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SURVEY OF ARCHAEOLOGICAL REMAINS IN NORTHWESTERN CHIHUAHUA¹

ROBERT H. LISTER

THIS SURVEY was undertaken in 1936² at a time when a search was being made for the source of Chihuahua culture. The culture of Chihuahua had long been recognized as a component of the Pueblo pattern,³ but whether it developed from a southern or northern influence was the problem. Our work revealed no Mexican traits in the area, and since then, the general picture has been developed like this: (1) Chihuahua's earliest pottery-making culture was derived from a source in southern New Mexico of Mogollon affiliation, then received influence from the Mimbres area of southern New Mexico, and later was affected by the southward expanding Salado from southern Arizona;⁴ or, (2) that the early pottery-making culture came from a southern Mexican source and was later affected by the Mimbres and Salado.⁵ In either case, the culture developed with influences from Pueblo peoples. It is hoped that excavations in the area can be undertaken soon to determine whether early influence was from the north or south.

The apparent lack of well-stratified sites in Chihuahua has been a drawback in archaeological investigations. No sites with refuse heaps of any consequence were located by our survey. Sayles mentions obtaining some stratigraphy, but then adds that further investigations are required to confirm the relationships suggested by present data.⁶

1 A part of this article was originally published in the January 1939 issue of *Research*, a publication of the Graduate School, University of New Mexico, under the title of *A Report on the Excavation at Agua Zarca and La Morita in Chihuahua*. Since this publication has a very limited distribution, it is felt that the article can bear reprinting, and is here presented together with some additional information.

2 During two months of the summer of 1936, the University of New Mexico conducted a field session in anthropology in Chihuahua, Mexico. A group of twenty students, led by Dr Donald D. Brand, made the trip. Ten institutions were represented in the personnel of the party. For transportation four automobiles were used and a truck carried supplies. The session was devoted to the study of archaeology, natural history, and anthropogeography of the region. This report will deal only with the archaeological aspects of the session.

3 A. V. Kidder, *An Introduction to the Study of Southwestern Archaeology* (New Haven, 1924).

4 H. S. Gladwin in E. B. Sayles, *An Archaeological Survey of Chihuahua, Mexico* (Medallion Papers, no. 22, Gila Pueblo, Globe, Arizona, 1936).

5 Emil Haury, *The Problem of Contacts Between the Southwestern United States and Mexico* (Southwestern Journal of Anthropology, vol. 1, pp. 55-74, 1945).

6 Sayles, *op. cit.*

The relation between the cliff dwellings of the Sierra Madre Occidental and the sites in the valleys and in the inland basins was considered. We found that the cliff sites apparently were late developments and probably were built because pressure from other groups caused the Chihuahua people to retreat into the canyons of the mountains for protection.

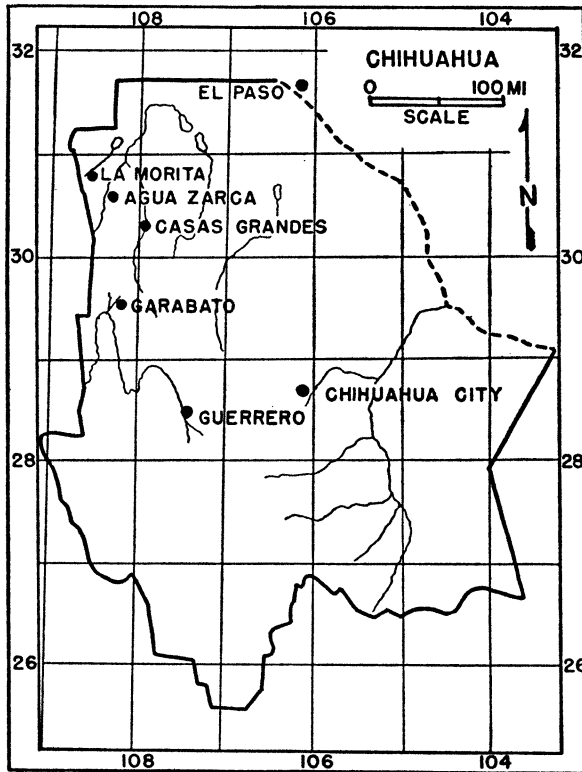


FIG. 1. Location of survey area, northwest Chihuahua, Mexico.

The first part of the survey trip was spent in visiting archaeological sites, making surface collections, and in general reconnaissance. The party travelled south from Ciudad Juarez to Chihuahua City, and then west to Guerrero. From Guerrero a trip into the eastern edge of the Sierra Madre Occidental was made. There, a week was spent in mapping and searching for cliff dwellings in the deep canyons of the Garabato and other rivers of the region. Leaving the Sierra Madre, the party travelled north into the Janos region, which is

located northwest of Casas Grandes. Stratigraphic investigations were carried on at two sites in that vicinity.

The principal work of the expedition may be divided into three phases: the Garabato survey, the excavation at the Agua Zarca site, and the excavation at La Morita site.

Our permit from the Mexican government allowed the collection of potsherds, stone, and shell material from the surface of archaeological sites, and also authorized us to carry on small stratigraphic excavations at sites in the municipality of Janos.⁷

The survey work on the Garabato River in the Sierra Madre Occidental was accomplished by sending small parties out from our camp to work the nearby regions. A number of ruins were examined, and some of them were mapped. The excavations carried on at the two mound sites consisted of running stratigraphic trenches. During the entire work, general field records were kept by all members of the party, with certain individuals having particular projects. This article is a synthesis of the work of the entire group.

