pueblo to date, all the traits mentioned are compiled below, with Studer's plate numbers. It must be assumed, for lack of statements to the contrary, that all these traits form a single association with the stone building.

Woven material:

Carbonized fragments of coiled basketry, bundle fibers, and grass matting found deep in rooms A and B. Some basket fragments large enough to estimate size of vessel; multiple-rod foundation (?), willow (?), yucca-strip (?) thread.

Bone:

Numerically, awls rank first; including cut, shaped, and polished splinters of leg bone and rib, probably deer and antelope. Some awls have heads completely worked down (P1. 16); some have incised-line decoration. Some stubby-pointed implements of leg bone probably flaking tools. Several "scrapers" of deer and antelope scapulae. Two "sounding rasps" of deer or antelope scapulae (rooms A, B) and five bison ribs with notches cut across edge and side but not completely around (P1. 16). Also listed but not described: disc and tubular beads, punches, fleshers, needles, spatulate awls, worked and unworked antler material.

Shell:

Mussel shell pendants; polished and pierced, most common; also a "sizeable number" of *Olivella* and other Pacific shells in burials and rooms; *Olivellas* have tip ground off.

## Stone:

Whole and broken "metates" of quartzite, sandstone, and dolomite, on surface and within ruins, "typical" specimen 20 by 14 by 4 inches, the "trough" (actually, an oval basin) worn in both sides. Manos usually oval, worn on both sides, same materials as "metates." Mortar holes in large immovable boulders; no stone pestles. Many hammerstones, various sizes, of flint and dolomite. Chipped axes present, but none polished or notched. "Arrow points" of flint, leaf-shaped, small plain triangular, and small triangular with side notches (P1. 16). Flint "drills or perforators," butt ends usually unshaped (P1. 16). Flint side scrapers and snub-nosed end scrapers (P1. 16); many knives, diamond-shaped form with four beveled edges predominating (P1. 16). Also mentioned but not described: picks, hoes, pendants of turquoise and other polished stones, mauls, arrow-shaft polishers, smoothers, and pot polishers.

## Pottery:

Despite large numbers of sherds, no complete vessels found; those most nearly complete (P1. 15) indicate "nearly all were fairly wide-mouthed, cylindrical-necked, round bottomed, globular bodied vessels," probably all intended for culinary use alone. Examination does not reveal "any particular change in shape, composition, or progressive development." Stratigraphic tests reveal no change. Nearly all sherds bear impression of cords on exterior. Interiors range from poorly smoothed to well smoothed. Thickness ranges from very thin to very thick. Of colors, black predominates, while some are gray, dark gray, and light red. Black appears in the center (core) of some sherds, (due to low firing, non-oxidizing temperatures). Tempers are sand, shell, mica.<sup>24</sup> Paste usually very coarse. A red "slip" or "fugitive red" found on some sherds, difficult to remove. Possible handles found, none attached to sherds. One typical vessel about 11 inches high, 10½ inches greatest diameter, mouth 8 inches, thickness ¼ inch, neck vertical and 2¼ inches high (incomplete). Several tubular pipes of pottery found; one (P1. 15, No. 54) from room T, 2½ inches long, mouth one inch across, bowl one inch deep, decorated with groups of dots, indentures, and cross.

## Unfired clay:

Several pieces, smoothed inside and out, on lower floor room B, "indicate a sun dried jar or pot"; thickness about ½ inch, clay yellowish and without temper; probably molded by hand. A small jar or bowl (P1. 15, No. 55) found in same place, consists of 3 pieces equalling one-fourth of vessel; height 2 inches, diameter two inches, thickness ¼ inch; cord marked, with some fingernail punctations.

## Food remains:

Apparently general: numerous charred corn cobs found within ruins. Numerous bones of bison, deer, antelope, rabbit, and turkey found in refuse heaps and within rooms. Mesquite beans, plums, grapes, acorns, and tuberous plant (*Rumex hymenosepalus*) grow in the region today and were probably utilized.

Probably all the items given apply specifically to Ruin 55, with exception of the food remains. There is a specific statement that no intrusive Pueblo

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<sup>24</sup> This identification of shell tempering is probably open to question. My observation of Panhandle pottery is that no shell occurs whatever. Some sherds, however, contain abundant fragments of crushed animal bone which, when fired, turn white and pale blue, somewhat resembling shell flakes.

ware was found either in the ruin or on the surface of site 55. It is added that "The writer has found a number of true Pueblo-ware" sherds at several other Panhandle Culture sites in this area."

