THE PLACE OF
THE TRINCHERAS CULTURE OF NORTHERN SONORA
IN SOUTHWESTERN ARCHAEOLOGY

by
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A Thesis Submitted to the Faculty of the
DEPARTMENT OF ANTHROPOLOGY
In Partial Fulfillment of the Requirements
For the Degree of
MASTER OF SCIENCE
In the Graduate College
UNIVERSITY OF ARIZONA

1960
STATEMENT BY AUTHOR

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ACKNOWLEDGEMENTS

During the course of a project such as this, one finds it necessary to call on the assistance of a number of other persons, without whose help the successful conclusion of the work would not be possible. It seems appropriate to express my gratitude to these people at the beginning of this report, the conclusion of which depended so much on their aid.

Field work at the La Playa site was supported, in part, by a grant from the Department of Anthropology of the University of Arizona, and I wish to express my thanks for this assistance.

Excavation and reconnaissance at the site was accomplished only through the help of a number of willing friends. To all of these people, who are listed below, my appreciation is expressed.

Richard Ambler
Beth Colvin
Calvin Cummings
Frank Eddy
Cameron Greenleaf
James Neely
A number of problems encountered in this project involved the aid of specialists, and I hope that their work with La Playa specimens proved as interesting to them as it did to me. Dr. E. Lendell Cockrum, of the Department of Zoology at the University of Arizona, identified the specimens of bone and antler. Mr. Robert J. Drake, of the Department of Zoology, University of British Columbia, worked with the non-marine molluscan shells, and for the identifications given herein and the ecological statements on these forms I am indebted. Dr. Leo G. Hertlein, of the California Academy of Science, was kind enough to give identifications of the marine shells. Mr. Fred Pashley, of the Ground Water Branch of the U.S. Geological Survey, identified the types of rock used in the manufacture of stone artifacts, and made a brief geological survey of the La Playa site. The results of the survey are given in an appendix to this report. Dr. Frederick Hulse and Mr. Clyde Snow, of the Department of Anthropology, University of Arizona, examined the human skeletal material and offered age identifications of this material. I wish to express my thanks to all of these men for their aid.
To the members of my thesis committee, Drs. Haury, Hulse, and Thompson, I would like to express appreciation for their constructive criticism in technical matters relating to the manuscript and the archaeology reported herein.

Dr. W. W. Wasley, of the Arizona State Museum staff, is to be thanked for his encouraging discussions of La Playa data and its relationship to the archaeological complexes in surrounding areas. Dr. Wasley and Dr. Haury, in addition, identified the intrusive pottery found at La Playa.

Photographic facilities were supplied by the Arizona State Museum, and to the staff photographer, Mr. Gilbert Bartell, my thanks are expressed.

The generosity of Mr. Carl Ronstadt of Tucson, in lending his private collection from the La Playa site for analysis, is greatly appreciated.

Finally, I would like to express my gratitude to my wife, Ann, without whose help in writing, rewriting, proofreading, and typing, this manuscript would stand in unfinished form today.
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CHAPTER I
INTRODUCTION

The object of this report is to place the prehistoric Trincheras Culture of northern Sonora in the broader framework of Southwestern archaeology. The distinctive nature of this archaeological manifestation has been known, through survey work, for some time (Sauer and Brand 1931), although it has never been studied in detail. This, in part, stems from the fact that, until recently, the entirety of northern Mexico has remained one of the most neglected areas of American archaeological research. Southwestern archaeologists have long been aware of many striking parallels in the archaeology of Mexico and the Southwest, and have realized that somewhere in northern Mexico there must exist a corridor through which these traits passed, probably most often from south to north. For various reasons, however, the search for this avenue of contact was postponed until very recently. Now, through the work of Kelley (1956: 128-39), Lister (1958), and Di Peso (Wasley 1959b: 148), much is being done to rectify this situation.

Although much of the stimulus for this examination of the Trincheras Culture is drawn from the general interest in northern Mexico, this study has little to offer but
negative evidence towards the solution of the problem of these relationships, as the Trincheras Culture is primarily Southwestern in type. A few traits which bear on the problem of Southwestern-Mexican contacts are discussed.

Substantive data for this examination of the Trincheras Culture comes from a study of the La Playa site, which is situated about 75 miles south of the international border in northern Sonora (Fig. 1). A permit granted to the Arizona State Museum by the Instituto Nacional de Antropología e Historia of Mexico allowed field work at the site during the months of February, March, April, October, and November of 1959. Due to academic commitments this field work was restricted to weekends. During the period of field work trips were made to the site, leaving Tucson Friday afternoons and returning Sunday evenings.

THE AREA

In general terms, the area of the Trincheras Culture has been fairly well delimited by survey work. Notice of the peculiar terraced hillside sites associated with this complex goes back to the time of the earliest Spanish explorers in the area (see quote from Manje in section entitled "History" below). Through the work of such American investigators as Bandelier (1892: 509-10) and Lumboltz (1902:
21-2) some detailed information as to the distinctiveness of this complex was added (see section below entitled "Trincheras" for a fuller discussion of these features). It was not, however, until the time of the surveys by Sauer and Brand (1928, 1930) that the Trincheras Culture became really known.

The Trincheras Culture in its most characteristic form is restricted to northern Sonora (Fig. 1). Sauer and Brand (1931: 117-8) note that "the greater part of the ruins seen [during their surveys] belong to the subculture we have called Trincheras and lie west of the Sonora Valley, extending well out into the desert Papaguería." Also, "the Altar and Magdalena valleys were the center of this group. Here the really most extensive and most numerous remains are found." The Altar River Valley as a center of the Trincheras Culture is supported by Hinton's survey (1955).

These statements serve fairly well to delimit the area under consideration in this report. The influence of this culture extended far beyond the boundaries established above (Fig. 1), to the Punta Peñasco area on the coast to the west (Gifford 1946: 215-21), and into several sites in southern Arizona to the north (Haury 1950: 352-3). The extent of its influence to the east and south remains to be determined.

The area of the Trincheras Culture falls in two
Map of southern Arizona and northern Sonora with locations of archaeological sites mentioned in the report.
biotic provinces as defined by Dice (1943). The first of these, the Sonoran, is characterized by basin and range topography; broad flat valleys interrupted by mountain ranges generally trending north-south. Drainage is primarily into the Pacific "through washes that are dry most of the year, or by underground seepage."

The summers are long, and during this season high temperatures prevail. Though the winters are moderate, the entire province is subject to occasional frosts. In general there is a winter rainy season with widespread but mostly gentle rains and a season of summer rains of thunderstorm type. (Dice 1943: 52.)

To the east are the high grassy plains and mountains of the Apachian biotic province.

The Apachian plains vary in elevation from about 4,000 to more than 7,000 feet. Above them rise many isolated hills and mountains, some of which reach elevations of over 9,000 feet. The climate of the Apachian province is semi-arid, with most of the precipitation occurring in convectional storms during the summer months. Some widespread rains fall in winter, but these are generally lacking in the southern section of the province. The most arid part of the year comes just before the summer rains begin. Because of the high elevation the mean temperatures are moderate, although the summer days are hot. Periods of extremely cold weather may occur in winter. (Dice 1943: 57.)

Nichol (1952: 212) has described the vegetation which pertains to this area in the following terms:

The roughest terrain and the highest levels of the southern desert are occupied by the palo verde-cacti type of desert. Differences in soil, slope, elevation, rainfall, and temperature cause this general subtype to present many variations in floral structure. Usually it is bordered below by the creosote bush and Atriplex formation or occasionally by the plainly marked strips
of mesquite bosques in the alluvial bottoms. Above, it is often met by the belt of desert grass..."

The desert grasses are primarily various species of grama and curly mesquite grass (Nichol 1952: 206).

HISTORY

An examination of historical documents concerned with this area yields a general view of the region and its inhabitants at the time of initial European contact, and aids in an explanation of the archaeological remains. Documents referring to northern Sonora, as with the earliest accounts of nearly any region, are not always what the archaeologist might desire in terms of detail and accuracy. Consequently, they have to be critically studied, and often interpreted in the light of more recent findings. These facts are taken into consideration in the following presentation. The time period under examination is the latter part of the 17th century and the first of the 18th.

The area of the Trincheras Culture, as its boundaries are now known, lies within the region designated by the early Spanish explorers and missionaries as Pimería Alta. This section of southwestern Arizona and northwestern Mexico (Fig. 1) had as its boundaries the Gila River on the north, the Colorado River and the Gulf of California on the west, the Magdalena River on the south, and the San Pedro
River on the east (Bolton 1936: 246).

Within Pimería Alta, several groups of Piman speakers were distinguished. The Pima Proper were situated in the southeastern portion of the region. They had villages on the upper reaches of the Sonora, the San Miguel, and the Cocospora rivers, on the Magdalena and Altar rivers, and on the San Pedro and Santa Cruz rivers. They also extended westward down the Altar Valley to around Oquitoa and down the Magdalena for some distance below the modern pueblo of San Ignacio (Bolton 1936: 247).

Beyond the Pima Proper were the Soba Pima who had as their area the lower Magdalena and Altar rivers, extending to the Gulf Coast. Caborca was a principal settlement of the Sobas. It will be noted that these two groups historically occupied the archaeologically defined area of the Trincheras culture, and extended somewhat beyond its boundaries.

The Sobaipuri area was to the north of that of the Pima Proper, the boundary between the two groups being approximately a line drawn eastward from the present town of Tubac through Fairbank, Arizona (Bolton 1936: 247). Three groups of Sobaipuri were distinguished by the early missionaries. The first of these dwelt on the San Pedro from about Fairbank to the Gila, the second was situated on the middle Santa Cruz River between San Xavier del Bac and Picacho,
and the third on the Gila River from Casa Grande westward nearly to Gila Bend. This last group of Sobaipuris was also known as the Gila Pima. Di Peso (1953, Fig. 33) has recently presented data indicating that the historically known Sobaipuri of the San Pedro drainage can be related to the archaeological complexes of this area. In the desert country to the west of the Santa Cruz River were the Papago (Bolton 1936: 248). Sauer (1935: 32) estimates a total population of around 30,000 for Pimería Alta, divided into 10,000 Papago and 20,000 other Piman speakers.

Bordering the Piman speaking groups of Pimería Alta on the north and east were Apaches who, accompanied by Jocomes, Janos, and Sumas, constantly threatened the Pima villages and the Spanish settlements. To the northwest and west along the lower reaches of the Gila and the Colorado rivers were Yuman speaking groups such as the Cocomaricopas, the Quiquimas, Bagiopas, and Moabonomas (Manje 1954: 223; Pfefferkorn 1949: 28-9). Along the coast to the southwest of Pimería Alta were Seris and Tepocas, and to the south and southeast the Opatas and Lower Pimas (Nentwig 1894: 193-8; Pfefferkorn 1949: 31).

This summary of the various ethnic groups in and around Pimería Alta early in the period of European contact is offered only as an introduction to this report on the Trincheras Culture. It is not intended to suggest that
this historically recorded situation can be extended into the prehistoric period, although this is certainly a desirable end. One of the most perplexing problems of the archaeology of southern Arizona has been the lack of definite ties between the prehistoric Hohokam sequence and the historically known groups of the same area. This is as true for the region adjoining immediately on the south. In this latter section much less work has been done on the problem, although the potential for its solution seems great (Hinton 1955: 6-8).

Examination of the early documents yields data on the cultures of the various groups of Pimeria Alta, and often these are of value in interpreting archaeological findings. References to historical evidence will be made in appropriate sections in the following report. By way of concluding this section attention is called to the earliest known references to the region about the La Playa site. Both of these are drawn from Manje's record.

On the 10th [of February, 1694], after mass, we left San Miguel de Bosna, traveling toward the south through plains without stones, but arid. At five leagues, we stopped to camp on the lagoon of Oacuc, also known as San Bartolomé, which has good grazing land and a small creek that runs south. Three years previously Captain Don Juan de la Fuente and Major Governor Blas del Castillo had come there with soldiers and a posse of neighbors in pursuit of some Indians of the tribe who had stolen horses from the mission of Opodepe. At this place they turned back because of their ignorance of the country, and because they did not know that they could find water farther on. They
had not drunk water for two days until they arrived at this pool. We were received by a small band of twenty Indians to whom we gave trivial gifts. We instructed them in the knowledge of God and His Divine Law. (1954: 10)

This reference is undoubtedly to the immediate vicinity of the present day settlement of Ocuca, eight miles north of the La Playa site. It is interesting to note the continuation of the name for this pueblo over a 250 year span, and more important to realize that the Boquillas River, which is apparently the creek flowing to the south, formed an important watering spot then. This stream flows through the La Playa site described in the following section.

On the 21st of February, after visiting the Soba Pima, Manje reports:

We said goodbye and continued our journey toward the east along the river, through plains. We passed in sight of, and around, a mountain where there are 100 terraces of stone walls in the form of a snail, spiraling to the top. They say it forms an armory, where in former wars those who gained the heights first were usually victors. Those who reached the first ring went around to the second, and as far as was necessary to exhaust the supply of arrows of those below. Then they came down from the mountain and fell upon their enemies and killed them. After having gone 10 leagues, we camped at the river, which we named Santa María de Toava. (1954: 21.)

This river now bears the name Magdalena, and the terraced mountain referred to is very probably the site of Las Trincheras, about seven miles south of La Playa (Fig. 1). It is unfortunate that Manje did not examine the terraces
more closely, as he would soon have seen that they do not rise in spiral fashion, but are unconnected units, restricted, for the most part, to the northern side. Their defensive nature is brought into question, when the quantity of dry-laid masonry house foundations is observed, plus the residue from habitation, such as sherds, manos, and metates. Apparently the site was unoccupied at the time it was visited by Manje, and this is important to note because there are indications that Las Trincheras has a somewhat later date than a majority of the sites of the Trincheras Culture (Sauer and Brand 1931, Fig. 2).

THE SITE

The La Playa site is situated 27 miles west of Santa Ana, Sonora, on the old road from Santa Ana to Altar, and is bisected by this road. The large prehistorically terraced hill, known as Las Trincheras, and the modern town of the same name at its base, are about seven miles south of La Playa. The modern village of Ocuca is eight miles north (Fig. 1).

La Playa gains its name from a small Mexican pueblo one mile southwest of the archaeological site. It has also been called the Boquillas site (Sauer and Brand 1931: 93). Survey designations are Sonora F:10:3 in the Arizona State
Museum system, and Sonora H:7:1, the original designation given by Gila Pueblo.

The site occupies a large flat at the base of the Cerros Boquillas, which bound the occupation area on the north (Fig. 2). The Rio Boquillas, a permanent stream fed by large springs at Ocuca, enters the occupation area through a gap in the hills at the northeastern corner of the site. It then flows along the northern edge, turning southwest near the western limit of the site to eventually join the Rio Magdalena south of Altar. Since arroyo cutting began in the latter part of the 19th century the Rio Boquillas has entrenched itself to a depth of from four to five meters. Today the water from the river is diverted into an irrigation ditch which cuts diagonally across the site from northeast to southwest.

A startling aspect of this site is its size. Although the boundaries could not be determined with any degree of certainty, as the cultural debris fades out at the edges with no sharp breaks, the site measures at least two miles in length (east-west) by one and one-half miles in width (north-south).

Currently the site is being used primarily as a grazing area for cattle, except for a small section at the south side which is under cultivation. Mexican families occupy two houses on the Santa Ana-Altar road, at the east
Map of the La Playa site.
The predominate vegetation consists of mesquite and creosote bush, with a sparse cover of grass, and occasional cacti, such as ocotillo, cholla, organ pipe, and saguaro. In a description of the present day situation at the La Playa site erosion is a major factor which must be taken into consideration. Erosion, which has damaged quite seriously the archaeological remains at the site, is a result of the permanent flow of water in the Rio Boquillas until very recently, and of overgrazing.

Both sheet and gully erosion are responsible for the extent of disturbance. A large part of the north-central section of the site has been lowered as much as one meter as a result of this process (Fig. 14). Small gullies or arroyos abound at the site today. As the site slopes slightly from northeast to southwest, erosion is cutting headward in the former direction, and the only section of the site which has not been modified by this process is the northeast corner.

Another of the striking aspects of this occupation area is a result of the extent of erosion. This is the fact that over large parts of the site the ground is literally paved with fire-cracked rock which has resulted from the.
erosion of pit ovens. Numerous small natural mounds covered with fire-cracked rock are present (Fig. 14). Although any archaeologist hates to see a site destroyed by no matter what process, in this case it was a decided advantage in the field work done at the site. Only a minimum of time was available for this work, and consequently it was a great boon to have the various features to be excavated partially exposed by erosion. Also, as a result of this process, it is felt that all of the archaeological features present at the site were examined.

In an interpretation of the archaeology of the La Playa site an important factor which has to be taken into consideration is paleo-ecology, or the ecological situation at the site during occupation. At the time of Haury's 1938 visit to the site, the statement was obtained from a Señor Redondo that during his father's time, some 100 years before, erosion was just beginning, and that the Rio Boquillas was just a small gully (Haury 1938, field notes). A similar statement was obtained from the present dwellers at the site, the Murietas, who are Señor Redondo's daughter and son-in-law. In addition, the Murietas report that the site was a marshy area, comparable to cienegas of southern Arizona, until this erosion began.

These local reports are supported by an examination of the upper soil deposits at the site in which artifacts
occur. These deposits consist of sandy, thin, laminated bands apparently deposited by water. The physiography of the area is also in support. Water flowing in the Rio Boquillas from Ocuca, and it apparently has been flowing at least since the time of initial European contact (see quote from Manje in section on "History"), would come through the gap in the hills at the northeast corner of the site and spread out over the flat (Fig. 2), if not restricted to a channel as it now is, due to arroyo cutting.

Additional evidence comes from nonmarine molluscan shells collected from the culture bearing zone of the sediments at La Playa. Species identifications have not yet been made, but the two genera represented are *Succinea* and *Helisoma*. *Helisoma* is a pond-type general form, and *Succinea*, although usually classed as a terrestrial snail, is amphibious in habitat. It lives on the edges of small bodies of water. These two nonmarine forms would indicate a somewhat damp environment at the time of occupation of the La Playa site.