THE GARABATO SURVEY

Location and physical landscape. The base for this survey was located about fourteen miles northwest of Las Varas, on the Garabato drainage. Las Varas lies at the western edge of the Babicora Plains, and in order to reach the Garabato one has to travel northwestward across the Sierra Madre Occidental. The summer of 1936 was the third successive dry season for that country, so the Garabato was not running at that time. Ordinarily, however, the Garabato flows into the Chico, which in turn enters the Papagochic, and finally the Papagochic joins the Rio Bavispe to form the Rio Yaqui.

This part of the Sierra Madre contains the most northern of the deep gorges or *barrancas*. Some of the canyons are over a thousand feet deep, having very steep walls into which numerous caves have been eroded. The flat-bedded volcanic tuffs of the region are especially amenable to the formation of caves. On the plateau and mesa tops, which are about 7,000 feet high, pine forests, oaks, and junipers are the common vegetation. The drier canyons contain oaks, junipers, agave, and madrones; in the moister canyon bottoms sycamores, elms, and maples grow.

The area covered by the survey included the canyons of the Garabato and

⁷ The author expresses his gratitude to the Mexican Dependencia Monumentos Prehispanicos, Secretaria de Educacion Pública, and especially its director, Ing Ignacio Marquina, for permission to carry on this research.

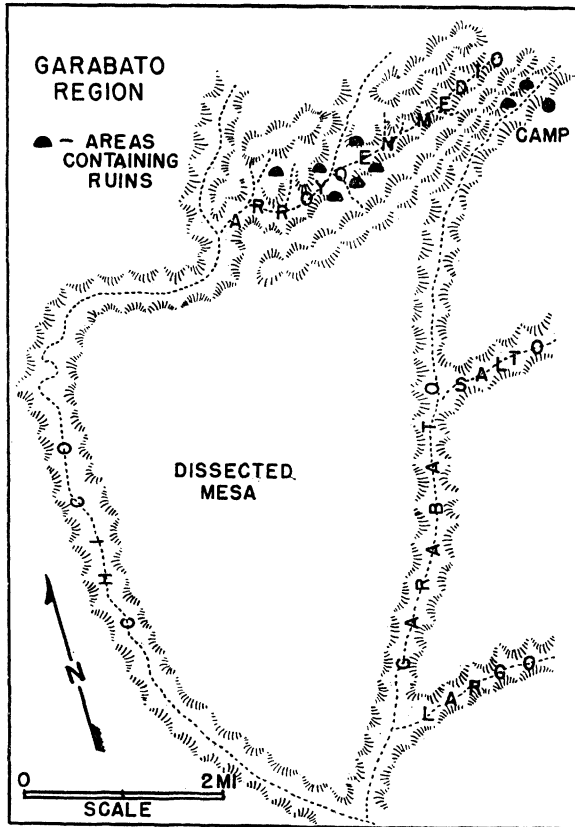


FIG. 2. Location of sites in the Garabato region, northwest Chihuahua.

Chico from their headwaters to their confluence, and the Arroyo en Medio which lies between the two rivers.

Previous work. Some of the ruins on the Garabato have been described or illustrated by earlier workers, including Lumholtz, Hewett, Carey, and Kidder.⁸

The ruins. As is the case with all Chihuahua ruins, the cliff dwellings have been pothunted to some extent; however, due to their inaccessibility they have

⁸ C. Lumholtz, *Unknown Mexico* (New York, 1902); E. L. Hewett, *Les communautés anciennes dans le désert américain* (Geneva, 1908); H. A. Carey, *An Analysis of the Northwestern Chihuahua Culture* (*American Anthropologist*, vol. 33, pp. 325-374, 1931); A. V. Kidder, *Notes on the Archaeology of the Babicora District, Chihuahua* (in *So Live the Works of Men*, Albuquerque, 1939).

not been as vandalized as have most of the mound sites. All of the ruins located were either on the Arroyo en Medio or on the Garabato. The Chico in this section flows through a very steep-walled canyon which does not offer suitable places for building habitations. Eight ruins and several rock shelters were located on the Garabato. On the Arroyo en Medio fourteen sites were examined.

In general, the cliff dwellings were located some distance above the bottoms of the canyons, under overhanging rocks, in shallow natural caves, or in clefts in the rock. In size the ruins varied from a single room to a three-story structure with at least thirty rooms. The walls were usually of puddled adobe, but sometimes small boulders were set into the adobe. In other cases walls were constructed of vertical poles set closely together and plastered on both sides with adobe. A few walls showed a *jacal*-like structure, being made up of small vertical poles covered with horizontal sticks, and then plastered over with adobe. The walls contained many openings. Doors were of the step-passage, Tau-shape, and rectangular types.⁹ Circular holes served as windows. Roofs were constructed of poles placed closely together and then covered with a thick layer of adobe. Sometimes split poles were employed in the roofs.

At none of the sites were large refuse heaps located. A small number of sherds were found, Playas Redware being the most predominant type. Babicora Polychrome and Casas Grandes Polychrome were also represented.

GARABATO NUMBER 1

This small ruin occupied a cleft in the rock, about 150 feet above the canyon bottom. The ruin was nicely built into the cleft, and contained three rooms, two on the ground floor and one above them. Walls were built of puddled adobe tempered with small pebbles and were about a foot in thickness. In several places the cave served as room walls, and it formed the ceiling of the upper room. Behind the two lower rooms there was a chamber formed by the back of the cave. A step-passage door led into the rear chamber. Rectangular openings occurred in these walls. The roof of the front lower room consisted of twenty-seven pine poles placed side by side, running from front to rear, and six poles running diagonally from the south wall of the cave. On top of the poles a thick layer of adobe was spread. This served as a floor for the upper room. The front wall of the upper room was built about a foot and a half back of the front wall of the lower room, creating a small second story balcony. The room

⁹ Carey (*Analysis of Northwestern Chihuahua Culture*) distinguished between the step-passage and Tau-shaped doors. The term Tau-shaped is applied only to those large apertures which actually have a T-form.