No further reports were published until C. Stewart Johnson reported on further excavations at the important Antelope Creek Ruin.<sup>25</sup> This work was conducted by the Works Progress Administration with the sponsorship of the West Texas State College, Canyon, Texas, under the direction of Floyd V. Studer. Most important, an excellent scale model reproduction of the ruin was made and is now on display in the museum of the Panhandle Plains Historical Society at Canyon. This model clarifies many significant points of construction which are not brought out in the various published accounts (see pp. 32-34).

Antelope Creek Ruin, previously described in part by Dr. Holden in 1930 (see pp. 20-21 above), lies on the west bank of Antelope Creek, a small tributary flowing northward to the Canadian, in the southwest corner of Hutchinson County, three miles east and one mile north of Fritch. This is about 40 miles northeast of Amarillo and approximately midway between" the western and eastern boundaries of the Texas Panhandle. Significantly, Johnson states that the walls of the building can be traced on the present surface only by the slight protrusion of vertical slabs belonging to the upper parts of the walls. Thus, the flat surface gives no indication of the actual depth of the floors,

. . . *which may be buried under several feet of wind-blown dust.* . . . The evidence in this location does not indicate that the houses were of the semi-subterranean type. (Italics mine.)

Johnson states that there were 23 rooms in the main part of the village, all of one story and adjoining one another in a block, the longer axis in a north to south direction. In agreement with Holden he thought that the rooms were progressively added from the north end toward the south.

The entrances are all low, averaging about three feet in height, and all are located on the east sides of the houses. . . . Each of the larger houses was provided with two small rooms which were possibly used for storage, between which was the entrance way leading into the main room. . . .

The small rooms on the east side of the ruin that adjoin the larger rooms do not seem to have been as high as the large rooms, and entrance to them was probably attained through the roof. Although their purpose is uncertain, it appears likely that they were used as storage chambers, as were also the circular, rock-lined cists in front of the ruin at the southeast end.

The floors of the larger rooms are unusual in construction, though characteristic of many of the Panhandle Culture Ruins of both Texas and Oklahoma. Against the west wall there is an adobe platform, the purpose of which is unknown. This platform is about sixteen inches in height, and five feet square. From the platform toward the entrance the floor is flat but depressed several inches, and in its center is the basin-shaped fire pit. Bordering this depressed portion of the floor on both sides are ridges several inches high by about six inches wide, which separate the depressed portion of the floor from the flat elevated portions that extend to the north and south walls. Over the entire surface the floors are hard and smooth with a thin pavement of sandy, buff colored clay.

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<sup>25</sup> Johnson, C. Stewart, *A Report on the Antelope Creek Ruin.*

The paragraphs just quoted are important for an understanding of the true nature of rooms which may be regarded as characteristic of the Canadian Valley pueblos. They constitute the best description to date, yet do not sufficiently emphasize the peculiar and unique construction. On a recent visit to the museum of the Panhandle Plains Historical Society in Canyon, I made a crude sketch of such a room reproduced in miniature beside the scale model of Antelope Creek Ruin. Next day, I was able to view several very similar cleared rooms at Alibates Ruin, through the courtesy and able guidance of Mr. Studer.<sup>26</sup> This visit was quite revealing in that, for the first time, it was possible to gain a fairly clear picture of the floor plan of typical rooms which, it now seems, are the rule rather than the exception, at most of the buildings so far excavated. Using my hasty notes and sketch, Miss Lester has been able to draw a very reasonable reproduction of this typical Anelope Creek house (fig. 1).

### Figure 1

Fig. 1. Idealized reconstruction of an Antelope Creek Focus house. Based on a scale model of Antelope Creek Ruin in the Panhandle Plains Historical Society Museum at Canyon, Texas, and reproduced by permission of Floyd V. Studer, director of archaeology. Inside measure of original house about 20 by 22 feet. Walls constructed of unshaped stones held with liberal quantities of adobe. Base of walls of main room formed by parallel lines of thin slabs set on edge. Stones of upper walls sometimes set in more regular horizontal courses than shown, but always set in adobe. Whole floor, wall interiors, firebasin, and ends of ventilator jutting into room were carefully and evenly plastered with clay or adobe. Side floors and square bank (altar?) at rear had raised and rounded curbs at edges. Note four holes for central roof supports, and slabs covering ventilator shaft, which invariably points to the east. Semi-circular anterooms probably used for storage. Entrance probably gained through roof hatch. The clay bank or altar at rear is only rarely found in these rooms.