Local reports combined with a study of the physiography, sediments, and nonmarine molluscan shells, then, indicate that the La Playa site was a marshy area during occupation. Realization of this fact makes an interpretation of the archaeological data much easier, and reference will be made to this situation at various places in the report.
CHAPTER II

ARCHAEOLOGICAL FEATURES

The term feature is used here as an inclusive category to designate those archaeological remains other than artifacts which were encountered at the La Playa site. Features can be subdivided into mounds, pit-ovens, burials, and terraces or trincheras, each of which will be discussed below. Only excavated features were assigned numbers.

THE MOUNDS

Situated in the east central section of the La Playa site are 16 mounds, constituting the most obvious artificial features at the site (Figs. 3, 5). These vary from oval to circular in outline, and are rounded in cross-section. The diameters range from 5 m. to 40 m., and the average maximum height is 1.5 m. A majority are arranged in two rough lines extending from northeast to southwest.

Mound 1

In an attempt to determine the nature of these features, a medium-sized mound situated at the northeast end of
FIGURE 3

Map of the Mound Group in the east central section of the La Playa site.

FIGURE 4

Cross-section of Mound 1.
the group was selected for excavation (Fig. 6). Initially, a trench, 12.5 m. long and 1 m. wide, was cut through the mound in a north-south direction. Then an area measuring 3 m. in length and 2.5 m. in width was stripped from the top of the mound in the southwest quadrant.

These excavations disclosed a mantle composed of fire-cracked rock, mostly local siltstone, overlying an earth core (Figs. 4, 7), which was probably straight sided. The rock mantle averaged 40 cm. in thickness, and the earth core 1 m. A roughly flat prepared adobe floor was encountered in the area stripped from the southwestern quadrant of the mound, and from this surface pit ovens extended into the earth core. Both the floor and the pit ovens were below the rock mantle (Figs. 4, 8).

The four pit ovens located (Fig. 4) were irregular in shape, but generally basin-shaped with rounded bottoms. One had under-cut sides and a rounded bottom. They ranged from 15 to 45 cm. in depth, and averaged 35 cm. in width. None exhibited burned walls.

Artifacts from Mound 1 were scarce, and restricted to the overlying rock mantle. These consisted of four Trincheras Purple-on-red sherds, 29 sherds of plain brown ware, one stone reamer, one abrading stone, one hammerstone, and two *Glycymeris* bracelet fragments.
FIGURE 5

Unexcavated mound in the Mound Group in the east central section of the La Playa site.

FIGURE 6

North-south cross trench through Mound 1.
FIGURE 7

Mound 1. Contact of rock mantle and earth core.

FIGURE 8

Mound 1. Shovel point rests on adobe floor.
Mound 2

An amateur excavation in a second mound in the group, which consisted of a trench measuring 2 m. in length, and 1 m. in width, in the north side, was cleaned and straightened to gain comparative data (Fig. 3). This indicated the same situation as for Mound 1, that is, an overlying mantle of fire-cracked rock, and a central core of earth.

Mound 3

During Haury's 1938 visit to the La Playa site, a pit oven was excavated in a mound near the southwestern end of the group (Fig. 3). This oven had slightly undercut sides and a flat bottom. The sides were highly burned, indicating a fire had been built in the pit. Fire-cracked rocks were found within its confines. It had a maximum diameter at the bottom of 1.2 m., and the depth was nearly the same.

Discussion

Data collected from excavations in three mounds indicate the following reconstruction. Earth was heaped up into probably a roughly square shape to a depth of about 1.5 m.
On the top of this earth fill a floor was prepared from adobe which served as a roughly flat occupation surface into which basin-shaped and undercut pit ovens could be dug. Two techniques were utilized in heating these ovens. In the case of Mound 1, fires were prepared, outside the pit, on which rocks were heated. These were dropped into the oven, thereby heating it. Haury's excavation indicated that fires were also occasionally built in the pits themselves, which hardened the walls and turned them an orange color. Fire-cracked rocks in this latter pit indicate these were also added as aids in the cooking process.

An explanation of the reason for this localized grouping of mounds, and the construction of the mounds themselves comes from a study of the paleo-ecology of the site. This indicates that La Playa was a marsh at the time of occupation. In the area of the mounds, the land rises both to the east and west, and if this situation prevailed at the time of occupation the mounds probably were constructed in order to have an occupation surface above the constant dampness of the marsh.

No traces of house remains were encountered during the excavation of Mound 1, and this fits the situation for the site as a whole where no houses were located. Apparently the tops of the mounds were completely in the open, serving only as bases for pit oven cooking.
Earthen mounds occur in the Southwest, but are restricted, for the most part, to later time horizons, especially the Classic Hohokam period. Quite recently a somewhat earlier occurrence of an earth mound in a Hohokam site was discovered. This is at the Gatlin site in the Painted Rocks Reservoir area near Gila Bend, Arizona. Here, a flat-topped, slope-sided, earthen mound, with some six major stages of construction was excavated. Associated pottery indicates the mound was built during the Sacaton phase, which has been assigned dates of A.D. 950 to 1150 in this area (Wasley 1959b: 147-8).

Later occurrences of earthen mounds in the Classic Hohokam period have been explained as being a result of Salado influence (Haury 1945: 205). As will be pointed out below, these mounds are somewhat different architecturally from the Gatlin site mound, and they may or may not be related to this structure.

Hayden (1957) has recently summarized the architectural data from the Classic Hohokam period, and the following occurrences of Classic mounds are drawn primarily from his report. He notes that earthen mounds were built both during the Soho and Civano phases of the Classic period. In a majority of cases, these mounds were of the compound type, an earthen core enclosed by a thick wall of adobe. Occurrences are noted for Las Colimas, La Ciudad, and Pueblo...
Grande in the Salt River Valley, Casa Grande and Adamsville in the Gila drainage, and University Indian Ruin in the Santa Cruz drainage (Hayden 1957: 177-200). Probably related to these developments are the massive adobe walled enclosures excavated at the Jackrabbit Ruin, a Classic period manifestation of the Desert Branch Hohokam in Papaguería (Scantling 1940: 18-23).

With perhaps the exception of the Gatlin site mound, all of the Hohokam mounds occur on later time horizons than those at La Playa. Also, as the La Playa mounds occur considerably farther south, and Mesoamerica has been suggested as a source of these features (Jennings 1956: 95-6), it can be at least suggested that the prototypes of the later structures in Hohokam sites of southern Arizona are to be found in Trincheras Culture sites.

A major problem arises, however, when it is noted that La Playa is the only Trincheras Culture site where these mounds are known to occur. They were certainly not widespread and well developed features of the Trincheras Culture. In fact, as suggested above, their occurrence at the La Playa site may be explained by environmental conditions, that is, the desire to have a raised living surface above the dampness of the marsh. For the time being, it seems better to leave the question open, and suggest that perhaps the Trincheras Culture and other Southwestern arch-
aeological complexes shared a knowledge of the construction of earthen mounds.

PIT OVENS

The eroded remains of roasting pits are found scattered over the site. These range from nearly complete pits, to those represented by only piles of rock, the pit itself having been completely eroded away (Fig. 14). For the most part, these pits are basin-shaped, although occasional ones with straight or slightly undercut sides do occur. As noted in the discussion of the pits found associated with the mounds, two techniques were known for the use of these ovens. In one case, a fire was built in the pit itself, thereby heating the oven, but more important for archaeological interpretation, hardening the walls of the pit and firing them an orange color. The eroded remains of one of these pits with a fired wall thickness of 15 cm. was observed. The second technique was to build a fire apart from the pit, thereby heating it. This was the practice for all of the pit ovens encountered in Mound 1. Occasionally the pits were lined with clay, sometimes bearing wattle impressions. Perhaps this indicates the use of sticks as reinforcing items, over which clay was daubed. The sticks would serve to hold the clay in place until it hardened.
Pit Oven 1

One pit oven not associated with the mound group was excavated. This was located in the south central portion of the site, south of the old Santa Ana-Altar highway (Fig. 2). On discovery, Pit Oven 1 consisted of a low rounded mound of rocks, in the center of which was a cleared area enclosed by a circular clay wall measuring 5 cm. in thickness. The clay wall extended 5 to 7 cm. above the present surface of the ground. The low rock mound seemed to represent the fire-cracked rocks which had been removed from the oven after use, and the clay lined circular area the pit itself.

The fill of the pit was cleaned out in an attempt to determine the nature of this feature. This disclosed a clay lined, basin-shaped pit measuring 1.3 m. in diameter, and about 50 cm. in depth. Water had apparently settled in the bottom of the pit after removal of the heated rocks, and consequently the clay lining of the bottom had dissolved. The clay lining was burnt. No wattle impressions were observed. The fill of the pit consisted of fine laminated sandy soil, apparently water deposited. This was mixed with fire-cracked rocks. No artifacts were found in direct association.

Discussion

Although pit ovens have a nearly world wide distri-
bution, one of the centers of their use seems to have been the Southwestern United States and northern Mexico. In this area they are usually assumed to have been used for the preparation of mescal or other plants of the agave type (Beals 1932: 164-5).

In the case of the La Playa pit ovens, however, this use is questioned. First of all, no agave of any kind grows in the immediate vicinity today, and a climatic shift which would have discouraged its growth is doubted. Second, is the fact that the site seems to have been a marsh when occupied, an environment not conducive to the growth of agave, which is fairly well restricted to the higher mountains (Castetter and Bell 1942: 61).

As to what was cooked in the pit ovens, this remains a problem. Castetter and Underhill (1935: 15) note that the Papago pit bake cholla joints and buds, as well as agave. Since various species of cholla are common on the site today these are a possibility. Occasionally animal bones are found around the eroded pit ovens, but it is doubted that fauna were often cooked in the pits.

Castetter and Underhill (1935: 15-6) describe the use of pit ovens among the Papago in the following terms:

Whole cholla joints, as well as the buds, are pit-baked and dried. Women go out in parties to gather the crop, this being done with wooden tongs made of a length of giant cactus rib, split in two. The buds or joints are collected in coiled basket bowls and brought
to a central point where an old woman directs the baking. When the picking is ended, a pit is dug, stones placed in it and heated with a mesquite fire, since creosote bush burns up too quickly. When the stones are hot they are removed and the pit lined with ink weed or with grass. Next a layer of buds or joints is placed in the pit, then hot stones, then the pit filled with alternate layers of ink weed or grass and buds and covered with earth. They camp all night while the product is baking, and roast in the campfire ashes that portion of the product which has been reserved for their evening meal. The women carry home the roasted cholla and continue to go out for other batches until a large area surrounding the village has been picked over.

The use of pit ovens in cooking mescal is reported by Hibben in a personal communication to Fulton and Tuthill (1940: 37-8). The area is northern Mexico.

Young mescal shoots were the food that was being prepared. These pit ovens were similar in shape and size to those of the prehistoric period. They were heated by a fire built in them, and at the same time rocks were heated in a fire on the surface of the ground near the pit. When the pit oven was thought to be sufficiently hot, the embers and ashes were carefully removed and the heated rocks were rolled into the pit. The mescal shoots were placed on the rocks and the whole pit was then covered over with dirt and left for twenty-four hours. At the end of that time the food was deemed to be thoroughly cooked.

Pit ovens and fire-cracked rock occur quite frequently in Hohokam and Mogollon sites, but this method of cooking seems to have been less frequent in the Anasazi area. In the latter region, the pi-gummi oven (Roberts 1932: 44) may have been a parallel development, but in this case heated rocks were apparently not a part of the cooking process.

The southern Arizona development probably has its
origin in the Cochise Culture. Sayles and Antevs (1941: 21-3) note the presence of undercut and basin-shaped pits, perhaps used in food preparation in the San Pedro stage site, Benson:5:10. Numerous other occurrences of similar pits are noted for southeastern Arizona during the San Pedro stage, and fire-cracked rocks are often present in quantity at these sites (Sayles 1945: 1-4; Haury 1940: 56). If these pits can be interpreted as ovens, it is interesting to note the long persistence through time of this feature. Quite similar pits are present throughout the later archaeological record, and also were used during the historic period.

One center of development of these features seems to have been the Dragoon area of Arizona, including the Gleeson and Tres Alamos sites. At the Gleeson site, near Tombstone, the predominately type had undercut sides, although others occurred with vertical sides or slightly bulging walls. Many bore small holes in the bottom, a feature not noted at La Playa. All of the Gleeson pit ovens had burned walls indicating fires were built in the pits, and all contained varying quantities of fire-cracked rocks (Fulton and Tuthill 1940: 20-5).

Four pit ovens were excavated at the Tres Alamos site, yielding two types. Two of these were basin-shaped with slightly outflared rims, while the other two were very slightly undercut with rounded bottoms. All were clay lined,
burnt, and all contained fire-cracked rocks (Tuthill 1947: 35-8).

Elaborate pit ovens occurred at Pearce in the Sulphur Spring Valley (Trishka 1933: 428-30, Fig. 13). Here they were present in large circular pit houses. Seven types were delineated, based on shape differences and the pattern of holes in the bottoms of the pits. These varied in placement, and as to whether the holes slanted or were set vertically.

The Grewe site yielded seven pit ovens. All were apparently basin-shaped, clay lined, and burnt. Fire-cracked rocks were present in each, and each had small depressions in the bottom. The pit ovens ranged from seven and one-half to eight feet in diameter, and from 20 inches to three feet in depth (Woodward 1931: 15).

Two types of pit ovens occurred at Roosevelt (Haury 1932: 58). The first type included basin-shaped, shallow pits, seldom larger than two feet in diameter. Usually fire-cracked rocks were present in the pits. The second type was much larger, with an inner pit and a large flaring rim. The total depth of these was as much as five feet and the diameter 11 feet. They were clay lined, burnt, and contained fire-cracked rocks.

Pit ovens occur frequently in Mogollon sites, from Mogollon 1 through 4, excepting Mogollon 2, as none are de-
finitely assignable to this period. Mogollon 1 pit ovens are reported from the Cave Creek and Bluff sites, Mogollon 3 ovens from the San Simon Village and Bear Ruin, and Mogollon 4 hearths from San Simon and Los Tules. They vary widely in shape and size, basin-shaped and vertical sided pits being the most common. Many were clay lined and most contained fire-cracked rock and showed evidences of burning. More detailed information on Mogollon ovens is drawn from the Bluff site report (Haury and Sayles 1947) and the Bear Ruin report (Haury 1940).

The Bluff site Mogollon 1 oven is described as being oval in outline, with outward sloping sides. It was about three meters in diameter, cut into bed-rock, clay lined, and heavily burned. A large midden of burned rock adjoined the pit on the southeast side (Haury and Sayles 1947: 45).

Other occurrences in the Forestdale Valley are noted for the Bear Ruin where four types of pits were present in this Mogollon 3 village. Included in the four types are shallow basin-shaped pits, pits with sloping sides, pits with vertical sides, and pits with undercut sides. Quantities of fire-cracked rock are also noted for this site (Haury 1940: 58-62).

One of the above descriptions of the use of pit ovens was drawn from the ethnographic literature on the Papago (Castetter and Underhill 1935: 15-6). The presence of these
features is also noted for the Pima (Russell 1908: 71-5) who prepared mescal, cholla, salt bush, and screw beans by this process. Spier (1933: 52-5) records their use among the Maricopa for cooking seeds and mescal. All three of these ethnographic occurrences are in cultures which may be historically directly related to the archaeological manifestations of the same area of southern Arizona. Another ethnographic occurrence which should be noted is that of the Apache. Probably these people picked up the use of the pit oven after arriving in the Southwest from groups already present. Their nomadic existence made the pit oven a very useful feature, and it was one of the more common methods of food preparation among the Apache, especially for cooking mescal, which was greatly depended on as a food source (Cremeny 1868: 217).

This brief summary of pit oven occurrences in Southwestern sites indicates that the most elaborate types of pit ovens occur in Hohokam sites or Hohokam influenced sites, while the simpler forms more often are present in Mogollon sites. Elaborations were not present at the La Playa site, simple basin shapes prevailing. This perhaps indicates a closer relationship with the Mogollon, in terms of this feature.
BURIALS

Two types of disposal of the dead, inhumation and cremation, occur at the La Playa site. Both forms are frequently found eroding from cut banks, and exposed by sheet erosion (Figs. 9, 10). Although no reliable figures are available, the impression was gained that they occur in about a one to one ratio. Both flexed and extended burials occur, as do in place cremations and calcined bones deposited in pits. Offerings are of infrequent occurrence. Two inhumations and two cremations, all of which were exposed by erosion were excavated.

Cremation 1

The first cremation excavated was exposed by erosion at the eastern end of the site, near the Santa Ana-Altar highway (Fig. 2). Erosion had nearly destroyed the outline of the pit. All that remained was a curved section of the wall on the northeast, and a section of floor south of this. These were about 60 cm. below the present surface of the ground. Both were heavily burned, indicating an in place cremation. The remaining section of the pit wall rested on a baked surface, which may represent an earlier cremation or the floor of an eroded pit oven. The undestroyed sections of the cremation pit indicate a probable oval outline and a
FIGURE 9

Eroded cremation.

FIGURE 10

Eroded inhumation.
straight walled, flat bottomed depression. This was at least 1.0 m. in length and 50 cm. in width. The uneroded section was only 4 cm. in depth.

The cremation itself consisted of numerous fragments of charred human bone within the confines of the remaining sections of the pit. In addition ash, charcoal, and seven cores from Glycymeris bracelet manufacture were present. The latter were apparently offerings. All were burned, probably with the body. The body was that of an adult about 30 years of age.

Cremation 2

Cremation 2 was located in the same eroded section of the site as Cremation 1 (Fig. 2), but was in much better condition. On discovery, the walls on the southwest and northwest sides extended from 3 to 5 cm. above the eroded surface of the ground. Burned human bone, fire-cracked rock, and fired clay fragments from the pit walls were exposed on the surface. The top of the walls were 50 cm. from the present uneroded surface of the ground, but the original relationship of the pit to this surface could not be determined due to erosion in the immediate area of the cremation.