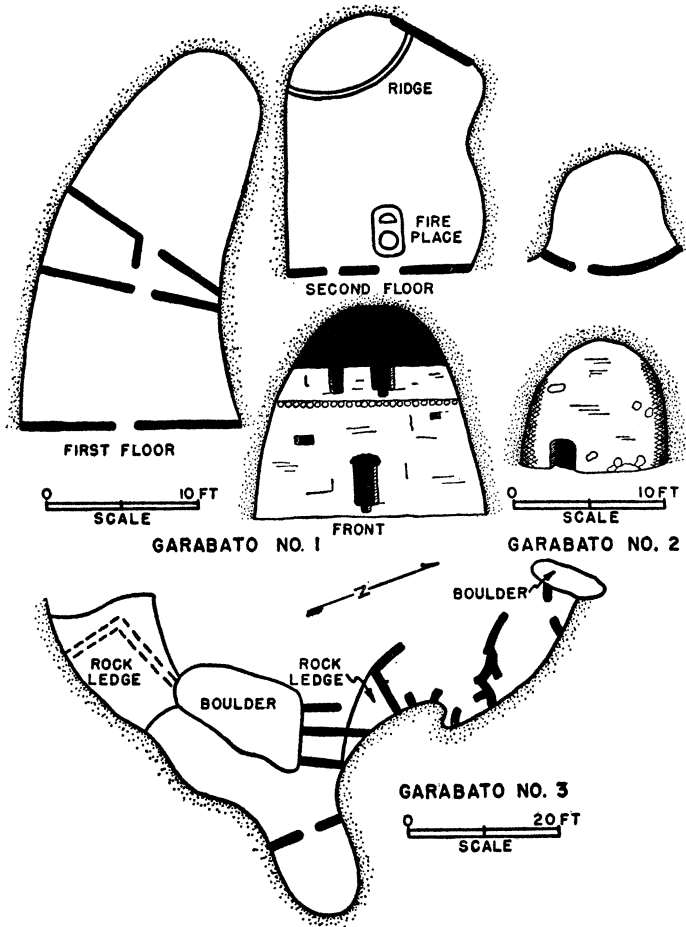


FIG. 3. Sketch plans and façade of Garabato cliff dwellings.

on the upper story had only one adobe wall, the front; the others consisted of the cave walls. In the front wall there were two doorways, one of the step-passage variety and the other rectangular in shape. The upper room contained a platform-and-depressed-basin type of fireplace made of adobe and a low adobe ridge, semi-circular in form, that cut off one corner of the room. A metate of basalt and three manos were observed in this site.

GARABATO NUMBER 2

This site consisted of a small cave, high on the face of the cliff, that had been walled up across the front. The adobe and stone wall was semicircular and curved in to meet the cliff face at the edges of the cave. The floor was very uneven. A small rectangular door was the only opening, and it appeared as though it had been made in the wall in rather recent times. This structure may have served as a granary.

GARABATO NUMBER 3

Because of the poorly preserved condition of this ruin not much information concerning it could be obtained. It was located in a shallow cave about fifty feet wide and approximately seventy-five feet above water. Within the cave, which contained a very irregular floor, there were several large boulders. Abutting against the boulders and cave wall were the remains of adobe walls; however, it was difficult to trace out any rooms. A rock ledge in the cave contained a number of depressions which appear to have been used as mortars.

GARABATO NUMBER 4

The protected ledge on which this ruin stood was about sixty feet long and twenty-five feet wide. It was located approximately four hundred feet above the canyon bottom. The cliff dwelling contained eight or ten rooms, but the outstanding feature of the ruin was a large granary perched on the edge of the ledge. The granary was about nine feet high and approximately six feet in diameter at the center, constructed of rolls of grass covered with adobe. Several wooden planks extended across the interior of the structure, their ends firmly set in the walls. These may have served as steps to get into the interior of the granary, or they may have been for support of the walls.

The rooms had puddled adobe and stone and adobe walls. Both rectangular and step-passage doorways were employed. Roofs consisted of adobe laid on closely spaced poles. One center post supported a beam that ran across the short axis of a room, apparently for additional roof bracing.

GARABATO NUMBER 5

Just a short distance south of Garabato Number 4 was a shallow cave located about fifty feet above water. The cave was only twelve feet in length and seven feet in depth. In it were the remains of walls indicating the former presence of at least two small rooms.

GARABATO NUMBER 6

The ruin was little more than a rock shelter, made up of two adobe walls enclosing a small recess in the face of the cliff. One wall with three small