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<sup>26</sup> Also present were Mr. H. C. Pipkin of Amarillo, and Dr. Clarence C. Webb and Clarence Webb, Jr. of Shreveport, La.

First of all, it should be noted that the main room is rectangular or nearly square, being slightly longer north and south than east-to-west. The walls of this room are of heavy masonry plastered over with clay, about three feet wide at the base and narrowing toward the top in the usual fashion. The floor is divided into three nearly equal sections by a depressed area running completely across from east to west and occupying about the middle one-third of the room. The north and south thirds are on an equal level, six inches higher than the central section. The north and south sections of the floor might be regarded as built-up clay banks on a floor which was originally level, but Mr. Studer is inclined to think that they represent the original ground level, whereas the central section was dug downward. These banks do not dip directly to the lower floor, but each has a raised and rounded curb at the edge. The entire floor was, probably plastered with a thin covering of adobe, carefully smoothed and evenly leveled. At the west end of the central depression there is a most interesting built-up clay bank, probably the one described by Johnson as being five feet square and about 16 inches high. Thus it is about 10 inches higher than the north and south floors. It is level on top and carefully smoothed and like the north and south floors, it has a raised and rounded rim or curb. This rim extends around three sides of the bank, the west wall forming its fourth side. It appears very likely that this bank represents an altar, although no one has reported finding any objects upon it.

Almost against the eastern corners of this bank or altar are two large post holes, and about six feet farther east are two more. The four large holes thus form nearly a perfect square some six feet across, about in the center of the room, although they may have been somewhat west of center. Exactly in the center of the square formed by the post holes, is a circular fire basin with a rather high raised rim; when found, the basin, rim, and floor around it were nicely smoothed with adobe, baked hard.

Adjoining the main room on the east are two semi-circular anterooms. Their walls are notably thinner than those of the main room, but well built and evenly curved. As they approach one another, they turn back toward the main room and straighten to form the sides of a masonry tunnel called by Johnson an "entranceway." The walls of this tunnel continue past the east wall, jutting about two feet into the room. The tunnel floor is level and flush with the sunken central portion of the main room floor, while the inner ends of the tunnel walls are smoothed with plaster.<sup>27</sup> The tunnel is square in cross-section, about 30 inches by 30 inches, inside measure. Its total length would have been about 12 feet. Since the two anterooms are each completely walled in, access must have been by individual roof hatches, or perhaps by short ladders from within the main room, for the partition walls are but little more than waist high. The anterooms may have served as corn bins or for other storage.

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<sup>27</sup> Johnson's Plate 41 gives an excellent view of a main room floor, its sunken central portion, and the plastered buttresses of the tunnel where it extends into the room. Another view is of a tunnel where it passes through an east wall with a "lintel" stone in place to bear the weight.

The complete scale model of Antelope Creek Ruin in the Canyon museum is an extremely interesting reconstruction of the whole pueblo, from ground to roof. It shows several rooms quite like the one described, here and there in the building, but not placed at any regular intervals. There are also several rooms which have the extended tunnel to the east, but lack the semicircular anterooms. The roof of the entire pueblo is shown as flat and covered with grass and adobe, while square hatchways in the roofs of larger rooms served as smoke holes and as entrances. Miniature ladders propped against these hatches lead downward into rooms as in the Pueblo villages of the Southwest. Large, thin slabs of rock are said to be found in some rooms in such a way as to suggest that these were once kept on the roof to serve as covers for the hatches. Similar large slabs have also been found at the mouths of tunnels, suggesting that they had merely to be swung around to close the tunnel.<sup>28</sup>

To summarize, the individual house reproduced in cross-section in the Canyon museum may be taken as representative of many Canadian Valley dwellings, except for the raised bank (altar?) opposite the tunnel mouth. Aside from this, such features as plastered walls, a plastered floor with its central portion sunk from six to ten inches below the sides, the raised and rounded curb along the edges of the two side banks, the placement of four central supports and a circular, plastered (or stone-lined) fire basin within the central depressed area, a tunnel which projects slightly into the room and extends outward to the east, and the seemingly careful alignment of such rooms in the cardinal directions, all seem to be fairly constant features of the larger rooms in the Canadian Valley pueblos. It must not be thought that all, or even most of the rooms, follow this pattern; for within each pueblo the reports constantly stress variety in shape and size. However, it appears to me that much of this variety applies to small anterooms, bins, or secondary rooms built to fill odd angles between other rooms. Again, partitions were often built to sub-divide original rooms. Still, if we take the accumulated knowledge of these structures which went into the reconstruction of Antelope Creek Ruin under Mr. Studer's direction, I think it may fairly be said that the features described for the larger rooms and shown in figure 1 are common enough in such sites as Antelope Creek, Alibates, Tarbox, Saddleback, Ruin 55, etc., to be regarded as typical of the more carefully built dwellings. Further, the depressed central section of such rooms now makes clear some of the numerous early references -to "upper" and "lower" floors. However, many houses had obviously been destroyed by fire in each ruin, then been rebuilt after covering the debris with clean soil.