This was definitely an oval pit, with straight sides and a flat bottom. The pit wall on the northeast end was
completely eroded away, and the wall on the southeast side partially gone. As a result of the fire the walls and floor of the pit were orange to gray in color. Walls were baked to a thickness of from 3 to 4 cm. and the floor to a depth of 5 cm.

The oval pit, which was oriented northeast-southwest, was filled with some 6 cm. of ash, charcoal, burned human bones, and earth, above which was a layer of about 8 cm. of earth, wash from the walls, and a smaller quantity of calcined bone. An adult about 30 years old is represented by the remaining fragmentary bones. No offerings were present, and the only other objects in the fill were a few fire-cracked rocks, scattered throughout. Cremation 2 pit measured 1.43 m. in length, 83 cm. in width, and had a remaining depth of 14 cm.

Burial 1

Burial 1 was exposed by erosion in a small gully in the east central part of the site, near the irrigation ditch (Fig. 2). It was tightly flexed with the knees against the chest and the hands in the head region. The burial was lying slightly on the right side, and was oriented north-south, with the head to the south. Due to erosion the presence or absence of a pit could not be determined. The feet were
even with the present surface of the ground, and the hands were 20 cm. below the surface, as the burial sloped from north to south. The skull was nearly completely destroyed by erosion. No offerings were found, but red ochre stains were present on many of the bones, indicating that the body either was liberally treated with this substance, or that the bones had been painted after the flesh decomposed.

Burial 2

Burial 2, located in the central part of the site (Fig. 2), was nearly completely exposed by erosion. The top of the skull had been planed off by this process. It was fully extended, oriented northeast-southwest, and facing northeast. The right arm was lying along the side and the hand was partially under the pelvis. The left arm was crossed over the chest. No offerings were present, and no burial pit could be delineated. A young adult around 20 years of age is represented.

Discussion

The method of disposal of the dead has, in past archaeological work, proven to be a characteristic quite usable in relating archaeological remains. This is usually the case when one type of burial is typical of an archaeolo-
gical complex. In the case of the La Playa site, however, there are at least four methods of disposal of the dead, indicating a more complex situation.

An examination of the literature of the surrounding areas for comparative data indicates that all four of the La Playa types are known from previously excavated sites. To the north in the River Hohokam area cremation was the general practice. Most similar to the La Playa pit cremations are those of the Sacaton phase, small pits in which the calcined bones and offerings were placed after the body had been reduced in a crematory pit (Gladwin and others 1937: 93). Crematory pits, oval basins large enough to hold a slightly flexed adult, also occur in this region (Gladwin and others 1937: 95). These are generally similar to the in place cremations which occur at the La Playa site. Inhumations, both flexed and extended, appear in the Sacaton phase, but are of infrequent occurrence (Gladwin and others 1937: 93). Both flexed and extended inhumations also occur at La Playa.

In the Desert Hohokam region of Papaguería, inhumation seems to have been the common practice, as noted in excavations at Valshni Village, Jackrabbit Ruin, and Ventana Cave. Both flexed and extended burials occur, as at La Playa (Haury 1950: 6-12, 461).

Mogollon burials were primarily flexed inhumations during all periods. They are usually found in pits scattered
throughout the village. Orientation to the east or northeast was most common, but orientation in other directions often occurs (Wheat 1955: 71).

South of the Trincheras Culture area comparative data are available from a site near Guasave, Sinaloa (Ekholm 1942: 39-44). Here, the prevailing method of burial was extended inhumations, although secondary bundle burials, and burials placed in large jars with bowls as covers did occur. All of these are considerably later in time, and it is doubtful if they are related to the La Playa methods of disposal of the dead.

In summary then, this examination of the literature indicates that all of the methods of disposal of the dead at the La Playa site are closely paralleled in the surrounding regions. The closest relationships would seem to have been with the Hohokam, of both the River and Desert Branches, although Mogollon influence might also explain the presence of inhumations.

TRINCHERAS

The name for the Trincheras Culture is derived from the most obvious architectural feature of this archaeological manifestation, the terraced hillside sites. The Spanish word trincheras is translated as "trench" or "entrenchment".
It was early applied to these structures, since it was assumed they had a defensive function (see quote from Manje in section entitled "History").

The most elaborate of these terraced hillside sites is situated seven miles south of the La Playa site, and bears the name Las Trincheras (Fig. 1). This was apparently the first of these sites to be named, and this name was then extended to other comparable sites as they were discovered. Eventually it was recognized that there were other characteristic traits of the manifestation and the word "culture" was appended. "Trincheras Culture" now refers to the culture area and its distinctive traits.

Although a major part of the La Playa site is somewhat of an anomaly, because it occupies a large flat, it can be architecturally related to other sites of the Trincheras Culture through the presence of terraces on two hills to the north of the flat (Fig. 2). The more extensive of these sets of terraces occurs on a hill at the northeast corner of the site on the west side of the Río Boquillas (Fig. 12).

The eminence itself, is steep sided, rounded, and has a roughly oval outline. The terraces are present near the top and occur on all sides, although they are best preserved at the north end and on the west side of the hill. The longest of these measures 75 m. while the shortest is about 10 m. in length. The number of levels present varies
from two to four. Terrace width ranges from 1.5 to 5 m. Each terrace is approximately 1 m. above the one below.

Roughly circular cleared areas with occasional possible traces of dry laid masonry walls are present on the terraces. These may represent the remains of former houses. Test excavations were made in eight of the most probable of these with negative results in all cases. No cultural material was found below the surface of the ground. The testing did disclose the method of construction of the terraces themselves, however. In those cases where bedrock did not occur immediately below the surface of the ground, a fill consisting of dirt mixed with large quantities of small rock fragments was encountered. Each terrace was roughly faced with rock laid without mortar. For the most part, these retaining walls are eroded into rounded piles today. A surface collection made from the terraces yielded ten sherds of Trincheras Purple-on-red, and 22 sherds of plain brown ware.

The second terraced hill at the La Playa site is situated near the center of the Cerros Boquillas, approximately on a mid-line running north-south through the site (Fig. 13). In this case, the terraces are near the top of a very steep sided, rather pointed eminence. Four levels are in evidence, averaging about four to five meters in length. A possible house foundation, again circular, is present on one of the terraces. The surface collection from this set
FIGURE 11

General view of the La Playa site from the Cerros Boquillas, looking southwest.

FIGURE 12

Cerro de trincheras at the northeast corner of the La Playa site.
FIGURE 13

Cerro de trincheras on north side of La Playa site.

FIGURE 14

Eroded north central section of the La Playa site showing the pavement of fire-cracked rock.
of terraces includes 21 brown ware sherds.

Considering these structures in relation to the large open flat below, it can be suggested that they were constructed as places of refuge to which people on the flat could retire when attacked. The possible presence of houses might indicate preparations for an extended stay during one of these attacks, but the lack of any quantity of residue from habitation makes any long time occupation doubtful. The trincheras immediately north of the site may also have functioned as a lookout, as this is the nearest eminence to the flat from which a view in all directions may be had.

This discussion implies the presence of antagonistic groups, but just who these might have been is unknown. An examination of the earliest Spanish documents indicates that both intertribal and intratribal difficulties occurred among the Pima speakers and their neighbors, and perhaps something of this sort can be suggested, although it is not known whether the Trincheras Culture can be attributed to the ancestors of the historically known groups in the same region.

Discussion

As noted above, trincheras (the term is here restricted to mean terraced hillside sites) are the most typical architectural features of the Trincheras Culture. Passing notice of these features has been made in the literature
from the time of initial European contact in northwestern Mexico to the present. The single most comprehensive study of these structures was made by Sauer and Brand, who found them occurring from west of the Sonora River Valley well out into Papaguería (1931: 117). On the north they extend into the present day Sells Papago Reservation as far as Hickiwan (Hoover 1941: 230), and into the area about Tucson (Arizona State Museum survey files). A fortified site near Gila Bend, Arizona T:13:8, may be related, indicating a possible distribution as far north as the Gila River. The southern limit has not yet been determined, although Bandelier notes their presence as far south as Banamichi, on the Sonora River (1892: 509). The area of greatest abundance of **cerros de trincheras** is the Magdalena Basin including the Altar Valley (Sauer and Brand 1931: 87-100).

A similar development extending much farther south is that of the Loma San Gabriel occupancy in extreme northern Durango and southern Chihuahua (Kelley 1956: 132-33). Excavations at the Weicker site (Kelley and Shackelford 1954: 145-9) in the Sierra Madre west of Durango City disclosed rectangular living areas enclosed in low walls which contained slab-floored houses. The hillside on which these structures were found had been leveled and broadened by the construction of a terrace. Similarities can be seen in the artifacts of the Loma San Gabriel complex and those of the
Trincheras Culture. Loma San Gabriel-like material extends quite far north along the eastern side of the Sierra Madre (Kelley 1958, personal communication).

A comment should here be made on the numerous terraces which occur in the Sierra Madre to the east of the Trincheras region. These have been described by Lumholtz, among others, who labeled them trincheras. From his descriptions and photographs (1902: 21-2) most of these appear to be agricultural terraces, as they are built across arroyos, probably to retain soil and water runoff. Similar structures occur in Cave Valley, Chihuahua (Lister 1958: 8). Lumholtz described agricultural terraces, which closely paralleled these archaeological remains, in use among the Tarahumara during his visit (1902: 152-5). It would seem better to retain the term trincheras for those structures occurring farther west, which apparently had different functions.

Related to the terraced hillside sites are rock corrals, circular or rectangular constructions of dry laid masonry. These enclosures are either associated with Trincheras sites, as at Las Trincheras, or found separately, as at El Cerrito del Diablo north of Las Trincheras. In the case of the latter corral, small house foundations of dry laid masonry are present within the larger circular enclosure. Hinton (1955: 5) describes these structures in the
Altar Valley, noting a size range of 20 by 20 feet to 60 by 60 feet for the square examples.

The range of rock corrals is apparently coterminous with that of the **cerros de trincheras**. Frick (1954: 24-7) describes two Mesa-top Rock Enclosures which were discovered on the east side of the Santa Cruz River between Tubac and Chavez. Both appear to be quite similar to the rock corrals associated with the Trincheras Culture. Others are present in and around Tucson, Arizona (Arizona State Museum survey files).

Many of these structures were apparently contemporaneous with the occupation of the La Playa site, as similar pottery types occur on them (Sauer and Brand 1931, Fig. 2). One of the problems of correlating these structures is the small quantity of pottery usually present, and for this reason any statements on chronology have to be made with reservations. Some of the **cerros de trincheras**, such as Las Trincheras, may be later in time as a few sherds of Ramos Polychrome have been collected from the surface of this site. This polychrome is associated with large quantities of plain brown ware, and a very small quantity of Trincheras Purple-on-red, perhaps indicating that trincheras sites with only plain ware occur late in the sequence. The lack of Trincheras Purple-on-red in quantity might indicate that this type was dying out. It is entirely possible that some
trincheras were being used in the historic period (see below).

Interpretations as to the functions of these structures vary greatly, but a common area of agreement has been a defensive purpose. This is supported somewhat by statements in Nentwig's and Pfefferkorn's description of the Pima revolt of 1751. The Pimas were joined wholeheartedly by the Seris in this revolt against Spanish oppression, and the two groups fortified themselves at Cerro Prieto, in western Sonora. Nentwig (1894: 196) describes the location of this hill as being 12 leagues west of San José de los Pinos, 12 leagues south of Pitic, 14 leagues east of the sea, and 30 leagues north of the Yaqui River.

They constructed successive breastworks of stone, assembled and piled on top of each other, from the gate ways of their fearful mountain to its peaks. Each breastwork was from 30 to 40 paces distant from the next. This precaution was taken so that should the defenders be dislodged from the first breastwork by the Spaniards, they could withdraw to the second, and if further pressed to the others. Moreover, from behind this parapet they could inflict severe injury on the advancing foe without being in great danger themselves. And it befell as they had planned. (Pfefferkorn 1949: 154.)

Bandelier records traditions from the Opata country, farther east, which indicate a similar function for the cerros de trincheras of this region. He says, for instance, that the

Cerro de Batonapa near Banamichi on the Sonora River served as a place of refuge for the inhabitants of
Motepori, Badeuachi, Vaynorpa, etc., if attacked by the other Opatas, those from the valleys of Oposura and Cumpas, or even by their immediate neighbors of Huepaca and Aconchi. The latter had a refuge hill at Huepaca, quite as extensive as that of Batonopa. (1890: 71.)

An interpretation of these structures as having a defensive function certainly seems valid in certain cases, but in others questions arise. The site of Las Trincheras, for instance, has small circular house foundations of dry laid masonry in quantity on the terraces. In addition the residue of occupation, such as sherds, manos, metates, mortars, hammerstones, and shell ornaments, occurs in quantity. This would indicate that the site had been continuously occupied for some time, and probably did not serve entirely as a defensive fort to which the Trincheras people retired when attacked. In fact, other than being built on the side of a steep hill there is nothing especially defensive about the site. Terraces and houses extend to the bottom of the hill, and there is no evidence of a wall which might have served to defend these lower structures.

At the La Playa site it was suggested that the set of trincheras on the hill immediately north of the site might have functioned as a lookout, in addition to having been used for defense. In the last analysis, which is far from being made, it will probably be discovered that these structures had differing and perhaps multiple functions.

Rock corrals have also been ascribed a defensive
nature (Sauer and Brand 1931, Pl. 13), although Hoover (1941: 231) feels that, in some cases, these were ceremonial. This discussion of the function of the trincheras cannot be complete without at least a mention of Huntington's (1914: 69) interpretation that the trincheras were agricultural terraces, made necessary by climatic change and recent desiccation of the Southwest. This explanation has been quite ably discounted by Sauer and Brand (1931: 119-20) and no further reference is necessary.

The apparent defensive nature of many of the trincheras and rock corrals in northern Sonora brings to attention one of the problems in the archaeology of southern Arizona: the distribution of Gila Polychrome. Gila Polychrome occurs widely during the 14th century from Phoenix on the west nearly to the Rio Grande on the east, and from Flagstaff in the north to the area around Casas Grandes, Chihuahua, in the south. Its area of greatest abundance is in the Gila-Salt drainages of Arizona as far west as Phoenix. With the exception of a few isolated occurrences in Papaguería, such as Jackrabbit Ruin and Ventana Cave (Haury 1950: 17), Gila Polychrome stops abruptly at the eastern border of Desert Papaguería.

The eastern border of Papaguería, around Tucson, is also the area where trincheras sites and rock corrals begin to appear in quantity. The presence of Tanque Verde Red-on-
brown in sherd collections from trincheras and rock corrals, recorded in the Arizona State Museum files, indicates that at least some of these sites were occupied as late in time as the 14th century. The surface collections from these sites contain no Gila Polychrome, however. This presents the problem as to why the apparently very popular and widespread Gila Polychrome did not, except in rare cases, penetrate Papaguería. The answer perhaps lies in the trincheras sites and rock corrals, which, if they can be interpreted as defensive in nature, indicate antagonistic groups of people. Gila Polychrome has been considered to be one of the best indicators of the Salado intrusion into southern Arizona (Haury 1945: 205), and perhaps the Salado were the group being resisted by the occupants of Papaguería, the Desert Hohokam (Haury 1950: 8).
CHAPTER III
ARTIFACTS

As is true for most archaeological reports, the description of the artifacts will bulk large in this monograph. Adequate descriptions are felt to be even more necessary in this initial detailed report on the Trincheras Culture, as it is on these descriptions that future comparisons of other sites in the area will have to be made.

With the exception of a very few objects recovered from the rock mantle of Mound 1, all of the artifacts described below come from the surface of the site. A large collection present in the Arizona State Museum, from the surface of the site, was supplemented by material gathered by the author and purchased from local inhabitants. In addition, a private collection owned by Mr. Carl Ronstadt, of Tucson, was incorporated in the descriptions.

It is unfortunate that all of the artifacts come from the surface, but this could not be helped in the case of the La Playa site, as uneroded sections of the site, where in situ material might be found, are very few. Undoubtedly, data on the associations of the artifacts with features and with other artifacts would have added much in this description of the La Playa site. Too, it is entirely
possible that data on cultural changes have been lost by this unavoidable lumping of all the artifacts from the site. But there is a brighter side to this picture, as the great amount of erosion has exposed artifacts over the entire extent of the site, and has allowed collection of, probably, the full range of artifacts present, in quantity. It is doubted that this would have been possible if the recovery of artifacts had to depend on excavation, as the time available for field work was limited.

The collection of large numbers of artifacts by other visitors to the site, both amateur and professional is a factor which may have skewed the representativeness of the sample. The removal of overburden and the exposure of the culture bearing deposits by erosion has made collection of artifacts from La Playa a rather simple process, and it can be assumed that full advantage has been taken of this situation. It should be noted, however, that the three collections made at the site and reported herein (Arizona State Museum, Ronstadt, author) are internally consistent. Consequently, it is felt that the artifacts described are fairly typical of the range of material at the La Playa site.
ARTIFACTS OF CLAY

Artifacts of clay, including pottery, are not well represented at the La Playa site. In the case of pottery this may be a reflection of the use of different types of containers, such as baskets, or may as is discussed above, be related to a seasonal occupation of the site. The lack of great quantities of clay artifacts, as are often recovered from Southwestern sites, is in one respect unfortunate, since pottery is the most useful of the material remains recovered by the archaeologist for delineating cultural entities and establishing cultural relationships. In this case, however, the situation is not so serious. Even though the quantity is lacking, the ceramic material present can be easily grouped into a few types which seem to represent the range for the Trincheras Culture, at least for the time period under consideration, and perhaps for later periods (Sauer and Brand 1931, Fig. 2).