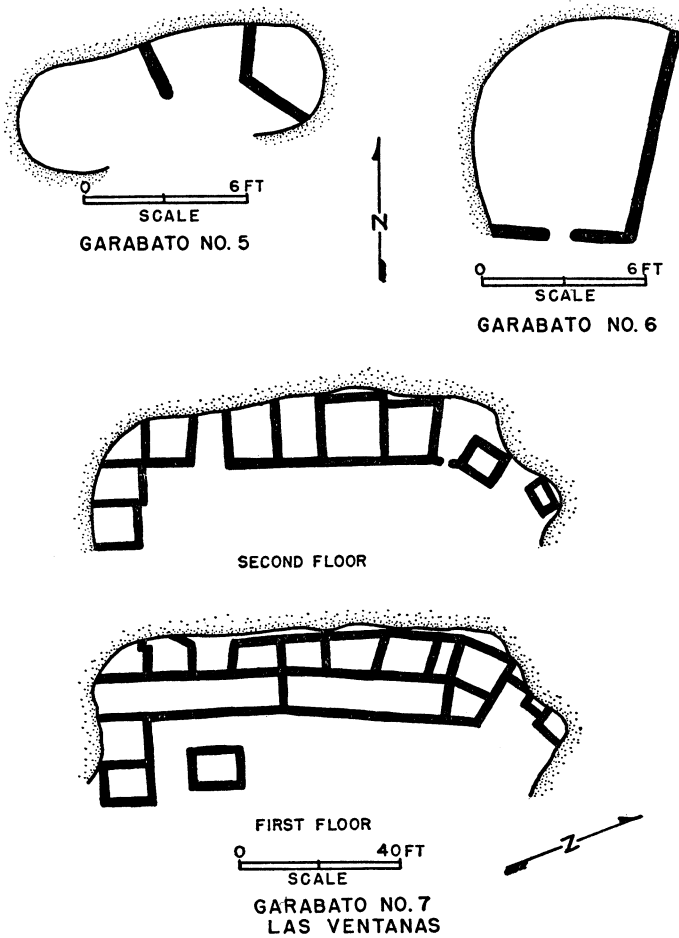


FIG. 4. Sketch-plans of Garabato cliff dwellings.

openings stood to a height of nearly eight feet. The other wall was badly broken down, but it had an opening that probably had been a rectangular doorway. The roof was completely destroyed. In the center of the floor was a rough spot where a beam-supporting pole may have rested. Two manos were found at this ruin.

GARABATO NUMBER 7

This was the largest site that we examined. It was built in a cave which was two hundred feet wide at its mouth, thirty-five feet deep, and was about eighty feet from the highest point on the overhanging cliff to the floor. The cave was reached after a steep three hundred fifty foot climb from the bottom of the canyon. This, the best known ruin in the region, had been examined by several other individuals.¹⁰ The ruin possessed at least thirty rooms, many still in a good state of preservation. The front row of rooms probably was only one story in height. The back rooms, built against the cave wall, were two stories high, and from marks on the roof of the cave there appear to have been a few third-story rooms originally. The predominant type of wall was one of puddled adobe; but walls of adobe mixed with rocks, and walls of vertical poles plastered with adobe inside and out were also noticed. Walls varied in thickness from seven inches to fifteen inches. There were many wall openings. Doorways were of three types: Tau, step-passageway, and rectangular. Small rectangular and circular wall holes were very numerous. One second-story room contained eighteen small rectangular openings, most of which had been sealed with slabs of wood. Because this room was so situated as to command all approaches to the cave, and if the openings had been look-out or loop holes, this room could very well have served as a watch tower. Floors were of hard packed adobe. Beams across which the roof poles were laid were supported by pillars of wood built into the adobe walls. In some cases an additional pillar had been set up in the center of the room to help support the beams. It was observed that most of the roof poles had a groove cut around them, several inches from one end. This groove might have been used in lashing the roof together, or a piece of fiber rope could have been tied in the groove and used in pulling the long poles up the steep incline to the cave during the construction of the roof.

Originally there were two long hallways extending partly across the front of the structure. Doorways opened into the hall from the front, and other doors led from the hallways into the back row of rooms. On one of the second story roofs at the north end of the structure were the remains of a large granary. The granary appeared to have been constructed in the same manner as that found in site Number 4. Sherds of Playas Redware, Babícora Polychrome, and Casas Grandes Polychrome were found.

These first seven ruins were all located within an area not over a mile long, and were all on the west side of the canyon.

10 As has already been mentioned, Lumholtz, Hewett, Carey, and Kidder have described ruins on the Garabato: this site, Number 7, is the one that has been described most often.

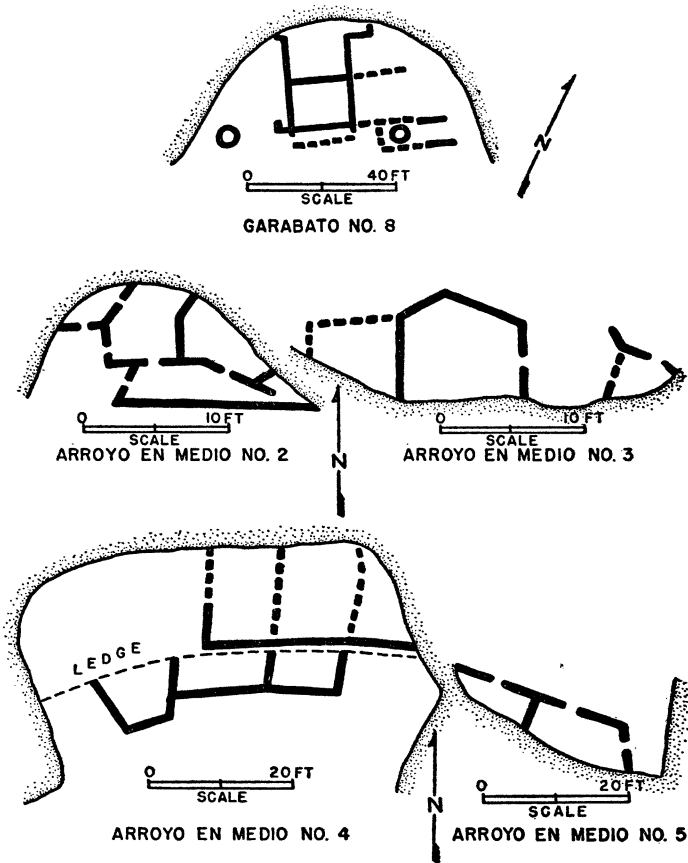


FIG. 5. Sketch-plans of Garabato and Arroyo en Medio cliff dwellings.