It will have occurred to the reader that the masonry tunnels, so solidly built and consistently (perhaps invariably) aligned toward the east, if not entrances, must have performed some ceremonial function. In several cases, the possibility of stone "deflectors" in line with the tunnel has been mentioned. Whether or not rooms of this nature were specialized ceremonial

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<sup>28</sup> Johnson, C. Stewart, *A Report on the Antelope Creek Ruin*, p. 196; Mr. Studer, in conversation.

chambers is a question which must be left to further detailed study and comparison. The impression at present is that these were dwellings, and that the tunnels, while possibly serving some quasi-ceremonial function, were also of practical use in promoting fire draft and efficient circulation of air. Entrance must then have been gained through roof hatches. Occasionally, a round, walled structure has been reported as "possibly a crude kiva," etc., but as specific details are lacking, this important point cannot be settled.

Within the rooms and near the outer pueblo walls, numerous circular and oval cache pits have been reported. When their sides are lined with flat slabs placed on edge, these are commonly called "stone cists"; that they were used for food storage is indicated by the careful chinking of spaces between the stones. The dead were evidently sometimes placed in abandoned cists and covered with stones, but in other cases the descriptions suggest dug graves, oval and circular, with slabs around and on top of the skeleton. It is not clear whether burials found in rooms were placed in abandoned storage cists, or in prepared graves with, stone linings, or both.

To return to the account of Antelope Creek Ruin, several burials were found, all in rooms. One was found in the southwest corner of room 10, a very small room or, bin at the north end of the pueblo.<sup>29</sup> The others were in a single large room about 100 yards downhill from the pueblo. All were semi-flexed to tightly flexed, heads north and faces east. Age ranged from about two months to forty-five years. A knife, a drill, and one arrow point are mentioned as the sale artifacts with these burials. "One burial was uncovered in the east wall of the house, but the others were in the corners and close to the centers of the rooms [center of the room?] in cists which were cut down into the floor." The cists were oval with vertical sides. The bodies had been covered with six inches of earth, over which was placed a layer of stone slabs. The skulls are said not to have been artificially deformed.<sup>30</sup>

Artifacts listed are as follows:

Woven material: none.

Bone:

Awls most frequent (P1. 42). Hoes of bison scapulae, proximal end hafted, distal edge ground to a bevel. "Digging implements" of bison limb bones sharpened to a chisel-like point, some held in hand, others hafted by inserting stick into hole drilled in proximal end. "So-called sounding rasp"; i.e., notched bones. Deer antler used for flaking tools and handles "for various tools." A few small beads.

Shell:

*Olivella* beads. Mussels cut into pendants (P1. 42).

Stone:

"Metates," elliptical, of coarse-grained sandstone; oval basin shows rotary motion. Manos not mentioned. Arrow points: typical small side-notched triangular (P1. 42); some similar but unnotched (P1. 42). Knives mainly dia-

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<sup>29</sup> See plat in Holden, W. C., *The Canadian Valley Expedition of March, 1930*, fig. 1.

<sup>30</sup> Six skulls are on display in the Panhandle Plains Historical Society Museum, Canyon. These seem excellently repaired, and none reveal any deformation.

mond-shaped with four beveled edges (P1.42). Also "hide scrapers" (both side and snub-nosed) and "drills" of chipped flint (P1. 42) in abundance. Fragments of elbow pipes of fine-grained siltstones, incl. a reddish material resembling catlinite; also a grey argillaceous sandstone (P1. 42).