Pottery

Pottery description, in the Southwest, has developed over the years into a standardized and formal procedure. It has come to the point now where all that seems necessary is to follow one of several classificatory guides and fill in the information asked for under the various categories.
During the study of the pottery from the La Playa site reference was made to a number of the descriptions which were based on this formalized procedure, in an attempt to distinguish the local pottery types from others which had been described in the area. This led to a number of questions about the procedure of Southwestern pottery description, many of which were answered by a perusal of Shepard (1956). This publication forms the basis for the following examination of Southwestern pottery description.

The first point to be considered is the advisability of using a guide for pottery description which supplies certain set categories into which the data from all Southwestern pottery types are to be fitted. Shepard (1956: 96) questions the advisability of this procedure for several reasons.

First, is the fact that pottery is a plastic medium, and there are consequently numerous directions in which the potter's interest and ability may lead him. Certain aspects, such as vessel form, may be emphasized in one instance, and others, such as firing techniques, in another. Too strict following of a guide will tend to obscure the various directions which a potter or a group of potters will take, and will not allow the student to emphasize the essential points of the ceramics being studied.

A second point which Shepard (1956: 96) makes in
this regard is that new techniques are constantly appearing and new methods are being introduced. The use of a guide in pottery description tends to set the techniques and methods outlined in the guide soundly in the ceramic student's mind, and does not allow a ready acceptance of new ideas when they appear. There is no reason to assume that the traditional techniques and methods of pottery description are the best available; in fact, Shepard (1956) casts serious doubt on the validity of a number of these.

Finally, is the fact that a consideration of many of the published descriptions and an examination of the wealth of empirical data included in these often leaves the student with a doubt as to just exactly what the described pottery type looks like, and as to how it can be distinguished from other similar types. Perhaps it is impossible to present a written description of pottery which will allow certain identification of the type without reference to a type collection of sherds. It is felt, however, that descriptions can be made more meaningful by leaving out a certain amount of extraneous detail which is included when guides are followed to the letter for description, and by emphasizing those aspects of the type which are most characteristic and distinguishing.

Before going further with this discussion perhaps a question as to the purpose of pottery description should be
asked. Shepard (1956: 102) presents three levels of analysis which can be considered. First, she says that "as long as pottery is used primarily as a means of establishing relative chronology or setting up sequences, attention will be centered on means of type identification." Second, "if we are interested in pottery as a means of establishing trade and cultural contacts, we will very likely concentrate on composition and source of materials." Third, "if we are interested in tracing the history of technological development, we will give special attention to physical properties."

To date, in the Southwest, pottery has been used primarily as a means of establishing relative chronology or setting up sequences, and secondarily as a means of establishing trade and cultural contacts. Presumably, therefore, attention has been centered on a means of type identification and on composition and source of materials.

Pottery, to the archaeologist working with pottery-bearing horizons, is probably the most important cultural item with which he is concerned. This follows from the plastic nature of the medium, its constant change through time, and its resistance to destruction in sherd form. At the close of every field season, the archaeologist is faced with the problem of identifying large quantities of pottery as to type, and published descriptions form a major source
of information in these identifications. Consequently, it would appear that the more ease with which pottery identifications can be made the better.

Perhaps ease in type identification is the key to all pottery description when it is to be utilized for establishing relative chronology or setting up sequences. Each archaeologist as he comes face to face with the problem of describing pottery and distinguishing one pottery type from another is able to pick out certain characteristics of a type in which it differs from all others. These are the characteristics by which he identifies the pottery type, and are also the ones which should be presented to the reader, who can in turn easily make identifications of the same type.

This cannot be done by strictly following a guide to pottery description, and merely supplying the information called for under the various categories. Different elements will be utilized to distinguish different pottery types and no set form can hope to include all of these. Also, any given guide will ask for information which has no bearing on the identification of a particular type.

As an alternative to the use of one of the standard guides for pottery description, the following suggestions are offered. First of all, an awareness on the part of the archaeologist of the physical properties of the material he
is working with; second, a knowledge of the numerous techniques which can be utilized to modify the physical substance; and third, some realization of the various methods and techniques which can be used to study pottery. Probably the most comprehensive source of data for all three of these categories is Shepard (1956).

With an awareness of these possibilities in mind, the archaeologist can go on to describe his pottery in more easily understood and more meaningful terms. In addition, the archaeologist should think of his pottery in terms of levels of analysis. If he is primarily interested in establishing relative chronologies or setting up sequences, those aspects of the pottery to be emphasized in the description are those by which he is able to identify the type. It is to be expected that the aspects which are utilized to identify a type will vary from type to type, depending on the physical properties of the substances and the techniques used to modify them.

A description of this nature can easily be handled in a few concise paragraphs which simply list the distinguishing characteristics. Other levels of analysis can probably be handled most easily by separate studies. This follows primarily from the need to make detailed laboratory analyses. This is true, for instance, in an examination of the composition and source of materials in a study of trade
and cultural contacts. Even studies of temper necessitate binocular and petrographic microscopic work, except in the rare case where some very distinctive temper is present, to make them scientifically valid (Shepard 1956: 157).

Although no attempt will be made to outline the aspects which should be included in this description of the identifying characteristics of pottery types, since this would in effect establish another guide, a few points should be considered. One aspect of pottery studies which is often omitted from the description is the size of the sample. The knowledge of whether a type is based on three sherds or on 300 and a number of whole vessels should always be included, as it is through this information that the reader is given some basis to judge the validity of the type. Whenever possible, physical properties should be described by reference to some standardized measure, for example the Munsell Soil Color Chart for color observations. Terms for pottery descriptions have, in many cases, established and well defined meanings, and whenever possible these should be used in the description.

As to the characteristics which will be included in the description, these are up to the archaeologist. They should be selected on the bases of making the description clear, concise, and easily usable for the person faced with the problem of making type identifications.
Trincheras Purple-on-red

In this description of the predominate pottery type from the La Playa site a short description outlining the essential characteristics of the type is followed by a section adding details which are important for a full comprehension of the type. In order to make the data included in the detailed description comparable to other Southwestern pottery descriptions, which have been presented according to the outline of a guide, the format of A Guide to the Description of Pottery Types in the Southwest (Gifford 1956) is, in general, followed. A few modifications of this format were felt to be necessary, and for the most part, the form presented here follows Wasley (1959a). As the validity of a number of the categories presented in this guide are questioned, and as others do not apply specifically to Trincheras Purple-on-red, only those headings which pertain to this pottery type are included.

General Description

Trincheras Purple-on-red vessels occur in three shapes: jars, seed jars, and bowls. Decoration, which is applied on both unslipped reddish brown backgrounds and red slipped backgrounds, is done with a purple paint manufactured from specular iron. Most usually, designs are built up of geometric elements, the most common of which are regular sawteeth, sawteeth pendant from the rim, cross hatched
squares and diamonds (Fig. 16). Band patterns predominate. In a majority of cases polishing over the decoration is present. Deep scoring, probably done with a bundle of grass, occurs on the interiors of seed jars and jars. There is no regular orientation to this scoring.

Detailed Description

Number: 412 sherds; 290 body sherds, 79 jar rim sherds, 26 bowl rim sherds, 15 seed jar rim sherds, 2 unclassifiable rim sherds. Supplemented by examination of a much larger sample at the La Playa site. Construction: Coiling, whether paddle-and-anvil or scraped finish could not be determined with certainty, but probably scraped. Surface Finish: Exteriors of most vessels polished, as are bowl interiors; slipped and unslipped vessels occur in following numbers: jar rim sherds: 43 slipped, 36 unslipped; bowl rim sherds: 12 unslipped, 10 slipped interior and exterior, 3 slipped interior, 1 slipped exterior; seed jar rim sherds: 13 unslipped, 2 slipped exterior; deep scoring on interiors of seed jars and jars, probably with bundle of grass; no regular orientation to scoring. Surface Color: Red slipped vessels and reddish brown unslipped vessels (most common), 2.5YR 4/6 and 2.5YR 5/4. Form: Jars with flaring rims, rounded shoulders and bases; bowls with straight or slightly incurved sides and rounded bases; seed jars often with
thickened rims formed by folding the rim over and welding it on the interior. **Range Thickness Bowl Walls:** 4 to 7 mm.; average thickness, 5.0 mm. **Range Thickness Jar Walls:** 2 to 8 mm.; average thickness, 5.5 mm. **Decoration:** (a) Paint - purple (7.5R 3/2); thick; manufactured from specular hematite; ranges from sherds with no specular qualities to those with large quantities of shining crystals, depending on whether or not the vessel was polished over the decoration, which process tends to obliterate the specular qualities; majority only slightly specular. (b) Designs - primarily geometric elements; parallel zig-zags, triangular scrolls, negative diamonds, solid diamonds, nested triangles, lines with alternate blocks; most common are regular sawteeth, sawteeth pendant from the rim, cross hatched squares and diamonds; occasional curvilinear elements are running interlocking scrolls and parallel curved lines; jars: single band encircling rim or two bands, second added at shoulder, rim line and pendant sawteeth on interior common; seed jars: single band from rim to approximately point of greatest diameter, rim line; bowls: majority painted on interior and exterior, examples with only exterior or interior paint do occur, design layout is quartered in one case and figured radiating in two, exterior designs in single band, rim line common.
Remarks

Synonym: (a) Sonoran Red-on-buff, Gladwin and Gladwin 1929: 121, Pl. 14; (b) Sonora Red-on-brown, Gladwin and others 1937: 218.


Named For: Site of Las Trincheras, situated about midway between Santa Ana and Altar, Sonora, and about seven miles south of the La Playa site. Type occurs in only minor quantities at this site (Sauer and Brand 1931, Fig. 2).

Described By: Sauer and Brand 1931: 107-9; Withers 1941: 36-40. Withers subdivided the type into two varieties on the basis of presence or absence of specular iron paint. It will be noted that the present description lumps these two varieties, as this distinction has been found to depend rather on the presence or absence of polishing over the decoration than on a difference in paint. This is supported by a reexamination of the Trincheras Purple-on-red sherds from Valshni Village, which indicates the same gradation from sherds exhibiting none or few shining crystals to those with many, as was found at the La Playa site.

Named By: Sauer and Brand 1931: 107.

Illustrations: Sauer and Brand 1931, Pl. 17; Withers 1941, Fig. 12; Di Peso 1956, Pl. 99.

Type Specimens: Arizona State Museum, Tucson.
Type Sites: Las Trincheras, Sauer and Brand 1931, Fig. 2; La Playa.

Time: ca. A.D. 800-1100.

Area of Abundance: Middle Magdalena River, Sauer and Brand 1931: 90-4; Altar River Valley, Hinton 1955: 3.

Trincheras Polychrome

This type has been described by Withers (1941: 41-2), under the name of Altar Polychrome. Di Peso (1956: 362) states that this type is "actually nothing more than Trincheras Purple-on-red with a red counterpoint design added to the purple line design." The sherds from the La Playa site agree fully with Di Peso's description (Fig. 16 g), and consequently his lead in applying the name Trincheras Polychrome is here followed. Little can be added to Wither's description of this type, as only six body sherds were recovered from the La Playa site. It should be mentioned, however, that the purple paint parallels that seen on Trincheras Purple-on-red, in the presence of polishing over the decoration which tends to obliterate the specular quality of the paint.

Plain Ware

Plain ware is represented in the La Playa collection by 388 sherds. That a local reddish brown plain ware was manufactured is attested to by the presence of sherds with local siltstones in the tempering material. In only a few
FIGURE 15

Miscellaneous objects of clay. a, Category 1 figurine; b-f, Category 2 figurines; g, Category 3 figurine; h, sherd disc; i, sherd disc spindle whorl; j, modeled spindle whorl.
Length of g, 43 mm.

FIGURE 16

Pottery designs. a, b, d-f, h-j, Trincheras Purple-on-red; c, exterior of Trincheras Purple-on-red rim sherd; c', interior of c; g, Trincheras Polychrome.
cases, however, can these be identified even with the aid of a hand lens or a binocular microscope. As, for the most part, this plain ware cannot be distinguished from others in the area, except in those few cases where local temper can be identified, a name will not be assigned to the group of sherds. In addition, other and very similar plain wares are apparently present in the collection, indicating trade with surrounding areas. These cannot be distinguished, except in rare cases by temper differences, from the locally made plain wares.

Two rather distinctive plain ware sherds, both probably from the same vessel, should be mentioned. In this case local siltstones are present in the paste, and the sherds probably were locally made. The form is a jar with a low flaring rim, and the distinguishing characteristic is the presence of a roughened base, probably produced by scraping the vessel with a hard instrument when the paste was nearly dry. The scraping process has produced a very rough exterior surface, and in many places the temper has been pulled out leaving pits and depressions. Perhaps this scraping was done to produce a greater area for heat absorption. Superficially, the sherds resemble those with stucco finishes included in Lower Colorado Buff Ware (Schroeder 1952: 16-7).

Plain wares have been little used by the Southwestern
archaeologist in establishing relative chronologies or setting up sequences, as they are so similar from area to area and changed so little through time. They do form an untapped reservoir of data for studies of trade and cultural contacts. Studies of this sort utilizing plain wares, however, require detailed laboratory analyses, especially those which can be done with the use of the petrographic microscope in identifying local and non-local constituents in the paste of sherds from a given site. In addition to the laboratory analysis, more and detailed studies need to be made of the sources of materials within an area. The combination of the two will then allow the local plain wares to be distinguished from those traded in, and perhaps help to clarify the problem of trade and cultural contacts.

Red Ware

Di Peso (1956: 362) briefly describes a red ware which was traded into the Paloparado site, apparently from northern Sonora, under the heading Trincheras Red. This type was fairly well represented at the Paloparado site, as 171 sherds were collected. It is apparently the same as Trincheras Purple-on-red, at least the red slipped sherds, but lacks any painted design. Only 21 sherds of local red-ware were found at the La Playa site, and it is entirely possible that these represent sections of painted vessels
which bore no paint. Consequently, considering the small size of the sample from the La Playa site and the above possibility, it seems better to list Trincheras Red as lacking from the ceramic complex of this site.

Intrusive Pottery

Six sherds which can definitely be identified as intrusives were collected at the La Playa site. All are small and designs are rather indistinct, so question marks have to be placed after the identifications. The first of these sherds is possibly Santa Cruz Polychrome, the distribution of which centers in the Huachuca Mountain area and south and west around the headwaters of the Sonora River drainage (Di Peso 1956: 333).

The other three painted trade sherds are probably Rillito or Rincon Red-on-brown, the distribution of which centers in the Santa Cruz drainage of southern Arizona. Rillito Red-on-brown equates in time with Santa Cruz Red-on-buff, and Rincon Red-on-brown with Sacaton Red-on-buff. A time range from A.D. 700 to 1100 is indicated (Haury 1950, Fig. 2; Gladwin and others 1937, Fig. 106). Two other trade sherds have deep grooves emphasizing the coil junctures, as was done on pottery of the Estrella phase in the Gila Basin (Gladwin and others 1937: 201-2). These two sherds differ greatly in paste from Estrella phase pottery, and may not represent the same tradition, however.
In addition to the above sherds, which can definitely be considered intrusives, there are a number of plain brown and red ware sherds which may represent trade in pottery. Without petrographic examination, however, it cannot be proven that these were not made locally.

Dating

Tentative suggestions of dates for the occupation of the La Playa site were offered in the previous section, which dealt with intrusive pottery. As a conclusion to this discussion of pottery a more detailed examination of the dating problem is offered. Primary dates obtained from dendrochronology or the radiocarbon technique are not available, and consequently reliance has to be placed on secondary dating in terms of trade in pottery.

A question as to the validity of the La Playa dates immediately arises when it is realized that this site is dated by intrusives into sites in southern Arizona, which are in turn dated by intrusives from the Snaketown area. The Snaketown chronology is based on intrusives from northeastern Arizona, bearing primary dates from dendrochronology (Gladwin and others 1937, Fig. 105). In other words, the La Playa site is some three times removed from the area of primary dates.

As these are the only dates currently available, they are accepted until others, with more validity, are
forthcoming. It is fortunate that the most consistent occurrences of Trincheras Purple-on-red are with time equivalents of the Santa Cruz and Sacaton phases of the Snaketown sequence. These, plus the Gila Butte phase, are the three phases in the Snaketown sequence which are dated by means of dendrochronologically placed intrusives. Dates for the other phases are estimates, but the stratigraphically based sequence is probably correct (Gladwin and others 1937, Fig. 106).

Gladwin was apparently the first to attempt a chronological placement of Trincheras Purple-on-red. On the basis of survey work in northern Sonora and the discovery of the type in apparent association with historic material he assigned a relatively late position (1934, Fig. 9). This placement was brought into question with the excavation of Snaketown, and the recovery of three purple-on-red sherds (there designated Sonora Red-on-brown), one each in the Estrella, Sweetwater, and Snaketown phases. This indicated a much earlier date in the Pioneer period (Gladwin and others 1937, Fig. 105).

Since these initial attempts at placing Trincheras Purple-on-red in time, a great deal more work has been done in southern Arizona, and the assignment of this type is more firmly established. In 1950 Haury (352) reviewed these data and stated that the Pioneer period associations of Trin-
cheras Purple-on-red were not real, and that the type must be considerably later. This statement was based on consistent associations of the type with later time periods in a number of sites in southern Arizona.

At the Gleeon site, 3.15 percent of the intrusive sherds consisted of Trincheras Purple-on-red. Hohokam sherds from this site were assignable to the late Santa Cruz and early Sacaton phases, indicating an approximate date of from A.D. 800 to 1000 (Fulton and Tuthill 1940: 47-9). At Valshni Village, Withers (1941: 38-9) noted the occurrence of Trincheras Purple-on-red in the Vamori phase, with only minor associations in the later Topawa phase. On the basis of intrusives from the Hohokam sites to the north in the Vamori and Topawa phases the approximate date for contact with the northern Mexican area was set at A.D. 800-1200.