GARABATO NUMBER 8

This ruin was located about four miles south of the others, and it was situated in a cave in the east wall of the canyon. The cave was about one hundred twenty-five feet above water, and it was ninety feet wide, thirty feet high, and forty-three feet deep. Many of the walls, which had been made of adobe and stones, had fallen. Parts of the walls of three rooms still stood, and there were indications of several other rooms. In one place the wall was two stories high. There appeared to have been three granaries in the cave, only one of which remained.

As was the case with most of the cliff dwellings of the region, there were many wall openings. Doors were both of the rectangular and the step-passage types. Many small openings had been sealed.

ARROYO EN MEDIO NUMBER 1

This site was characteristic of a great many of the small ruins that are found in the Arroyo en Medio. It was a small one-room structure, six feet long and about four feet wide. The adobe walls were nearly all destroyed, and at their highest place stood only a little over three feet. The ruin was built under an overhanging rock twenty feet above the canyon bottom. The floor of the cave slanted toward the canyon at a fifteen-degree angle. Because the ruin was typical of many in this section only this one is described.

ARROYO EN MEDIO NUMBER 2

Wooden feed troughs, a pole corral, and a wooden corn cultivator indicated that this house had been recently occupied. The walls were in good condition with the exception of the front, which was sagging a little. The structure was built in a cave about thirty feet above the water. It contained five adobe-walled rooms, the front one possibly having been a hallway. The four rear rooms were built against the back of the cave, where the wall of the cave served as their rear walls. In one room, the floor at the north end had been raised a few inches above the general floor level, creating a platform. There was no debris on the floors; however, five sherds of Playas Redware were found on the slope in front of the cave. Rectangular doorways opened from one room to another.

ARROYO EN MEDIO NUMBER 3

Ruin Number 3 was situated in a cave in the south wall of the canyon, about fifty feet above water. The cave was some thirty feet wide at its mouth and had a level floor. The walls were only in a fair state of preservation, but the remains showed that four rooms had been built in the cave. Walls were made of vertical poles covered with smaller horizontal pieces of wood and then plastered with adobe. In some instances stones were set into the bottoms of walls, probably serving as foundations. The rooms contained no detritus; the only artifact found was a broken mano. Two doorways were seen, one of the rectangular type and the other Tau-shaped.

ARROYO EN MEDIO NUMBER 4

The cave which this structure occupied was about one-fourth of a mile downstream from site Number 3, had two distinct levels, and was one hundred feet

above the stream. On the upper ledge there had been three rooms, but only one wall was standing when the site was examined. The lower tier of rooms, built just in front of the upper group, consisted of three fairly well preserved rooms. Walls were constructed of vertical poles, small horizontal wooden slabs, and adobe plaster. Roofs of the lower rooms were made by laying split pine poles side by side and covering them with a thick layer of adobe. Rectangular and step-passage doorways were observed. In one of the upper rooms, there were four small holes in the front wall. These openings may have been utilized as loop-holes; each one was placed at a different angle to cover all approaches to the cave.

ARROYO EN MEDIO NUMBER 5

The site, located opposite Number 2, was fifty feet above the stream in the canyon bottom. Two adobe-walled rooms had been built in a small cave in the face of the cliff. One step-passage and two rectangular doorways led into the rooms. Six small wall openings had been made, but four of them had been sealed up at a later date.

As our permit did not allow us to do any excavating in these sites, we were not able to examine many items of material culture nor any burials. The few potsherds found, as already pointed out, consisted of Playas Redware, Babicora Polychrome, and Casas Grandes Polychrome. Trough metates were common. In one case mortars had been ground into a large boulder in a cave. A few bits of fiber cord, corn husks, and yucca quids were discovered.

THE AGUA ZARCA SITE

Location and physical landscape. This large mound site was located fifty miles northwest of Colonia Dublán on the Arroyo Agua Zarca, seven miles above Los Ojitos. The elevation there is about 5,500 feet. Covering the ruin area and in the nearby country, the vegetation is composed largely of mesquite brush, cacti, flowering thistle, walnut trees, poplar trees, and grass.

The ruin. The ruin, consisting of three compounds stretching across the narrow valley of the Agua Zarca, was about six hundred fifty feet long. The long axis of the site lay in a northeast-southwest direction. It was three hundred feet across the site at its widest place. The arroyo almost cut into the southwestern portion of the ruin. Besides the three distinct compounds, there were several small outlying mounds. It is possible that the structure may have been two stories high in places, as some of the mounds stood eight or ten feet above the general ground level. On the surface trough metates, manos, arrow shaft polishers, and potsherds were found. From the surface collection of pot-

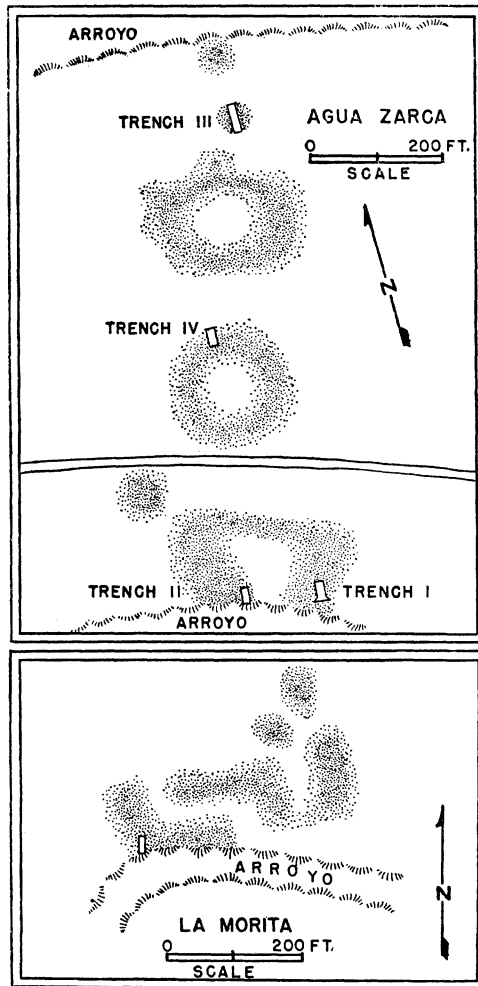


Fig. 6. Plans of the Agua Zarca and La Morita sites.

sherds the following types were identified: Playas Redware, Playas Red-Incised, Casas Grandes Polychrome, Babícora Polychrome, and Mimbres Black on White.