#### Pottery:

Description similar to Studer, 1934, except for following additions or differences: No handles; only variation in rim of universal jar shape is that it is either vertical or inclined outward slightly; no paint or slip of any kind (Studer reported a red slip occas found); hardness about 3.5; thickness aver. 7 mm.; temper generally "coarse sand"; interior always smooth but not polished; exterior always cord-marked and impressions often at angles to each other. Remark that cord-marked ware from Nebraska (Strong, 1935) and Mississippi (Collins, 1932) "seems to be indistinguishable from that of the Texas Panhandle."

#### Food remains:

Maize agriculture definitely proved by charred cobs and kernels. Raising of beans and squash inferred, "since they seem to be an inseparable part of the maize-beans-squash agricultural complex so widespread in aboriginal America"; however, no direct evidence. Refuse heaps rich in remains of bison, antelope, deer, rabbit, and turtle; occasional bird bones.

In addition, Johnson states that "several pieces of glazed pottery were found, which evidently came in as trade articles from the west and thus serve to establish the Antelope Creek Ruin as Early Pueblo IV of the Southwest." In his introduction he had remarked that Lowery had worked for several weeks in this site, finding several pieces of Pueblo pottery which Mera "correlated with Little Colorado Glaze I."<sup>31</sup> He concluded that there had been little, if any, cultural influence from the Pueblo area. On the other hand, pottery, bone, and stone implements, as well as "the general structure of the houses" (i.e., rectangular plan, four centerposts, extended "entrance" to east, central fire basin) led him to believe that "The affinities and relationships of the Panhandle Culture seem to be definitely correlated with the Upper Republican Culture of Nebraska as indicated by Wedel in his preliminary classification."<sup>32</sup>

Hobbs<sup>33</sup> has recently published certain notes on Alibates and Antelope Creek Ruins and presented a floor plan of a "typical" Alibates house. The details agree in all particulars with those given above (pp. 31-34) for the scale model of an Antelope Creek house in the museum at Canyon. Hobbs notes that Alibates "is made up of small rooms and small groups of large rooms." One instance of a wall constructed of small poles set vertically and plastered over with clay is mentioned. Also, it is said that some walls were set three to six inches below original ground level. The tunnels are called

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<sup>31</sup> Ernest J. Lowery, "The Archaeology of the Antelope Creek Ruin," Thesis for Master's Degree, Library of Texas Technological College, Lubbock, 1932. Kidder, A. V., *The Pottery of Pecos*, Vol. II, p. 608, has tentatively concluded that the year 1375 marks the beginning of importation of Glaze I pottery into the Pecos valley, north-central New Mexico, probably from the Little Colorado drainage area in west-central New Mexico.

<sup>32</sup> Wedel, Waldo R., *Reports on Field Work by the Archaeological Survey of the Nebraska State Historical Society*, p. 251.

<sup>33</sup> Hobbs, Hulda R., *Two Texas Panhandle Ruins*.

"passageways" despite being so low that they "could have been traversed only by stooping or crawling on hands and knees." And again, "In *some* of the Antelope Creek rooms there is a raised platform in the channel [central depression], against or very near the west wall. . . . It averaged about 7 feet north-south and 5½ feet east-west: In one case there was a "bin" on each side of the platform, while a "considerable number" of circular and oval pits, two to four feet across, were found in houses and often stone-lined.

In addition to trade sherds of St. Johns Polychrome, Aqua Fria black-on-red (Glaze A), and Cieneguilla glaze-on-yellow (Glaze A), Hobbs mentions an "incised ware, probably a Caddoan type," without comment on how such an identification is to be made.<sup>34</sup>

By way of conclusions, we may note the following important one:

The lack of changes in style of architecture, artifacts, and pottery, the homogeneity of refuse, and the presence of only one level of occupation in the majority of rooms, indicate that the ruins were occupied for a comparatively short time.

Mr. Ele Baker is quoted as feeling that the circular rooms have no kiva-like features. We also learn that

. . . the dwellings are a local variant of a Caddoan type of structure which has been reported in Nebraska, Kansas, Oklahoma, Arkansas, and eastern Texas. . . . The pottery is of a widely distributed Plains, probably Caddoan, type. Many diamond-shaped, or four-edged, beveled knives. . . are also said to be one of several traits which the Panhandle culture has in common with cultures of eastern Texas, southwestern Arkansas, and western Louisiana. . . . the type 1 rooms, pottery, and four-edged knives are mentioned here because they appear to be striking examples of a Caddoan type of culture.