Minor quantities of Trincheras Purple-on-red were recovered from strata tests 2 and 3 at the Tres Alamos site near Benson, Arizona. Test 3 formed the basis for the Cas-cabel phase at this site, and test 2 established a succeeding Tres Alamos phase. Other trade pottery indicates the contemporaneity of the Cascabel and Santa Cruz phases, and the Tres Alamos and Sacaton phases. A time range of A.D. 700 to 1100 is apparently represented by these two phases of the Tres Alamos sequence (Tuthill 1947: 64, Fig. 6).

Trincheras Purple-on-red also occurred as intrusive
sherds at Ventana Cave, although in this case distributed throughout the pottery bearing levels, and consequently not yielding definite dates (Haury 1950: 353). One other occurrence of this pottery type should be noted. This is the discovery of one sherd on the surface of the Gatlin site, a Sacaton phase village near Gila Bend, Arizona, recently excavated by the Arizona State Museum (Wasley 1959, personal communication). A date of from A.D. 950 to 1150 is indicated for the phase in this area (Wasley 1959b: 148).

In summary then, Trincheras Purple-on-red is seen to consistently occur in the Santa Cruz and Sacaton phases or their time equivalents in the sites of southern Arizona. This association indicates a chronological range of from A.D. 800 to 1100 for the type. Data from Valshni Village (Withers 1941: 38-9) and the site of Las Trincheras (Sauer and Brand 1931, Fig. 2) indicate the possibility that the type lasted somewhat later in time, but any definite statement on this matter will have to await further work in the Trincheras area.

While the time range A.D. 800 to 1100 for Trincheras Purple-on-red has to be considered tentative for the reasons presented above, it would appear that the type is fairly well delimited in chronological terms. It will be remembered that the few intrusive sherds at La Playa generally support this time placement. The need for more work in the
area is brought into relief by the apparent long life of this predominate painted pottery type. It is hoped that as more work is done further distinctions will be discovered which will allow subdivisions of the Trincheras Culture.

The second painted pottery type associated with the Trincheras Culture, Trincheras Polychrome, occurs infrequently in sites situated in southern Arizona. The one, well based, dated occurrence of this type is at Valshni Village. Here the type was present in the early Vamori phase, indicating a time range of from A.D. 800 to 900 (Withers 1941: 43). Another polychrome type, Nogales Polychrome, which has a thick white slip, forms a part of the Trincheras ceramic complex, although it was not present at La Playa. On the basis of its occurrence at Valshni Village, dates from A.D. 700 to 900 can be assigned (Withers 1941: 41).

As both of these types had apparently died out by A.D. 900, and as only one of them, Trincheras Polychrome, occurred in minor frequencies at the La Playa site, perhaps dates in the later part of the time range A.D. 800 to 1100 are indicated for La Playa. Final judgement on this matter, however, had best be postponed until the history of these polychromes is better known. Their infrequent and sporadic occurrence indicates that there may well be other problems associated with the types which are not now realized. One thing which should be explored is the relationship of these
polychromes to others occurring in northern Sonora and southern Arizona, such as Santa Cruz Polychrome, Babicomari Polychrome, and occasional finds of the Chihuahua polychromes.

Figurines

Illustrations: Figure 15 a-g

Number: 16; fragmentary

Description: Three categories of figurines can be delineated on the basis of form difference. The first of these categories contains one example, which is the most elaborate in the collection. Eyes are of the "coffee-bean" type, small added pellets of clay with incisions. The nose is indicated by a projection pressed up from the clay of the face. Nostrils are two small punctates at the base of the nose. The mouth is a simple slit. The neck is indicated by an incision; arms and breasts are represented by small added blobs of clay. The top of the head is rounded and the back of the figurine is concave.

Category two includes five figurines. Only the rectangular heads are represented in four instances, and a portion of the body in the fifth. Noses are again formed by pressing up the clay of the face. Eyes, in this case, are only small punctations, as are nostrils and mouths, when
represented. Breasts are indicated by added pieces of clay on the one specimen retaining a section of the body. All have concave backs. One has a cross hatched design in red paint on the face.

The third category is again represented by only a single example. In this case, the body is a cylinder with a rounded end forming the top of the head. Both the nose and breasts are formed by small added pieces of clay. Eyes, nostrils, and mouth are not shown. Traces of a red paint are present over the entire figurine.

Nine miscellaneous fragments could not be classified above, as none retain the facial region. Most represent legs which were apparently modeled as small cones and added to the rectangular body of the figurine. One specimen, which retains traces of red paint, shows a different method of indicating the legs. In this case they are represented by a groove cut in at the bottom of the figurine.

*Dimensions*: Length of most complete figurines, 35-59 mm.; Width, 10-26 mm.; Thickness, 7-17 mm.

*Comparisons*: The figurine in Category One most closely resembles those of the Santa Cruz phase at Snaketown (Gladwin and others 1937, Pl. 197). Those of Category Two are similar to Snaketown and Sweetwater phase figurines (Gladwin and others 1937, Pls. 201-2), while the single example in Category Three bears no close resemblance to any of the figur-
Solid Clay Bowl

Number: 1; fragmentary

Description: A bowl shaped object with straight sides and rounded base made solidly of clay. The upper surface is slightly concave. The specimen is reconstructed, having apparently been fractured by fire. Pieces are missing from the concave surface, and from one side. The exterior is roughly finished, probably by paddling, and slightly polished.

Dimensions: Diameter, 129 mm.; Height, 102 mm.

Remarks: The concave upper surface may have served for grinding or mixing, although no traces of these processes remain.

Impressions in Clay

Number: 2

Description: The first specimen to be described under this heading is the impression of a 2/2 twilled mat. The example is quite small and the above identification of the technique is necessarily tenuous. The second object is a small piece of daub with stick and straw or grass impressions.

Remarks: Possibly the latter specimen is from one of the
late Mexican structures present at the site, since, as noted above, no prehistoric houses were located.

Spindle Whorls

Illustrations: Figure 15 i, j
Number: 3; 1 complete, 2 fragmentary
Description: Two of the clay objects classified as spindle whorls are simple sherd discs with ground edges and central biconical perforations. Both are of plain brown ware. The third whorl was apparently modeled for the purpose, rather than having been made of a discarded sherd. It is circular in outline, elliptical in cross-section, and partially perforated from each face. One edge is missing.
Dimensions: Diameter, 29-64 mm.; Thickness, 4-10 mm.
Comparisons: Perforated sherd discs which may have functioned as spindle whorls are of widespread occurrence in the Southwest, but the modeled forms have a much more restricted spatial and temporal distribution. In the main, they are a characteristic of the Classic Hohokam period, and are found especially well developed in the Desert Hohokam region (Scantling 1940: 40-3). Other Classic period occurrences are Los Muertos (Haury 1945, Fig. 71) and Casa Grande (Fewkes 1912, Fig. 43). The most northerly point of occurrence so far reported from the Southwest seems to be Elden Pueblo
Earlier occurrences are noted for the Vamori and Topawa phases at Valshni Village (Withers 1941: 54-5), and Ventana Cave (Haury 1950: 359-60). Similar whorls continue south into Mexico. They are quite highly developed at Guasave (Ekholm 1942: 87-8).

Sherd Discs

**Illustrations:** Figure 15 h

**Number:** 7; 6 complete, 1 fragmentary

**Description:** Crude discs formed from sherds by grinding the edges, and the faces in two cases. Three are of Trincheras Purple-on-red, and the other four are plain ware.

**Dimensions:** Diameter, 13-58 mm.; Thickness, 4-9 mm.

Miscellaneous Worked Sherds

**Number:** 4; fragmentary

**Description:** Included in this miscellaneous category are two sherds with ground edges, both plain brown ware, and two with biconical perforations. The latter are Trincheras Purple-on-red.

Summary and Conclusions

This section on Artifacts of Clay has given special emphasis to an examination of Southwestern pottery descrip-
tion, as it is traditionally handled. It is felt that some serious questions can be asked about the use of a guide for description which gives certain set categories into which data from all pottery types are to be fitted. A more open type of description, emphasizing the distinguishing characteristics of the type is suggested as a substitute for this formal procedure.

Trincheras Purple-on-red, the dominant painted pottery type at the La Playa site, was described in terms of this suggestion. Other types occurring at the La Playa site (Trincheras Polychrome, plain wares, intrusive sherds), were for various reasons given above described in more summary form. A study of the painted Trincheras pottery types, as they occur in dated sites in southern Arizona, indicates a tentative time range of 300 years (A.D. 800 to 1100) for the La Playa site.

Pottery has proved over the years to be the single most useful tool of the archaeologist in making comparisons and relating archaeological complexes. The Trincheras pottery types are no exception, although some unusual problems do occur in this case. One of these is the infrequent occurrence of intrusives from the sites of southern Arizona, and other areas surrounding the Trincheras center, into the center. Data collected from a number of sites in southern Arizona indicates that Trincheras pottery was moving north, but
for some unknown reason few of the more northerly types found their way south. Brand (1935: 300) has commented on this lack of interchange, and has suggested that it may indicate a long continued state of antagonism.

This, of course, is entirely possible, but considering the probable amount of shell trade which occurred between the two areas (see section on "Artifacts of Shell" below), other explanations seem called for. One of these might be that the goods which the Trincheras people were receiving were not of the types which needed pottery receptacles for retention. Probably they were of a perishable nature, since there is little which can be identified in the La Playa assemblage that indicates trade in non-perishable items.

Other artifacts of clay, including figurines, a solid clay bowl, impressions in clay, spindle whorls, sherd discs, and miscellaneous worked sherds, were described in detail in this section.

ARTIFACTS OF STONE

Of the artifacts manufactured from substances other than clay, a majority are of various types of stone. For purposes of description, artifacts of stone are divided into three large classes. The first of these classes, chipped stone artifacts, includes 561 examples. Class two is made
up of 319 ground stone artifacts, and class three of 19 rough stone artifacts. The three yield a total of 899 artifacts of stone. An explanation of the basis for these classes will be given under the heading for each section.

Accompanying charts (Tables 1, 2) summarize the data on types of rock used in the manufacture of stone artifacts. Probably the most significant point brought out by these charts is the large number of stone artifacts manufactured from local materials, especially siltstone. It should be noted that this siltstone is somewhat metamorphosed, imparting a conchoidal fracture, and thereby making the stone quite usable for chipped as well as ground stone artifacts. The presence of local outcrops in the Cerros Boquillas at the north side of the site, in part explains the large quantity of stone artifacts, especially projectile points. Apparently, however, siltstone and other local materials were not deemed usable for all types of artifacts, the manos and metates, for instance, all being manufactured from imported rocks.

Chipped Stone Artifacts

As noted above, chipped stone artifacts form a majority of the artifacts of stone from the site. Both percussion and pressure techniques were utilized in the manufac-
ture of this class of artifacts, with emphasis on the latter technique. For the most part, the two methods of chipping stone were used to produce differing types of artifacts, percussion flaking for larger and cruder types of implements, and pressure for the finer examples. This varied, however, depending in large part on the type of stone.

**Projectile Points**

A majority of the stone artifacts from the La Playa site can be classified as projectile points. The total sample consists of 447 examples, 396 of which are complete enough to describe under the heading given below. The other 51 specimens consist of fragments of which not enough remains to allow description under formal types. Twenty-eight of the 396 classifiable points are from the Ronstadt collection.

Two basic projectile point shapes are present in the artifacts from the La Playa site. The first of these, the leaf shape, is essentially a triangular form with convex edges. By far a majority of the points are modifications of this basic form, six of the seven types following this plan. The second shape is the triangle, differing from the leaf shape in the presence of straight edges. A single, quite distinct, type is based on a modification of this form.
Projectile points which can be classified by reference to these two basic forms, can also, in general terms, be distinguished by the quality of workmanship. Those points which are modifications of the leaf pattern are more crudely made, with large primary flake scars predominating on the faces, and a minimum of secondary chipping around the edges and notches. Triangular points exhibit a larger quantity of secondary chipping scars, and have the general appearance of being better made.

The quality of workmanship can, in turn, be related to the type of rock used for the manufacture of these two groups. Almost all of the leaf shaped points are made from local siltstones, a softer material than the chert used predominately for triangular points. It appears, therefore, that the cruder workmanship of the leaf shaped points is correlated with the type of rock used for their manufacture, and the finer workmanship of the triangular forms with the harder and denser materials utilized for this form.

Unnotched, Convex Base

**Illustrations:** Figure 17 a-c

**Number:** 120; 64 complete, 56 fragmentary.

**Description:** The points in this category are leaf shaped in outline with rounded bases. They taper to a sharp tip. Edges are slightly convex in most cases. A single specimen in this category is serrated.
Chipped stone projectile points. a-c, unnotched convex base; d-f, unnotched straight base; g-i, unnotched concave base; j-l, shallow corner notched; m, side and basal notched; n, o, deep corner notched. Length of l, 46 mm.
Dimensions: Length, 33-85 mm., average - 59.3 mm., most fall between 50 and 65 mm.; Width, 11-37 mm., average - 20 mm., most fall between 18 and 24 mm.; Thickness, 5-18 mm., average - 9.1 mm., most fall between 5 and 12 mm.

Unnotched, Straight Base

Illustrations: Figure 17 d-f

Number: 43; 28 complete, 15 fragmentary

Description: The points which can be classified under this heading are essentially the same as those described above, differing mainly in the fact that the bases are straight or flat rather than convex. With two exceptions, which have straight edges, all of the examples in this category have convex edges. Two of the points bear serrations along the edges.

Dimensions: Length, 36-99 mm., average - 54.8 mm., most fall between 36 and 58 mm.; Width, 14-33 mm., average 21.7 mm., most fall between 17 and 22 mm.; Thickness, 4-17 mm., average - 8.2 mm., most fall between 5 and 11 mm.

Unnotched, Concave Base

Illustrations: Figure 17 g-i

Number: 45; 29 complete, 16 fragmentary

Description: This category again corresponds very closely to the first one in this section on projectile points, dif-
ferring mainly in the presence of concave bases, as opposed to convex bases. Edges are for the most part slightly convex. Serrations along the edges are present in only one case.

Dimensions: Length, 30-76 mm., average - 54.3 mm., most fall between 30 and 66 mm.; Width, 15-29 mm., average - 24 mm., most fall between 16 and 24 mm.; Thickness, 4-16 mm., average - 8 mm., most fall between 5 and 9 mm.

Shallow Corner Notched

Illustrations: Figure 17 1-1

Number: 104; 66 complete, 38 fragmentary

Description: Again in this case, the points follow the basic pattern described for unnotched convex based points. These differ, however, in the presence of shallow notches chipped in at the corners of the specimens, therefore forming points with expanding stems. In a majority of examples the base is convex, but a fairly high percentage have straight bases, and a few have concave bases. Edges are for the most part slightly convex. One point is serrated, and another bears beveled edges.

Dimensions: Length, 20-85 mm., average - 47.2 mm., most fall between 33 and 56 mm.; Width, 11-32 mm., average - 19.5 mm., most fall between 14 and 24 mm.; Thickness, 4-11 mm., average - 6.5 mm., most fall between 4 and 9 mm.
Comparisons: Projectile points in this category and the three unnotched types described above all closely resemble those typical of the San Pedro stage of the Cochise Culture (Sayles and Antevs 1941, Fig. 11), so it is apparent that the types had early beginnings in the Southwest. Their occurrence at La Playa and in various other later sites (see accompanying comparative Table 3) indicates a long temporal persistence of the points.

Side Notched

Number: 16; 10 complete, 6 fragmentary

Description: The sixteen points grouped under this heading are based on the leaf shape. They are distinguished from the unnotched points on the basis of shallow notches added at the sides just below the base, forming points with stems wider than the base, and with rounded tangs. Convex edges and bases predominate. Three bear serrations from the notch nearly to the tip. A single point is blunted or dulled at the tip and along the edges apparently by hammering, probably for some specialized function.

Dimensions: Length, 26-85 mm., average - 46.9 mm., (not enough points are present in this type to allow an expression of the mode of length); Width, 15-26 mm., average - 19.0 mm., most fall between 15 and 21 mm.; Thickness, 4-9 mm., average - 0.2 mm., most fall between 5 and 7 mm.
Remarks: The points in this grouping do not form a distinct type, but grade imperceptibly into the shallow corner notched variety.

Side and Basal Notched

Illustrations: Figure 17 m

Number: 5; 4 complete, 1 fragmentary

Description: Five points fashioned on the leaf pattern, but distinguished by the presence of notches both in the sides and base are grouped together under this heading. All of the examples have convex edges.

Dimensions: Length, 26-54 mm.; Width, 12-20 mm.; Thickness, 3-8 mm.

Remarks: A small but distinct type of projectile point. Similar to the side notched variety, and in turn to the unnotched categories, but differing in the addition of a third notch at the base.

Deep Corner Notched

Illustrations: Figure 17 n, o

Number: 45; 19 complete, 26 fragmentary

Description: In this case, the basic form is a triangle, modified by the addition of deep notches at the corners. This modification produces a point with a sharp oblique tang. A majority of the points in this category have convex bases. Edges are usually straight, but convex and concave
edges do occur. Nine of the points are serrated. Chipping on the artifacts in this category is more finely done than on those described above, partly because finer and denser materials were used.

**Dimensions:** Length, 11-59 mm., average - 36.5 mm., most fall between 20 and 38 mm.; Width, 13-32 mm., average - 21.2 mm., most fall between 16 and 24 mm.; Thickness, 2-9 mm., average - 4.5 mm., most fall between 3 and 6 mm.

**Remarks:** The projectile points in this category form quite a distinct type. Intergradations with other notched varieties are not seen.

**Comparisons:** As the points in this group were quite distinct from those described above, it was hoped that a perusal of the literature would indicate some cultural or historical significance to their distribution. This hope was not fulfilled, however, as they were found to occur quite widely. Other occurrences are Ventana Cave (Haury 1950, Table 21), the Gleeson site (Fulton and Tuthill 1940, Pl. 23), and various Mogollon sites (Wheat 1955, Fig. 8, Table 12).