Agua Zarca was visited by Brand in 1931, but no scientific excavations were conducted until the University of New Mexico expedition worked there. Native pothunters had opened up several rooms searching for pottery.

Four stratigraphic trenches were dug, excavated by marking them off in sections, and each section was then removed in two-foot levels. The puddled adobe walls were left in place wherever encountered. As the dirt was removed from the trench, it was carefully examined for potsherds and artifacts. Trenches were extended down several feet below the floor level of the rooms.

Trenches I and II ran into the southwestern compound, extending from the arroyo well into the mound. Trench I, when finished, was approximately five feet six inches deep, ten feet wide, and eighteen feet long. A twelve-foot working platform was cleared at the side of the mound before the trench was started. The objects uncovered in this trench included two manos, three metates, one shell bead, a shell pendant, three bone awls, a polishing stone, an axe, four human burials, a few animal bones, and many potsherds. Exposed walls varied in thickness from seven inches to eighteen inches. In places there were indications that poles had been built into the adobe walls.

Trench II was nineteen feet long and ten feet wide. The floor level was approximately one foot six inches below the surface. The trench was carried down another foot and a half below the floor level. A metate, a mano, one bone awl, a piece of antler, a large flat stone slab which may have served as a bin cover, and one infant burial were recovered from this trench. Walls averaged about nine inches in thickness.

A small circular mound at the northeastern end of the ruin was tested by Trench III. Pothunters had dug into this mound, exposing a curved wall that appeared to be part of a circular structure. Inasmuch as circular rooms were not thought to be common for the Chihuahua culture, a trench was extended across the mound. The trench revealed that the structure was circular in shape and had a diameter of twelve feet. The wall of puddled adobe was sixteen inches thick and stood two feet high. On the floor a badly preserved skull of a child was found but no other bones. No noteworthy features were observed in the structure.

A short trench (No. IV) was extended into the middle compound. No walls were encountered, but potsherds, bits of adobe room material, and a metate were found. The compound consisted of a low circular mound one hundred seventy-five feet in diameter with a depression in the center. In view of the size, shape, and lack of room walls, it is conceivable that this could have been a ball court, although not enough actual excavation was conducted to prove or disprove the theory.

Pottery. Four whole pieces of pottery were recovered. Associated with the first burial was a Casas Grandes Polychrome olla. Decorations were in black

and red on a cream-colored slip. The black paint was rather faded and the red uneven, but the general effect was pleasing. There was a firing cloud on one side of the vessel. Two whole vessels were found with the third burial. One was a Casas Grandes Polychrome olla, and the other was a Playas Redware bowl. The olla was decorated in red and black on a creamy-buff slip. The red paint was well smoothed, but the black was raised in places. The surface of the Playas Redware bowl was fairly well smoothed and slightly polished. The other whole piece of pottery found at the Agua Zarca site was a Playas Redware olla, which was associated with the fourth burial. Two sets of holes had been drilled through the lip of the vessel opposite each other. A thong could have been passed through these holes to serve as a handle.

A stratigraphic study of sherds from Trench I showed the presence of six ceramic types. In identifying the sherds, they were divided into the six types, plus one other group. This other group included undecorated pieces of the polychrome wares; that is, sherds that carried no decoration but could be identified by their paste and slip as coming from polychrome vessels. The accompanying chart shows the number and percentage of the sherds of each type present in each level of the trench.

SHERDS FROM AGUA ZARCA

Types	Number of Sherds Stratum No.			Percentages Stratum No.		
	1	2	3	1	2	3
Playas Red	209	103	18	63	59	56
Playas Inc.	6	23	12	2	13	37
Ramos	21	5		6	3	
Babícora	2	9	2	.06	5	6
V. Ahumada	2	2		.06	1	
Casas Grandes	22	6		7	4	
Undec. Polychrome	68	25		20	14	
Total	330	173	32	99.2	99	99

Stonework. The most numerous of the stone artifacts recovered were trough metates. They were shaped from large blocks of vesicular lava and usually showed a good deal of working. Six specimens were found in trenches; four were observed on the surface of the mound. Two nicely worked stone blocks were found, into which no trough or groove had been worn, which apparently

had not been used. The average size of the specimens observed was: length, twenty inches; width, eighteen inches; height, ten inches. The trough in one specimen was six and three-eighths inches deep. Two small flat metates, resembling trays, were found. A mano was associated with one. So it is believed that they were used as metates, possibly for grinding pigments. The two tray metates were about the same size. The smaller one was ten and five-eighths inches long, seven and five-eighths inches wide, and three inches high. A low wall surrounded the shallow groove that had been worn in the center of the utensils. Mortars were made of small stones into which a circular depression had been ground. Manos were of the rectangular type and were worn on both sides. They were made of vesicular basalt and rhyolite. Several manos, round in shape, measured about four inches in diameter.

A crude axe, uncovered in Trench I, may have been an unfinished implement. The artifact had been pecked and ground into shape and a groove had been started on one side. The material of which it was made was a compact basalt. Pebbles were employed as hammerstones.