I do not know by what magic such statements can be made as to the place of this material. What is "a Caddoan type of culture"? Even if the statements were based on the "Caddoan Root" concept, which apparently embraces nearly all archaeological remains associated with pottery in the Plains from Canada: to the Gulf of Mexico, what is the "Caddoan type of structure" to which these houses belong? A comparatively minor protest is that there is no record of similar pottery from eastern Texas, Arkansas, or Louisiana, and four-edged knives in this area are extremely rare and rather obviously trade pieces.

Accounts differ on whether the rooms were subterranean. Johnson specifically stated that such was not the case at Antelope Creek ruin, the buildings having been filled with wind-blown material.<sup>35</sup> My impression at Alibates Ruin was that these buildings had also been nearly filled with wind-blown dust shortly after abandonment; wash from slightly higher ground may also have contributed a small proportion of the fill. Mr. Studer at this time expressed his belief that many ruins had been filled in this way, for upon clear-

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<sup>34</sup> In examining pottery from these and other northern Panhandle sites, the writer has seen no examples even faintly suggesting an origin in the southern Caddo territory, or that of the "Caddo proper."

<sup>35</sup> Holden, W. C., *The Canadian Valley Expedition of March, 1930*, p. 25, had previously written that "Subsequent centuries of wind action filled in soil above the old floor of room 1 at Antelope Creek ruin."

ing the sand and soil from these walls, many are found to be excellently preserved; the sand must have filled around them rapidly enough to hold the walls upright before they could crumble or fall. Probably in no case was a building completely buried over the tops of the walls. Three or four feet of fill seems to be usual, with one to two feet of wall remaining exposed. Rains have washed the adobe mortar from exposed walls, thus loosening the rocks or leaving them protruding above the present surface, while the same walls will be almost perfectly preserved below the surface.

The problem of whether or not any of the Canadian Valley houses were built in excavated pits is important for two reasons: (1) for determining the presence of this trait for cultural comparisons, and (2) for its bearing on whether these agricultural villages were abandoned for reasons of climatic change. Besides the point given above that some, at least, of the ruins seem to have filled rapidly with wind-blown material (and possibly some wash) after abandonment, we may also consider that the tunnel or ventilator floors are level, whereas they would slant downward if leading into pit houses; also, they do not seem to have vertical flues at the end, leading to the surface, as do some of the Southwestern underground ventilators found in pit houses. Again, the rooms are grouped into apartments or pueblos, and for each unit added a new pit would have to be dug. This is, of course, not at all impossible, but if done we need evidence of it.

Mr. Studer, with his usual courtesy, supplied me with a picture of room 19 at Antelope Creek Ruin, which provides a clue to the manner in which the rooms were built. This shows a series of vertical slabs lining the *base of the wall*, around the room, while above them there is stone-and-adobe masonry (in this case, the wall stones are laid in rather neat horizontal courses, with several inches of adobe between the courses). It is possible or even probable that in this case the floor was first excavated to a depth of perhaps one foot, and the sides of the excavation lined with thin stone slabs set on edge as a sort of subsurface footing for the wall.<sup>35a</sup> The wall was then built upward, resting on the original surface bordering the pit edge. This should not be taken as an established fact, however, and archaeologists must await Mr. Studer's publication of this material for fuller and more reliable information.

Even though some of the Canadian Valley houses were constructed over shallow, slab-lined pits, it is nevertheless entirely likely that the walls themselves were above ground, and that the fill in and around the buildings was deposited by wind action during a period (or periods) of subnormal rainfall. The present sparse rainfall in the western Panhandle and the High Plains in general makes this region one of marginal utility for agriculture at the present day, and subject to disastrous droughts. The Texas Panhandle and much surrounding territory has even today not fully recovered from the devastations of the "Dust Bowl" drought of 1934-1936. A possibility of

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<sup>35a</sup> The effect is quite like that called "Slab Base Rubble" by Hawley, Florence, in *The Family Tree of Chaco Masonry* (pp, 250, 253), The Canadian Valley work may be a marginal survival of this building technique and probably dates some 400 years later than the 850-900 A.D. date given by Hawley for the Chaco area (see p, 65 below).

correlating the abandonment of these villages with droughts in western Nebraska in the 15th century is discussed on pp. 48-49.

On the other hand, a general evacuation due to persistent enemy pressure is not to be overlooked. The various authors have repeatedly remarked on the frequent burning of houses and the strategic position of many villages on promontories, mesas, and small terraces where they could be best defended. Not all the ruins, however, are found in defensive localities, and the burials do not seem to reveal effects of warfare such as arrow points in or between the bones. Needless to say, all these matters require serious attention and further observation in the field.