**Small Projectile Points**

**Number:** 18; 13 complete, 5 fragmentary

**Description:** Although the points to be described under this heading can be classified under the same shape standards
previously noted, they were separated because of the obvious
difference in size. Length and widths of these points do
not, or only slightly, overlap the dimension ranges given
above, and most of them fall well below the dimensions al­
ready given. Unnotched points with convex bases, unnotched
points with concave bases, points with shallow corner
notches, and points with side and basal notches all fall
within this small size range. One-half are of the shallow
corner notched type, and the single serrated point falls
within this category. Most of them have convex edges.

**Dimensions:** Length, 15-3½ mm.; Width, 9-23 mm.; Thick­ness, 2-5 mm.

**Comparisons:** Small projectile points, in general terms, are
usually considered to be indicators of late time periods.
Their occurrence at the La Playa site along with much larger
points, on an apparently late time horizon, indicates that
size differentials of projectile points should be used with
reservations as indicators of temporal differences. Their
occurrence in sites adjoining the Trincheras area includes
Ventana Cave (Haury 1950, Pl. 22), Valshni Village (Withers
1941, Pl. 19), Jackrabbit Ruin (Scantling 1940, Pl. 26),
Gleeson site (Fulton and Tuthill 1940, Pl. 23), Tres Alamos
(Tuthill 1947, Pl. 32), Cave Valley, Chihuahua (Lister 1958,
Pl. 23), and various Mogollon sites (Wheat 1955, Fig. 9).
Their presence in northwestern Papaguería has been noted by
Ezell (1954, Pls. 5-7).

Unclassifiable Fragments

Number: 51

Description: A large group of projectile points which lack the basal region and which consequently cannot be classified under the various headings above. These fragments range from only tips to nearly complete points lacking only the bases. A single example bears serrations along the edges. Chipping, for the most part, is quite similar to the unnotched types of points, varying mainly where denser types of materials were used allowing finer workmanship.

Knives

Eighteen artifacts, many of which resemble projectile points in shape, are described separately because of an obvious size difference. All of these tools, here identified as knives or blades, are considerably larger than the projectile points. In addition there are three categories not represented in the assemblage of projectile points from the La Playa site: knives narrowed at the base, crescentic knives, and flake knives.

Unnotched, Convex Base

Illustrations: Figure 19 a, b
FIGURE 18

Chipped stone knives and scrapers. a, knife thinned at base; b, crescentic knife; c, d, double-edged side scrapers; e, end scraper; f, g, discoidal scrapers; h, single-edged side scraper. Length of h, 58 mm.
FIGURE 19

Chipped stone knives. a, b, unnotched convex base. Length of a, 74 mm.
Number: 9; 8 complete, 1 fragmentary

Description: All are quite similar to projectile points grouped under the same heading, differing mainly in the larger size, and slightly cruder workmanship. All have convex edges.

Dimensions: Length, 54-74 mm.; Width, 23-51 mm.; Thickness, 4-21 mm.

Unnotched, Concave Base

Number: 1; complete

Description: Similar to projectile points of the same type. That is, the blade is based on the leaf shape, with modification in the form of a concavity at the base. It differs mainly in larger size, and in slightly cruder workmanship.

Dimensions: Length, 63 mm.; Width, 37 mm.; Thickness, 17 mm.

Shallow Corner Notched Knife

Number: 1; complete

Description: The single specimen in this category is based on the leaf shape, and is modified by the addition of two shallow notches, one at each corner of the wider end. The base and edges are convex. The blade is crudely made, one face retaining a portion of the original weathered rock surface from which it was fashioned, and the other bearing large primary flaking scars. The edges are rather sinuous,
as little attempt was made to finish the artifact by secondary chipping.

Dimensions: Length, 118 mm.; Width, 3\frac{1}{4} mm.; Thickness, 11 mm.

Knives Narrowed at Base

Illustrations: Figure 18 a

Number: 3; 1 complete, 2 fragmentary

Description: Again in this instance, the blades are based on the leaf pattern. The modification in this case consists of a slight narrowing in the basal region which does not amount to an actual notching, only a very slight stem having been formed by the removal of a few large flakes from the edges. Two of the knives in this category have convex edges and bases, while the third has convex edges and a straight base. Flaking is again crudely done, with little fine finish work. One specimen retains a portion of the original rock surface on one face, while all three have large primary flake scars over the faces with only a slight bit of secondary chipping along the edges in the basal region.

Dimensions: Length, 71-100 mm.; Width, 26-28 mm.; Thickness, 12-15 mm.

Crescentic Knives

Illustrations: Figure 18 b

Number: 2; complete
Description: The two bifacially chipped artifacts in this category have one fairly straight or flat edge and one curved edge giving them a crescentic outline. Flaking scars are large, and little finish work by secondary chipping has been done. One of the artifacts is slightly smoothed and rounded, probably as a result of water rolling.

Dimensions: Length, 54-60 mm.; Width, 23-32 mm.; Thickness, 9 mm.

Remarks: The differing shapes of these two tools, from the other knives, perhaps suggests some specialized function, but just what this might be is unknown. All of the edges have been sharpened, so it appears that all were used for cutting, rather than gripping the straight edge in the hand and cutting with the curved one, which might seem logical.

Flake Knife

Number: 1; complete

Description: An irregular flake of stone bearing large primary flake scars over both faces. The reason for classifying this as a tool is the presence of a concave cutting edge near one end, chipped in by a secondary flaking process. This finely chipped concavity is matched by one on the opposite edge formed by one large flake scar, the two coming together at a sharp point.

Dimensions: Length, 46 mm.; Width, 45 mm.; Thickness, 13 mm.
Remarks: The concave edge formed by secondary chipping could have served various cutting purposes, while the sharp point formed by the meeting of the two concave edges could possibly have functioned as a graver.

Unclassifiable Fragments

Number: 3

Description: Three blade sections lacking bases and in one case the tip. As the form of the basal region is being used as the principal criterion for classification, these fragments could not be placed in any formal category.

Drills

Number: 4; all fragmentary

Description: Four small chipped stone artifacts, all of which lack bases, can be classified as drills. Chipping is well done, the artifacts tapering slightly from the end where the base would have been to a pointed or slightly rounded tip. Two have plano-convex cross-sections, one face formed by a single flake scar and the other rounded by secondary chipping. A third is bi-convex in cross-section, as a result of having been worked all the way around by secondary chipping. The fourth specimen has a square cross-section, and is also finely finished by secondary flaking.

Dimensions: Length, 20-29 mm.; Width, 4-9 mm.; Thickness,
Remarks: As all of the drills lack bases, no attempt was made to classify them according to formal types. This was also negated by the small size of the sample. It is interesting to note, however, the variance in cross-sections, perhaps indicating differing uses, possibly with different types of materials. Artifacts classified as drills were apparently in use fairly commonly at the La Playa site, when the number of drilled shell, stone, and ceramic ornaments and utilitarian artifacts are considered. A large quantity of drills, however, is not present in the collection, probably more as a result of the accidents of collection than any other reason.

Comparisons: Chipped stone drills were also found at Ventana Cave (Haury 1950, Fig. 67, Table 22), Valshni Village (Withers 1941, Pl. 19), Gleeson (Fulton and Tuthill 1940, Pl. 23), Tres Alamos (Tuthill 1947: 70), and several Mogollon sites (Wheat 1955, Fig. 9, Table 12). They are noted in the Pioneer period at Snaketown (Gladwin and others 1937: 112). Classic period Hohokam occurrences are reported for Jackrabbit Ruin (Scantling 1940, Pl. 26), and Los Muertos (Haury 1945: 126).
Scrapers

The major distinction used to separate artifacts of this class from projectile points or knives is the presence of unifacial chipping as opposed to bifacial chipping, which is the pattern for the former groups. All of the specimens classified as scrapers have one more or less flat surface and an opposite convex surface bearing a majority of the flaking.

Single-edged Scrapers

Illustrations: Figure 18 h
Number: 5; all complete

Description: The five tools placed under this heading have in common the presence of a single edge which was sharpened, presumably for use as a scraper. Outlines vary, but in general the scrapers are slightly elongated, parallel to the working edge. In four cases the flat surface is formed by the removal of one or two large flakes, and in the fifth case this surface is the original water worn surface of the pebble from which the scraper is fashioned. Also, in relation to this latter specimen, the edge opposite the scraping surface is somewhat blunted by pecking, apparently to facilitate handling.

Dimensions: Length, 49-60 mm.; Width, 24-42 mm.; Thickness, 8-15 mm.
Double-edged Side Scrapers

Illustrations: Figure 18 c, d

Number: 15; 12 complete, 3 fragmentary

Description: As a group the scrapers in this category are quite similar to the single-edged variety. They differ mainly in the presence of two, rather than one, edges being sharpened. In addition, occasionally a very slight bit of sharpening has been done on an end, presumably to allow the use of this surface for scraping also. All are plano-convex in cross-section. Outlines are again irregular, but with some elongation parallel to the working edges. The plane surface is formed by just a few large flake scars, or in one case by the original pebble surface. This category also contains a single example with one dulled edge to facilitate handling.

Dimensions: Length, 38-104 mm.; Width, 19-60 mm.; Thickness, 8-27 mm.

End Scrapers

Illustrations: Figure 18 e

Number: 5; 3 complete, 2 fragmentary

Description: Of the five specimens grouped together here, all have generally oval outlines and plano-convex cross-sections. Flaking on the convex surfaces is marked by large primary scars, except at one end, which forms the main work-
ing surface and which consequently has been sharpened by sec-

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ondary chipping. Secondarily, some chipping has been done
around the edges, primarily to shape the tools. One example,
fashioned from a stream pebble, retains a section of the
weathered surface on the convex side. The flat or plane
surface is formed by one or a few large flake scars. A sin-
gle example bears a notch at the corner, probably to facili-
tate hafting. In three cases the greatest width is near the
working end, while the others have their greatest width near
the center.

Dimensions: Length, 42-59 mm.; Width, 31-37 mm.; Thick-
ness, 7-15 mm.

Discoidal Scrapers

Illustrations: Figure 18 f, g

Number: 20; 14 complete, 6 fragmentary

Description: The 20 artifacts in this category closely re-
semble specimens labeled as discoidal scrapers in the Ven-
tana Cave report (Haury 1950: 232-4), and are here so classi-
fied. All are generally circular in outline, and plano-con-

vex in cross-section. In 16 cases the flat or plane surface
is formed by a single or a very few large flake scars, while
in three more examples this surface is formed by the smooth
face of the water washed pebble from which they are made,
and in the last example by the weathered surface of the out-
crop from which the stone was obtained. Convex surfaces also occasionally retain sections of the original pebbles, but slightly more modification has taken place in the form of large flake scars probably produced by a percussion technique. Finer chipping by pressure is present at the edges of the tools to sharpen and shape them. In one case a small rounded point is chipped at the end.

**Dimensions:** Diameter, $43-69$ mm.; Thickness, $16-43$ mm.

**Choppers**

Thirty-six artifacts roughly shaped into a distinctive form are classified as choppers. All have in common one fairly smooth edge which served as a hand-hold and an opposite edge sharpened by the removal of a number of large flakes, probably by the percussion method. Purely in the interest of handling the tools descriptively, categories were established on the type of hand-hold present. It is doubted that these categories have any other significance, as for instance spatial or temporal meaning, but in handling a large group of specimens such as this it seems easier to sub-divide them, thus allowing more detail in each separate description.

**Hand-hold Unmodified**

**Illustrations:** Figure 20 b
Number: 18; all complete

Description: All of the examples in this grouping have a fairly smooth hand-hold formed by the unmodified and weathered surface of the pebble or outcrop from which the stone was obtained. The choppers vary greatly in the amount of attention which was devoted to shaping and modifying them. Some have only a few large flakes removed from them, while others have been percussion chipped nearly all over, leaving only a small weathered section to facilitate gripping the tool in the hand. In 16 cases, the chipping is primarily or entirely from one face forming a chisel-like working edge. Two examples are chipped from both faces forming a V-shaped working edge. Nine of the choppers exhibit battered and rounded working edges, as if they had been used against some hard substance. Four show traces of secondary use as hammers, with the presence of numerous small pits localized on one part of the hand-hold. In 15 cases the greatest length is parallel to the cutting edge, while in the other three cases the greatest length is perpendicular to this edge.

Dimensions: Length, 55-140 mm.; Width, 65-132 mm.; Thickness, 19-59 mm.

Hand-hold Modified By Chipping

Illustrations: Figure 20 c
Chipped and ground stone artifacts. a, digging tool; b, chopper with hand-hold unmodified; c, chopper with hand-hold modified; d-f, reamers; g, elongate chopper. Length of d, 156 mm.
Number: 14; all complete

Description: The choppers in this category are quite similar to those described above, differing mainly in the fact that the hand-hold is formed by the removal of one or a few large flakes. In addition, two examples bear traces of pecking around these large flake scars, which was apparently done to round the edges and make the grip more comfortable. In all cases chipping was from one face, producing chisel-like cutting edges. As was true for the previously described group of choppers, the edge thus formed is quite sinuous, and no apparent attempt was made to smooth it.

Nine of these choppers bear traces of pounding a hard surface on their working edge in the form of rounding and pitting. One example bears traces of a secondary use as a hammerstone. Six have the greatest length parallel to the working edge, while in three cases the length and width are equal, and in the remaining four examples the greatest length is perpendicular to the cutting edge. Eleven retain sections of the weathered outcrop from which the rock was obtained, and a twelfth retains a portion of the water washed pebble from which it was fashioned.

Dimensions: Length, 50-123 mm.; Width, 64-119 mm.; Thickness, 17-43 mm.

Comparisons: For the purpose of comparison, choppers in this category were lumped with those above. Choppers have
a long history in the Southwest, beginning in the Sulphur Spring stage of the Cochise Culture (Sayles and Antevs 1941, Fig. 11) and continuing through the Classic period of the Hohokam sequence (Hayden 1957, Pl. 31). Their occurrence in sites believed to be contemporaneous with La Playa is infrequent, Ventana Cave (Haury 1950, Table 19) being the only site where they were found in comparable quantities.

**Elongate Choppers**

**Illustrations:** Figure 20

**Number:** 4; 2 complete, 2 fragmentary

**Description:** While retaining the basic idea seen in the choppers described above, these four specimens were separated out because of an obvious shape difference. As were a number of the choppers above, these four are modified stream pebbles, but in this case long slender rocks were selected, as opposed to the more rounded examples described previously. Each of the choppers in this group has one or two battered working ends. In one case this is the only modification of the original pebble. The other three, however, have been slightly shaped by the removal of a few large flakes from the edges and then by hammering the rough surfaces formed by the removal of the flakes to a somewhat round and even form. In one case, a handle has been formed by this process. This latter example also bears traces of grinding,
probably from use, on the edges and faces immediately above the chopping end. One other chopper tapers slightly from the end which would have been held in the hand to an expanded chopping surface.

**Dimensions:** Length, 150-224 mm.; Width, 38-45 mm.; Thickness, 23-29 mm.

**Comparisons:** The choppers in this group closely resemble those labeled "long pebble choppers" in the Ventana Cave report (Haury 1950; 253).

**Oval Blanks**

**Number:** 4; 3 complete, 1 fragmentary

**Description:** Four specimens roughly shaped by percussion flaking are classified as blanks. Three have one convex end from which they taper to blunt points, while in the fourth case both ends are convex, giving more of an oval outline. All are bi-convex in cross-section as a result of having been shaped on both faces.

**Dimensions:** Length, 75-109 mm.; Width, 32-55 mm.; Thickness, 15-25 mm.

**Remarks:** These specimens were probably roughly shaped at the quarry to be modified into various types of tools at some later time.

**Discoidal Blanks**

**Number:** 5; complete
Description: Five somewhat more symmetrical blanks are circular or discoidal in shape. These resemble discoidal scrapers in outline, differing mainly in the fact that the blanks are bifacially chipped while the scrapers have only unifacial flaking. Flake scars are large over both faces, and secondary chipping does not occur.

Dimensions: Diameter, 47-65 mm.; Thickness, 23-38 mm.

Ground Stone Artifacts

A second broad classification of stone artifacts is based on at least the partial use of a different method of manufacture. In this case, the process was to use a dense, hard type of stone as a hammer and to peck the selected rock into roughly the desired form. Finish work was then done by rubbing the pecked surface over an abrading stone, thereby grinding the artifact into its final shape.

It should be emphasized that this is not an either/or category. Several of the forms to be discussed below were partially shaped by flaking as well as by pecking. Also, it was noted for several of the chipped stone categories that some pecking and grinding had taken place as well as flaking (see "Choppers," for instance). In addition, the artifacts under this broad heading show a range from those with only pecking to a few which are ground all over. What
is important, however, is the fact that, for the most part, one or the other of these techniques was utilized to produce varying forms of artifacts for varying purposes.

Twelve of the ground stone artifacts described below are from the Ronstadt collection.

Metates

The most common metate form at the La Playa site is the basin for use with one-hand unifacial or bifacial manos. Trough metates and slab metates also occur, but only in very minor percentages. Only a representative collection of metates was gathered for descriptive purposes.

Basin-shaped Metates

Illustrations: Figure 21 a
Number: 8; complete
Description: More or less thin slabs of rock were selected for basin-shaped metates. No shaping was done except on the working faces where a depression was begun by pecking. The depression was apparently occasionally roughened by pecking to produce a better cutting surface. Basin-shaped metates are irregular in outline, but usually are slightly elongated. Each has a shallow basin-shaped depression parallel to the long axis on one or both faces. Striations on the grinding depression of a few examples indicate that the grinding mo-
tion was back and forth, rather than rotary.