Shellwork. A shell bead and a small shell pendant were found in the excavations. The shells could not be identified.

Bonework. Parts of three bone awls were recovered. A piece of an antler which might have been used for working flint was found in Trench II.

Human burials. *Burial 1:* an infant burial, found one foot seven inches below the floor in the south corner of a room uncovered in Trench II. The bones were very fragile, badly disturbed, and many were missing. The body apparently had been placed in a sitting position; it appeared as though it might have been forced into a small hole. The knees were bent, and the position of the skull indicated that the head had rested on the chest. The vertebrae and ribs were scattered. The body was oriented southwest to northeast. A Casas Grandes Polychrome olla accompanied this burial.

Burial 2: a badly decomposed child's skull, found on the floor of the circular structure through which Trench III ran. No other bones accompanied the skull.

Burial 3: this burial, exposed in Trench I, was found eight feet below the surface and three feet beneath the floor level. The skeleton was that of a child not more than five years old. A few of the phalanges, vertebrae, long bones, and most of the calvarium were the only bones found, and were in poor condition. The burial had probably been disturbed by burrowing rodents. The body was

oriented in a southwest to northeast direction. It apparently had been placed in a sitting position with the hands folded over the thorax, and the knees slightly bent. The body had been wrapped in a simple checker-woven mat of vegetable fiber. The bits of matting were so badly decomposed that none were preserved. A Casas Grandes olla and a Playas Redware bowl had been placed with the burial.

Burial 4: only a few ribs and tarsals remained of this burial, that of an infant. A shell pendant was found with the bones. This burial was also found in Trench I at a depth of eight feet. The body had been placed one foot six inches south of an exposed wall, and about midway of its length. Because it was so fragmentary, its orientation could not be determined.

Burial 5: another fragmentary burial was found four and a half feet below the surface in Trench I. Only enough bones were present to indicate that there had been a burial. No information could be gathered from the remains.

Burial 6: in Trench I, at a depth of nine feet and beneath a wall, burial 6 was found—an adult, probably a female. The body had been placed in a sitting position, head bent forward, knees flexed, with hands crossed over the pelvis. It was oriented northwest-southeast. The skeleton was in poor condition; the bones were very fragile, and the ends of all the long bones had decayed. A few small bits of fiber matting indicated that the body had been wrapped in, or placed on, a mat. A small Playas Redware olla had been left by the right knee.

LA MORITA SITE

Location and physical landscape. La Morita site was about ten miles northwest of the ruin on the Agua Zarca and sixty-one miles from Colonia Dublán. The region was characterized by a vegetation of mesquite and grass, plus hackberry, flowering thistle, and cholla. The ruin was situated on the north bank of the Arroyo Carretas, five miles northeast of Manga Punta de Agua.

The ruin. The site, covering an area about three hundred seventy-five feet in an east-west direction and three hundred thirty feet from north to south, consisted of three large mounds and two smaller ones. The Arroyo Carretas, making a sharp turn at the southwest corner of the ruin, cut into one of the mounds, exposing several walls. In a few places, the mounds reached heights of six or seven feet. Potsherds were abundant on the surface of the site, and a few broken metates were noted.

La Morita ruin had been examined by Brand in 1931, but no previous excavations had been carried on, with the exception of some pothunting by natives.

Owing to the fact that we did not spend much time at this site, we were able to dig only one trench. This trench, which was twelve feet wide, extended thirty feet north from a point on the arroyo bank where the walls were exposed.

The walls characteristically were of hard puddled adobe, sometimes with the addition of rocks, and ranged in thickness from eight inches to twenty inches. Two wall openings were encountered: one, a rectangular door that had been sealed with two metates, and the other a step-passage doorway. When completed, the trench averaged six feet in depth, the bottom being two feet below the floor level. As at the Agua Zarca site, the dirt was removed from the trench in strata two feet deep. The dirt from each stratum was carefully examined for artifacts.

Pottery. Three whole vessels were recovered from La Morita. Two of them were of Playas Redware. One of these was a very poorly constructed olla, unpolished, and but slightly smoothed. The other red vessel was a miniature olla not over two and a half inches in height. The third piece, an olla of the Carretas type, was decorated in black and red on an orange-cream slip. The black paint was glazed.

The potsherds from the excavation at this site were worked up in the same manner as those from Trench I at Agua Zarca and the results are shown in the accompanying chart. It will be noticed that two wares appear here that did not occur at Agua Zarca, namely, Carretas Polychrome and Huerigos Polychrome.

SHERDS FROM LA MORITA

<i>Types</i>	<i>Number of Sherds Stratum No.</i>			<i>Percentages Stratum No.</i>		
	<i>1</i>	<i>2</i>	<i>3</i>	<i>1</i>	<i>2</i>	<i>3</i>
Playas Red	556	473	182	58	57	55
Playas Inc.	63	45	48	7	5	15
Ramos	87	61	24	9	8	7
Babícora	20	32	6	2	4	2
Carretas	14	19	7	1	2	2
Huerigos	8	12	4	.09	1	1
V. Ahumada	8	3		.09	.04	
Casas Grandes	39	40	17	4	5	5
Undec. Polychrome	165	142	41	17	17	12
Total	960	827	329	99.8	99.4	99

Stonework. Four metates from La Morita were examined. Three were obtained from the trench, the fourth from the surface. All were made of vesicular lava and were of the trough variety, but two had been fashioned from unshaped rocks. Two of the metates were found in such a position as to indicate that they had been used to seal up a doorway. Manos were of the rectangular variety. A full-grooved axe, made of a compact igneous intrusive rock, probably a gabbro, was recovered. The implement was rather slender, with the groove placed well back toward the blunt end. Several smoothing stones, which had been made from hard igneous rocks, were found.