**Dimensions:** Length, 240-344 mm.; Width, 136-240 mm.; Thickness, 19-90 mm.; Depth of basin, ca. 4-35 mm.

**Comparisons:** One of the notable things about the La Playa stone assemblage is the large quantity of basin-shaped metates present during a time period by which the trough-shaped metate had come into general use over much of the Southwest. Data from Ventana Cave and other sites in southern Arizona (Haury 1950: 317-8) indicates that the change from basin to trough metates is correlated with the introduction of corn into the Southwest, or at least the use of corn as a major source of food. Late occurrences of basin-shaped metates can presumably be explained by the retention or the earlier form for specialized purposes. This fits the data from La Playa, as will be discussed below in the summary and conclusions to the presentation of the stone artifacts. A parallel with the Desert Hohokam is seen in this late retention of the early metate form (Withers 1941: 57). Trough metates were the rule for the River Hohokam by this time, although basins still occurred (Gladwin and others 1937, Pls. 47-50). Mogollon occurrences include San Simon and Pine Lawn Valley (Wheat 1955: 110).

**Trough-shaped Metates**

**Number:** 2; fragmentary
Ground stone artifacts. a, basin-shaped metate; b, bifacial mano with steeply convex grinding surface; c, d, bifacial manos with slightly convex grinding surfaces. Length of c, 108 mm.
Description: In this case, blocks of vesicular basalt were selected and worked into a more formalized shape than was found in basin-shaped metates. This rectangular outline bears a trough parallel to the long axis on one face. Whether the trough was open or closed at the ends is unknown due to the fragmentary nature of the specimens. The sides are outcurved and the bases flat.

Dimensions: Thickness, 17 mm. and 7\(\frac{1}{4}\) mm.

Remarks: Trough-shaped metates are for use with two-hand unifacial or bifacial manos, three of which are present in the collection.

Manos

Manos are among the more common artifacts at the La Playa site. A small representative collection of 33 examples was gathered, which is described here. By far the most common mano is the small rounded one-hand variety for use with basin-shaped metates. Manos were initially subdivided on the basis of unifacial or bifacial use, and then further broken down according to whether they were used in one or two hands, and according to specialized aspects of the grinding surfaces.
Bifacial One-hand Mano
with Slightly Convex Grinding Surface

Illustrations: Figure 21 c, d

Number: 20; complete

Description: These manos were made from circular to oval, flattened stream pebbles which were occasionally slightly modified by pecking. The faces, especially, were somewhat flattened by this process. All of the manos in this group have slightly convex grinding surfaces, and on several a very slight ridge is present at the midline, parallel to the long axis, indicating a slight rocking motion during the grinding process. Six of these manos bear use striations at right angles to the long axis, and one has similar marks parallel to the long axis. Apparently these manos were used in a push-pull motion across the basin of the metate, with the long axis of the mano at right angles to the long axis of the metate. Occasionally they were rocked back and forth slightly.

Dimensions: Length, 95-158 mm.; Width, 80-133 mm.; Thickness, 30-58 mm.

Bifacial One-hand Mano
with Steeply Convex Grinding Surface

Illustrations: Figure 21 b

Number: 5; complete
Description: Water worn pebbles, oval in outline, were selected and slightly shaped by pecking. In the case of these five manos the rocking motion was emphasized by the user, producing a steeply convex surface. The greatest convexity occurs at a ridge which is usually at about a 45 degree angle to the long axis, and near the midline of the mano. Three bear this faceted aspect on one face only, the opposite face being only slightly convex. The other two have facets on both faces, but at right angles to each other, forming four bevels. These were again used in basin-shaped metates, but with a definite rocking motion.

Dimensions: Length, 110-143 mm.; Width, 92-100 mm.; Thickness, 41-59 mm.

Unifacial One-hand Mano
with Slightly Convex Grinding Surface

Number: 4; 3 complete, 1 fragmentary

Description: These four manos are essentially the same as the bifacial manos of the same description, differing mainly in the presence of one as opposed to two grinding surfaces. A similar use in a basin-shaped metate is indicated.

Dimensions: Only the complete examples were measured.
Length, 102-142 mm.; Width, 91-141 mm.; Thickness, 36-68 mm.
Bifacial Two-hand Manos

Number: 3; 1 complete, 2 fragmentary

Description: The three manos in this group are rectangular in outline with rounded edges and ends. In two cases the wear extends from the faces over onto the ends, indicating use in trough metates. The third example differs, in that the wear is present only on the faces. The one remaining end is roughly pecked. A flat slab type of metate is here indicated. The faces of all three of the manos are flat longitudinally and convex parallel to the short axis.

Dimensions: Length, 163 mm. (1 specimen); Width, 76-102 mm.; Thickness, 41 mm.

Unifacial Two-hand Mano

Number: 1; fragmentary

Description: This fragment is similar in all respects to the bifacial two-hand manos which were used in trough metates, differing only in the presence of a single as opposed to two grinding surfaces for the former group.

Dimensions: Length could not be measured, as the specimen is fragmentary. Width, 102 mm.; Thickness, 42 mm.

Stone Vessels

Twenty stone vessel fragments were collected from the La Playa site. Most of these are simple geometric forms
with little elaboration. Differing shapes were used to subdivide the vessels for descriptive purposes.

Circular Stone Vessels

Illustrations: Figure 22 b

Number: 8; fragmentary

Description: Shallow bowls of stone with circular outlines and rounded rims. In three cases the basins are straight sided and flat bottomed, while the other five have more rounded basins. Four have flat bases; bases of the others are rounded. Wear, in the form of polishing and smoothing, is present near the center of the basin.

Dimensions: Diameter, 106-189 mm.; Rim thickness, 8-19 mm.; Base thickness, 12-27 mm.

Oval Stone Vessels

Number: 4; fragmentary

Description: These are quite similar to circular stone vessels, but are oval in outline. Rims are rounded in all cases. Three examples have straight sided basins, with nearly flat bottoms. The fourth basin is somewhat more rounded. Walls are slightly convex. Bases are rounded in three cases and the fourth has a flat base. One is slightly more elaborate, with short, rounded wings projecting diagonally from the corners. All have traces of grinding on the bottom of the basin.
Ground stone artifacts. a, large pestle; b, circular stone vessel; c, rectangular stone vessel; d, e, small pestles; f, palette. Length of f, 115 mm.
Dimensions: Length and width estimations were made in three cases. Length, 123-221 mm.; Width, 72-145 mm.; Rim thickness, 9-14 mm.; Base thickness, 15-30 mm.

Rectangular Stone Vessels

Illustrations: Figure 22 a

Number: 5; fragmentary

Description: The five specimens in this group are subdivided, for descriptive purposes, into five categories based on slight shape differences and on various elaborations.

The first specimen to be described is basically rectangular in outline, but has rounded corners. The basin is rounded, as are the rim and base. Walls are convex. Traces of grinding are present in the center of the basin.

Example two is rectangular with rounded ends. Walls are convex. The basin has straight sides and a flat bottom. The rim is rounded and the base is flat. Walls at the ends are slightly thicker than along the edges.

The third rectangular stone vessel has nearly square corners, with short rounded wings projecting from the corners, parallel to the long edges. The basin has straight sides and a flat bottom. Walls are slightly convex, and the rim is rounded. The base is flat.

In the fourth case the rectangular vessel again has rounded corners, but in this case with short rounded wings
projecting diagonally from these corners. Walls are slightly outcurved. The basin is straight sided and flat bottomed. The base is flat and the rim rounded. Traces of grinding are present in the basin.

The remaining example has square corners and short rounded wings which project diagonally from these corners. A straight sided and flat bottomed basin, bearing traces of grinding near the center is present. The rim is rounded and the base is flat.

**Dimensions:** Length, 89-136 mm.; Width, 51-105 mm.; Rim thickness, 10-24 mm.; Base thickness, 16-21 mm.

**Unclassifiable Fragments**

**Number:** 3

**Description:** Three fragments of stone vessels too small to classify in the above categories were present. All have rounded rims and flat bases. Walls are slightly outcurved. Two have straight sided basins, while the third is rounded. In one case, the broken edges and ends are rounded, indicating a possible secondary use as a small pestle.

**Remarks**

Stone vessels were probably used in conjunction with small pestles for grinding paints and other small items. Nearly all of the examples described above bear traces of grinding in the central basins, and it will be noted that
most of the small pestles described below also have ground surfaces.

Comparisons

Stone vessels are known from many sites in the Southwest, but their most frequent occurrences and most elaborate forms are in Hohokam contexts. La Playa vessels differ from Hohokam forms, however, in that the La Playa examples are usually slightly larger and shallower. The variety of elaborations carved onto Hohokam vessels are not present in the La Playa specimens (Gladwin and others 1937, Pls. 52-73). In their generally simpler form, the La Playa vessels are more akin to the Mogollon types (Wheat 1955: 120).

Palettes

Illustrations: Figure 22 f

Number: 3; 1 complete, 2 fragmentary

Description: The three palettes from the La Playa site are, or probably were when complete, rectangular in outline. All have slightly convex edges and ends. One tapers slightly from one end to the other. In two cases, the mixing surface is simply a slight depression near the center. The surface is present on only a single face in one example and both faces in the other. The third is slightly more elaborate
with raised borders along the sides, but open ends. The specimen somewhat resembles a trough-shaped metate in miniature. Mixing surfaces in all cases bear faint striations, and traces of grinding indicating they were ground on in a back and forth motion parallel to the long axis. The trough-shaped specimen has a number of fairly deep scratches on the base indicating a secondary use, probably after breakage, as a cutting table.

**Dimensions:** Length, 92-112 mm.; Width, 55-122 mm.; Thickness, 3-31 mm.

**Comparisons:** La Playa palettes are most similar to the proto-palettes of Snaketown, which begin in the Vahki phase and continue through the Sacaton phase (Gladwin and others 1937: 122). In the Snaketown report, the suggestion was made that palettes may have had their origin in the metate, as a few examples were found with forms paralleling metates (Gladwin and others 1937: 122-3, Pl. 98). A similar palette was recovered from La Playa, and although it is considerably later in time, many of the stone artifacts at La Playa seem to represent late retentions of early forms. Perhaps this palette can then be suggested as a bit of added support for the derivation of palettes from metates.

**Abrading Slabs**

**Number:** 3; complete
Description: Slightly elongated flat slabs of stone with irregular outlines. Traces of grinding are present on the faces in the form of striations and smoothing. Striations are parallel to the long axis, indicating that the grinding movement was back and forth in this plane.

Dimensions: Length, 153-215 mm.; Width, 113-137 mm.; Thickness, 11-18 mm.

Remarks: Abrading slabs were probably utilized for grinding small objects or small quantities of materials such as paint.

Small Pestles

Illustrations: Figure 22 d, e

Number: 9; 5 complete, 4 fragmentary

Description: This slightly miscellaneous category consists of nine small grinding tools labeled pestles because of an obvious shape analogy to the pestles used in apothecary shops. They have in common the presence of one expanded end, which in all cases is the most heavily worked part of the specimen. Six of the artifacts in this group have circular cross-sections, while the others are rectangular in cross-section. In four cases with circular cross-sections the expanded end is marked by a sharp break from the handle. The others merely taper from the handle to this expansion. In one case the handle is worn quite smooth, perhaps as a result of long use.
Large Pestles

Illustrations: Figure 22 a

Number: 2; complete

Description: These are long cylinders formed from water smoothed cobbles by a process of percussion flaking and pecking. One example tapers slightly from one end to the other. The widest portion of the second example is near the center, from which point it tapers slightly to both ends. One of the pestles is pecked and smoothed to a more symmetrical form than the other, which retains numerous flaking scars and pits from the pecking process. Both ends of each example are polished from use. Both pestles have oval cross-sections.

Dimensions: Length, 335 mm. and 401 mm.; Diameter, 70 mm. and 73 mm.

Remarks: Both of these pestles are quite similar to ones recovered from Ventana Cave and labeled "round ended, shaped" (Haury 1950: 321). The suggestion was made in the
discussion of these pestles from Ventana that they were used in wooden mortars since the ends are not flattened and battered as would be the case if the pestles were used in a stone mortar (Haury 1950: 320-4). The ends of the specimens from La Playa were rounded and polished, as the Ventana examples, and a similar use can be postulated in this case. The use of wooden mortars is also supported by the complete lack of stone ones at La Playa. Even the common bedrock mortar was not present.

Abrading Stones

Number: 3
Description: Three objects of stone which bear traces of grinding, and which may have served as abraders, are present.

The first example in this grouping is a water washed pebble with a ground concave surface on one face. Striations are present at right angles to the long axis of the ground surface. This surface is the only modification of the original pebble.

A second specimen is a small water-washed pebble, oval in outline, with slight traces of grinding on the faces. This stone could have been used for many purposes where a fine-grained abrading stone was needed.

The third is an irregularly shaped, flat piece of
stone with traces of grinding on the faces. The edges are rounded by grinding.

Reamers

Illustrations: Figure 20 d-f

Number: 37; 13 complete, 24 fragmentary

Description: Generally rectanguloid in outline and elliptical in cross-section. Of the complete specimens, eight have their greatest width at one end and taper from this point to a rounded tip at the other. Three others have roughly parallel sides and rounded ends, while the remaining two have handles which taper to thinner working surfaces and finally to rounded tips. Striations on a few examples indicate they were used by both running the tool up and down and sideways. Several bear shallow grooves across their widths, usually at a slight angle, probably as a result of use. Two bear narrow, rather deep grooves at right angles to the long dimension. Probably these were cut to shorten the objects, as they differ quite markedly from the marks identified above as being a result of use.

Dimensions: Length, 52-156 mm., average - 91.5 mm.; Width, 12-45 mm., average - 25.7 mm.; Thickness, 6-31 mm., average - 13.5 mm.

Remarks: Reamers were probably used primarily in the manu-
facture of shell ornaments, although there are numerous other purposes for which they could have functioned as well. Especially, shell bracelets could have been manufactured by use of the reamers. The thin edges would have worked well to cut out the cores, while the broader ends would have served as hammers to break the core from its encircling groove. The various use marks on the reamers probably indicate they were utilized to bring the bracelets to their finished form.

Comparisons: Reamers occur in many of the sites which surround the Trincheras Culture area, but they seem to be most frequent in Hohokam sites, a culture long noted for the working of shell. At Ventana Cave they occurred only in the upper two levels, along with worked shell (Haury 1950: 327). They were present at Snaketown (Gladwin and others 1937, Pl. 38) primarily in Santa Cruz and Sacaton contexts. Their presence in the Classic Hohokam period is noted for Los Muertos (Haury 1945: 129). As an indication of the quantity of shell work done at La Playa, Haury informs me that they occur more frequently at this site than at others in the Southwest.

Grooved Stones

Number: 11; 2 complete, 9 fragmentary
Description: Irregular outlines, but generally elongated, and wider than thick. All have in common the presence of one or more U-shaped grooves on the faces. These grooves vary from narrow ones to others which cover an entire face of the artifact. In three cases, grooves are present on both faces. The edges, ends, and faces are ground fairly smooth in all instances.

Dimensions: Length, 40 and 277 mm.; Width, 18-91 mm.; Thickness, 7-28 mm.

Remarks: Probably these artifacts accompanied the reamers for use in shell work. The outside edges of shell bracelets, for instance, would produce similar grooves if rubbed along the faces of the stone.

Stone Axes

Two ground stone artifacts, differing in form, are classified as axes. This type of artifact was apparently more common at the La Playa site but forms a valued possession of the collector, and consequently has been gathered in number from the site (Di Peso 1956: 359). To account for the large number of axes, especially those three-quartered grooved forms with raised ridges around the groove, Di Peso (1956: 359) suggests a local supply of stone, basing this suggestion on Sauer and Brand's (1931: 112) notice of numer-
ous fragmentary celts and broken pieces of "dense green rock" at the site. Di Peso (1956: 359) goes on to point out the possibility that the La Playa site served as a manufacturing center for three-quarter grooved axes, from which point they were traded into the Hohokam country to the north, becoming one of the characteristics of this archaeological manifestation.

This possibility cannot be denied from the data collected on this axe form in this study, but neither can it be proven. First of all only two axes were collected, and as will be noted below, they differ in form, one being three-quarter grooved and the other full grooved. Neither have the raised ridges, which Di Peso considers typical of the Hohokam axe form. Both are, however, manufactured from local materials, one of green siltstone and the other of a local graywacke. Three-quarter grooved stone mauls with raised ridges are present in the collection, but in this case only one is of local material.

Furthermore, an examination of three-quarter grooved axes in the collections of the Arizona State Museum from Hohokam sites in southern Arizona disclosed no axes of the same materials as outcrop locally at the La Playa site. Consequently, it seems that although stone axes were being manufactured by the inhabitants of the La Playa site, these were for the most part for local use rather than for exten-
sive trade into southern Arizona as Di Peso has suggested.

Three-quarter Grooved Axe

Illustrations: Figure 23 c

Number: 1; complete

Description: This short and thick axe bears a groove running three-quarters of the way around the specimen. It tapers from the poll to the bit. The poll is slightly battered from use as a hammer. The bit is rounded and thick.

Dimensions: Length, 118 mm.; Width, 78 mm.; Thickness, 54 mm.; Width of groove, 22 mm.

Full Grooved Axe

Illustrations: Figure 23 d

Number: 1; complete

Description: This example has a groove completely encircling the axe near the poll. The axe tapers from poll to bit. Both the poll and bit are somewhat battered from use, and both are slightly ground.

Dimensions: Length, 144 mm.; Width, 59 mm.; Thickness, 49 mm.; Width of groove, 25 mm.

Stone Mauls

Artifacts similar to the stone axes at the La Playa site are stone mauls, which differ mainly in the presence of
Ground stone artifacts. a, cutting tool; b, full grooved maul; c, three-quarter grooved axe; d, full grooved axe.
Length of d, 14.4 mm.
sides which to not taper from poll to bit, and in the presence of rounded ends for pounding.

Three-quarter Grooved Mauls

**Number:** 2; fragmentary

**Description:** One of the three-quarter grooved stone mauls has, in addition to the main groove, a very shallow vertical groove along one edge, which probably facilitated placing a wedge under the handle to tighten the axe in its hafting. Also, each specimen has raised ridges on both sides of the haft groove. Polls and working ends are rounded and battered from hard use. Possibly these mauls were modified from no longer useful stone axes, but in neither case does enough remain to tell for sure.