Shellwork. Associated with an adult burial was a shell necklace. One hundred eighty-seven of the small Nessor (Electrion) shells used in the necklace were recovered. Each shell had a hole through one end for stringing purposes.

Perishable material. No work in bone was recovered. A few very badly decomposed bits of matting were found in association with two of the burials. The mats were of vegetable fiber, and the weave of one could be identified as having a herringbone pattern.

Human burials. The burials at La Morita were even more fragmentary than those at Agua Zarca. Indications of four burials were revealed in the trench. Generally the bodies were placed in a sitting position, with the head forward, the hands over the pelvis, and the knees flexed.

CONCLUSIONS

After comparing the material culture of the cliff dwellings with that of the open, or mound, sites, there seems to be more reason than ever for believing that both types of ruins are representatives of the same culture and probably existed contemporaneously, at least in part. The belief that the Chihuahua people abandoned their unprotected open sites, with the possible exception of such large centers as Casas Grandes because of the increased pressure from nomadic tribes and moved to the more protected canyon country of the Sierra Madre Occidental is borne out by our work.

A number of the architectural details found in the mounds were similar to those observed in the cliff dwellings. Doorways uncovered at La Morita were rectangular and step-passage in type. Although no Tau-shaped doorways were found at La Morita or Agua Zarca, they were uncovered by Carey in the Babícora district and were noted by Brand in Lumholtz' excavation on the headwaters of the San Diego. Thus, we find the same three types of doorways being employed in both cliff and mound sites. Walls constructed of adobe, rocks set

in adobe, and combinations of poles and adobe were used in the open sites as well as in the cliff dwellings. The platform-and-depressed-basin fireplace was noted by Carey and Kidder in mound sites in the Babicora area, and was frequently found in the cliff sites on the Garabato. The presence of watch towers in many of the cliff ruins would imply that an enemy situation existed and that protection was one of the foremost thoughts in the minds of the builders of the cliff dwellings. On the other hand, the large number of doorways in the cliff houses was not a protective feature, but this may be explained as a hold-over from more peaceful times when houses were erected in the open and contained many entrances.

On the Garabato the trough metate was dominant. This same type of metate was also characteristic of the La Morita and Agua Zarca sites.

Some similar pottery types occurred in the two classes of ruins. Playas Redware and Casas Grandes Polychrome were the principal wares that were found to be present in both types of sites. According to Sayles,¹¹ Playas Redware occurred throughout several phases of the Chihuahua culture complex and was not diagnostic of any particular phase. Casas Grandes Polychrome, however, is thought to be characteristic of the Ramos and Animas phases. The Ramos and Animas phases were relatively late developments in the area. If the cliff sites belonged to the Ramos or Animas phase, as is indicated by the presence of Casas Grandes Polychrome, they may also be considered late in the Chihuahua culture time table.

The time of the increased pressure by nomads on the Chihuahua people and the resultant abandoning of the unprotected sites with migrations into the rough canyon country may be placed between 1300 and 1400 A.D. These dates are determined by means of cross-finds of dated pottery, such as Gila and Tonto Polychromes, from the Salado area of Arizona in the Animas Phase of the Chihuahua culture. Gladwin states that at about 1350 the Salado people of southern Arizona abandoned their homes in the Tonto basin, the Gila basin, the Middle Gila, and the San Pedro and moved to the east and south. The main body of the people seemed to have moved into northern Chihuahua where they carried, or introduced, Gila and Tonto Polychrome, as well as other elements of Salado culture.¹²

At neither La Morita nor Agua Zarca were refuse heaps located. In fact, all of the Chihuahua sites seemed to lack extensive mounds of refuse. This

11 E. B. Sayles, *An Archaeological Survey of Chihuahua, Mexico; Some Southwestern Pottery Types: Series V* (Medallian Papers, no. 21, Gila Pueblo, Globe, Arizona, 1936).

12 Gladwin in Sayles, *An Archaeological Survey of Chihuahua, Mexico*.

may have been due to the fact that the culture developed, flourished, and declined in a short period of time. On the other hand constant pressure from enemy tribes may have made village life very unstable, and sites may have been abandoned frequently and new villages constructed.

In the refuse from excavated rooms a scarcity of animal bones was noted. This shows that the inhabitants of the sites depended primarily on agriculture for their food supply. The large number of metates and manos recovered also strengthens this belief.

Burial customs were similar at the two sites. Bodies were interred beneath room floors and walls. Normally the corpse was placed in a sitting position, knees tightly flexed, hands folded over the pelvis, and the head bent forward on to the chest. Orientation was northwest-southeast. The body frequently was wrapped in a fiber mat before burial. Pottery vessels usually accompanied burials.

Pottery from La Morita and Agua Zarca point to short periods of occupation for the sites. There are no appreciable differences in the pottery types from the lower and upper levels. Apparently the same wares were used throughout the lifetime of the villages. When comparing the pottery from the two sites several differences were noted. Carretas and Huerigos Polychrome were present at La Morita but absent at Agua Zarca. A greater percentage of Casa Grandes Polychrome occurred at Agua Zarca than at La Morita.

Stonework also points to a slight difference between the two sites. In general, workmanship and shape of the metates and manos of Agua Zarca were much superior to those of La Morita.

The sum of the evidence indicates that culture at Agua Zarca was more highly advanced than it was at La Morita. This may be because La Morita was more on the periphery of the area than was Agua Zarca, or there may be a difference in time.

A series of excavations in Chihuahua is needed to determine whether the theories that have been developed through studying collections and conducting surveys are sound. The possibilities for the location of early sites about the old inland basin areas are good. And caves in the Sierra Madre Occidental hold promise of well preserved archaeological material.

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