**Dimensions:** Length, 80-112 mm.; Width, both 69 mm.; Thickness, 64-65 mm.; Width of groove, 17-26 mm.

Full Grooved Maul

**Illustrations:** Figure 23 b

**Number:** 1; complete

**Description:** This artifact is fashioned from a large, oval, flattened, water-washed stone. It differs from other mauls and the stone axes in that one end is thinned and encircled by a groove, rather than the groove being near the center. Edges and ends are battered from use.

**Dimensions:** Length, 169 mm.; Width, 118 mm.; Thickness,
Stone Axe or Maul Fragments

Number: 3

Description: Three small fragments of axes or mauls, not enough of which remains of any one to allow classification under the above headings. Two of these fragments are three-quarter grooved. The third is too incomplete to determine if it is three-quarter or full grooved. Two bear raised ridges around the grooves and one has a wedge groove. In two cases the polls are battered from use as hammers.

Cutting Tools

Illustrations: Figure 23 a

Number: 6; complete

Description: These are flat plates of stone obtained from local outcrops and roughly shaped by percussion flaking and occasionally pecking into rectangular outlines. Each bears one flattened edge which apparently served as a hand-hold, and an opposite cutting edge which is slightly concave, probably as a result of use. Slight striations are present along this concave edge, running parallel to the long axis. The cutting edge is slightly rounded and does not form a sharp V. Ends are rounded.

Dimensions: Length, 174-263 mm.; Width, 47-74 mm.; Thick-
Remarks: The shape of these implements and the striations along the cutting edge suggests a possible function as small scythes for cutting some form of plant food.

Comparisons: No close parallels to these objects of stone could be found in the literature. Sickles of bone and horn are described by Heizer (1951: 250) for the Southwest, and these may in some way be related.

Digging Tools

Illustrations: Figure 20 a

Number: 12; complete

Description: These are elongated rocks with one widened end which tapers to a blunt point. Two exceptions are roughly rectangular in outline. The widened ends have been pecked and worn fairly smooth, forming a comfortable hand-hold. Pointed ends are battered, and large flakes have often been removed, probably as a result of use. The pointed end in one case bears a number of striations parallel to the long axis. The two examples with rectangular outlines are similar in having one rounded or smoothed end, and an opposite battered end. Some shaping of the original rock has taken place, especially along the edges, where large flakes have been removed and pecking has occurred.
Dimensions: Length, 361-506 mm.; Width, 74-180 mm.;
Thickness, 40-70 mm.

Remarks: The suggestion of a use as digging tools is only probable, and in truth the objects may have had several functions, such as choppers and hammers. A digging function is indicated by the size of the objects, the end battering which is probably from use, and the smoothing of the opposite end for a hand-hold. In addition, one example, as mentioned above, bears a number of striations along the battered point, which could have been produced by digging in hard dirt, and dirt containing many stones as is the case at the La Playa site. Possibly the implements were held with both hands on the rounded end, and with one face towards the user. Short chopping strokes would have been most effective, considering the weight of the object and its general clumsiness.

Comparisons: The only other reference to digging tools which could be found in the literature is in Wheat (1955: 120). He lists two varieties, the first of which is most similar to the La Playa specimens. These longer tools have been reported from the Black River Branch during Mogollon 1 and from the Mimbres Branch in Mogollon 4. A shorter, wedge-shaped type is reported for the Black River Branch in Mogollon 1 and from San Simon in Mogollon 3 and 4.
Multi-purpose Tools

Number: 2; complete

Description: Rectanguloid in outline, with convex edges and ends, rounded corners, and an elliptical cross-section. The first of these objects has one battered end which apparently functioned as a hammer, traces of grinding on both faces perhaps indicating a second use as an abrading stone, irregularly placed pits over both faces probably as a result of use as an anvil stone, and short irregular cuts from use as a cutting table. Decorations are present in the form of two checkerboard designs incised into the stone near one end.

The second example has two shallow grooves down the center of each face, and two shallow notches occur in the edge of the specimen. Both ends bear small pits, as if used for chopping or pounding. At least two functions can be inferred for this artifact. The first is a use as a hammer or chopper, and the second perhaps a function in shell working, as indicated by the grooves, and their similarity to the grooved stones described above.

A number of large flakes have been removed from various places over the surfaces of both tools, probably as a result of the hard use to which they were subjected.

Dimensions: Length, 206-213 mm.; Width, 70-100 mm.; Thickness, 12-19 mm.
Stone Rings

Illustrations: Figure 24 e

Number: 8; 1 complete, 7 fragments

Description: Large stone rings with central perforations. Six of these artifacts are circular in outline, while the other two are more rectangular with rounded corners. Seven are biconically perforated. The eighth, while conforming in shape and size, is unperforated. This specimen is broken, and perhaps this occurred during the process of manufacture, before drilling took place. Sides are for the most part out-curved, although one example bears rather straight sides. In five cases an indication of use is present in the form of slightly ground spots on the faces and edges.

Dimensions: Diameter, 45-67 mm.; Thickness, 27-51 mm. The single rectanguloid artifact which is complete enough to allow measurement is 96 mm. in length and 52 mm. thick. Perforation diameters, 6-24 mm.

Discs

Illustrations: Figure 24 a, b

Number: 70; 66 complete, 4 fragmentary

Description: A large group of thin circular objects of stone. The great majority are simple discs with no other modification than the stone working processes used to fashion
Ground stone artifacts. a, b, stone discs; c, tubular pipe; d, figurine; e, stone ring; f-h, cruciform objects; i, nose ring; j, k, nose plugs; l-o, small pendants; p, tubular bead; q, disc bead. Length of k, 40 mm.
them. The predominate process seems to have been to roughly shape the discs by flaking, and then to grind them into their finished form. Faint striations on a few specimens indicate that the grinding motion was back and forth. Ten of the examples in this group show no traces of grinding, flake scars being present on the faces and around the edges. In 47 cases traces of both chipping and grinding are present and the other four show no flake scars, only the results of the grinding process. Four of these 61 discs have flat faces while the others are convex.

A few examples are modified in various ways. Seven of these bear more or less central perforations. In 6 cases these perforations are biconical, indicating that the drilling took place from both faces. The seventh has a simple conical hole as a result of drilling from one face only. One of these centrally perforated discs has an especially large perforation (15 mm), plus eight incised lines radiating out from the hole, forming crosses on each face.

Two other modified discs include one with a perforation drilled from one face near the edge, and a second with a series of small V-shaped notches around the entire perimeter. These notches average about 1 mm. in depth.

**Dimensions:** Diameter, 23-71 mm., average - 46.6 mm., most fall between 42 and 55 mm.; Thickness, 3-17 mm., average - 7.6 mm., most fall between 3 and 9 mm.; Perforation diame-
Remarks: Outside of the fact that the perforated discs could possibly have been utilized as spindle whorls, the function of these objects remains a mystery. The disc perforated near the edge is perhaps a pendant.

Stone Balls

Number: 3; complete
Description: Two large and one small stone ball, pecked and ground into quite symmetrical circular shapes.
Dimensions: Diameters, 47, 54, and 23 mm.

Pipes

Illustrations: Figure 24 c
Number: 5; fragmentary
Description: Enough remains of two examples to indicate that they were originally conical in shape. Both taper slightly from the bowl end to the stem end. In cross-section they are circular. One retains the stem end, and this indicates that the bowl was drilled from the wider end, to be met with a small stem hole drilled from the opposite end. In this case, the stem perforation is at a slight angle to the bowl. The other fairly complete specimen retains a portion of the bowl opening, which is rounded. This example,
and two other smaller fragments bear deep striations in the bore as a result of the drilling process. The three small fragments include two pieces broken from the sides of pipes in the bowl region, and one from the stem region.

**Dimensions:** Outside diameters, 3½ and 40 mm.; Bore diameters, 21 and 20 mm.; Stem diameters, 7 and 8 mm. Not enough remained of any one specimen to allow determination of the length.

**Stone Figurine**

**Illustrations:** Figure 24 d

**Number:** 1; fragmentary

**Description:** Approximately one-half of a human figurine. In cross-section the fragment is oval, and it tapers slightly from the point where it is broken to the legs. The latter features are indicated by a fairly deep V-shaped notch at the base of the object. Not enough remains to determine what other features may have been present.

**Dimensions:** Length, 5½ mm.; Width, 4½ mm.; Thickness, 27 mm.

**Ornaments**

Ground stone objects of an ornamental nature are fairly well represented in the collections from the La Playa
site. Personal ornaments seem to have been highly prized by the occupants of the site. Both stone and shell objects of this type are present in the collection. Thirty-six ornaments fashioned from various types of stone are present. Eleven of these are from the Ronstadt Collection.

Disc-shaped Beads

Illustrations: Figure 24 a

Number: 5; 4 complete, 1 fragmentary

Description: Small discs of stone with flat faces and rounded edges. The amount of attention devoted to finishing these ornaments varies from those which are highly ground and polished to others bearing facets and striations as a result of the grinding process. Four of the beads have biconical perforations, indicating that drilling occurred from both faces. The fifth specimen seems to represent an unfinished bead, as no perforation is present and as it is not well finished, retaining a portion of the matrix from which it was extracted on one edge.

Dimensions: Diameter, 6-15 mm.; Thickness, 1-5 mm.

Barrel-shaped Beads

Number: 2; 1 complete, 1 fragmentary

Description: Small cylinders of stone with outcurved sides imparting a barrel-shape. Both are finely ground and finished. Perforations are biconical, and through the long
axis. In the case of the fragmentary example, apparently the bead snapped in half during the process of drilling, since drilling was never completed and is represented only by a small conical hole at one end.

**Dimensions:** Complete specimen -- Length, 5 mm.; Diameter, 8 mm. Fragment -- Length, 14 mm.; Diameter, 8 mm.

**Tubular Bead**

**Illustrations:** Figure 24 p

**Number:** 1; fragmentary

**Description:** One fragmentary, biconically perforated, tubular bead is present in the collection. Six fine, V-shaped grooves encircle the specimen. The edges have been flattened by the grinding process which was utilized to smooth and finish the artifact.

**Dimensions:** Thickness of walls, 3 mm.; Estimated diameter, 17 mm.

**Small Pendants**

**Illustrations:** Figure 24 1-9

**Number:** 6; 4 complete, 2 fragmentary

**Description:** While some of the ornaments in this category approximate the beads described above in size, they differ in the presence of a perforation near one end, rather than in the center. Differing outlines allow the small pendants to be described in three groups.
The first of these groups contains a single lozenge-shaped perforated ornament. The greatest width of this specimen occurs nearer the unperforated end than the perforated one. The edges are flat. The end above the perforation is rounded, as are the side points, and the opposite end is pointed. The perforation is biconical.

Four tear-drop shaped pendants are present in the second group. These are flat pendants with rounded edges. They taper from one rounded end to the other rather pointed end. Perforations, which are biconical in all cases, are nearer the more pointed of the two ends.

The third group, again represented by only one example, is that of rectangular small pendants. The specimen in this case is finely executed, and quite symmetrical. Two of the edges and one end are slightly concave. A series of fine notches is present around these concave surfaces. The biconical perforation is near the unnotched and flat end. **Dimensions:** Length, 10-32 mm.; Width, 8-15 mm.; Thickness, 2-3 mm.

**Large Pendants**

**Number:** 3; 1 complete, 2 fragmentary

**Description:** The three large pendants from the La Playa site are similar in being generally rectangular in outline. All are fashioned from flat plates of rock, and all are well
ground and smoothed. They differ slightly in modifications of the basic rectangular outline.

The complete example has convex ends and edges. A series of fine notches is present around one end, extending to a point 10 mm. from the other, where they culminate in two deeper V-shaped cuts. Two biconical perforations are present near the notched end.

One of the fragmentary examples lacks both ends, the upper end having been broken across the single biconical perforation. Edges are straight.

The remaining large pendant lacks the perforated end. Edges and the remaining end are convex. The faces are also convex, which is different from the nearly flat faces of the other large pendants.

**Dimensions:** Length (of single complete specimen), 98 mm.; Width, 31-36 mm.; Thickness, 2-4 mm.

**Large Notched Pendant**

**Number:** 1; complete

**Description:** A crudely made object roughly triangular in outline. Edges and corners are rounded. Two shallow notches are present near one end, forming an expanded stem. Grinding striations are present over the faces of the specimen. It is rather asymmetrical.

**Dimensions:** Length, 57 mm.; Width, 42 mm.; Thickness, 11 mm.
Remarks: The identification of this specimen as a pendant is rather questionable, but the presence of two notches near one point could have served to hold a cord for tying the object around the neck. It is less well finished than the other pendants, and, of course, differs in the presence of notches as opposed to perforations.

Nose Plugs

Illustrations: Figure 24 i, k

Number: 8; 7 complete, 1 fragmentary

Description: The eight specimens in this category are generally cylindrical in shape. Actually, they are slightly wider near the center and taper a very little to both ends. Ends are rounded in all cases. The specimens vary in the amount of finishing from finely ground and polished examples to others with grinding facets and striations. One is plano-convex in cross-section.

Dimensions: Length, 9-39 mm.; Diameter, 5-17 mm.

Remarks: A possible function as nose plugs is suggested by the shape of these specimens, and by the amount of finishing in which they are similar to other ornaments.

Comparisons: Nose plugs are known from the Southwest, one having occurred in a mummy at Ventana Cave (Haury 1950, Pl. 59). McGregor (1945: 303) notes the presence of another with the Burial of the Magician at the Ridge Ruin, and also
suggests that they form a more or less diagnostic culture trait for four foci in the Flagstaff area between A.D. 1050 and 1200. The foci are: Winona, Angell, Padre, and Elden (McGregor 1945: 303-4). Their occurrence in other Hohokam sites is summarized in the comparative charts.

Possible Nose Rings

**Illustrations:** Figure 244

**Number:** 2; fragmentary

**Description:** Two rather exotic objects, for the La Playa site, have been very tentatively identified as nose rings. Both are slightly off circular in outline, resembling more U-shapes, with the upper arms bent inward slightly. The remaining sections both have V-shaped cuts in the ends of the arms, with biconical perforations immediately below the point of the V. Both are very finely executed and finished, showing considerable polish.

**Dimensions:** Length 23-29 mm.; Width, 12-13 mm.; Thickness, 5-6 mm. The larger of the two would probably have been about 35 mm. in length when complete.

**Remarks:** The possibility of a use as nose rings is suggested by two things. First is the apparently ornamental nature of the objects. Compared to the utilitarian objects from the La Playa site, these specimens are much more highly finished and better executed. This is also true for most of
the other ornaments. The second suggestion comes from the shape of the objects themselves. The notched ends of these objects would not have come together, as both are slightly off-circular in outline. Consequently, it is suggested that perhaps the septum of the nose was compressed and the notched ends slipped over the lower fleshy portion, resting against the bone above. Why V-shaped notches and perforations are present is unknown, but these could have served as places to tie dangling objects to the rings.

Ear Spool

Number: 1; fragmentary

Description: The fragmentary ear spool is circular in outline, with a biconical central perforation and a deep U-shaped groove encircling the circumference. The ends are tapered slightly towards the outside of the artifact. Both the groove and the central perforation bear faint striations. A small section of one side is broken away.

Dimensions: Diameter, 18 mm.; Thickness, 8 mm.; Diameter of perforation, 9 mm.

Cruciform Objects

Illustrations: Figure 24 f-h

Number: 3; 2 complete, 1 fragmentary

Description: Each of these three objects has four points radiating from a central square portion. Two smaller exam-
pies are well ground and smoothed. The third has been only roughly flaked into shape, and a very minimum amount of grinding has taken place. One of the points is missing from this latter example. The edges of the two smaller specimens are concave between the points, and the greatest thickness is near the center of the faces, from which point they taper to the edges. Points are slightly rounded.

**Dimensions:** Length, 20-59 mm.; Width, 17-19 mm.; Thickness, 5-7 mm.

**Comparisons:** Cruciform objects are found widely distributed over northern Mexico and the southern section of the Southwest. Apparently the furthest south that they have so far been found is at Cuicuilco in the Valley of Mexico. Haury (1945, Fig. 2) mentions one in the Arizona State Museum collections from this site, and Hughes (1956: 80-2) notes the presence of four more with a burial found at the site. The burial may have been intrusive, however. They are present at Guasave and Topolobampo, Sinaloa (Ekholm 1942: 106-7), and at the Weicker site in Durango (Kelley and Shackelford 1954: 149). Other Durango occurrences include surface finds from an area some 10 km. west of the Weicker site, the Schroeder site, and a site some 60 km. north of Durango on the Hacienda El Ojo (Howard 1954: 174). Fay (1956: 410-11) records one from a midden in the vicinity of the pueblo of San José de Guaymas, Sonora. They are also present in
northern Chihuahua (Sayles 1936, Pl. 17).

Preceramic occurrences in the Southwest are noted for Ventana Cave (Haury 1950: 303-4), and Benson:5:10, a San Pedro stage site (Sayles and Antevs 1941, Pl. 15). Their presence in later Southwestern sites is noted for Gleeson (Fulton and Tuthill 1940, Pl. 20) and Tres Alamos (Tuthill 1947, Pl. 31).

Miscellaneous Objects

Probably of an Ornamental Nature

Number: 4; 2 complete, 2 fragmentary

Description: Under this heading are grouped four specimens, apparently ornamental in nature, which could not be classified in the above categories.

Group one includes two small trianguloid objects. One is complete, and the other fragmentary. The complete specimen has two flat faces, with rounded edges, one rounded end, and an opposite end which is tapered to a blunt point. It yields a length of 4.8 mm., a width of 6 mm., and a thickness of 4 mm.

A single fragmentary cylindrical object is present in the second group. The remaining end is brought to a sharp point, and immediately below this, a shallow groove encircles the object. It is 3 mm. in diameter.

The remaining artifact is a U-shaped object, formed
from a flat plate of stone by drilling a large central perforation biconically, rounding the edges, and sharpening the ends of the arms of the U. This specimen is 38 mm. long, 16 mm. wide, and 3 mm. thick.

Minerals

Number:  72

Description: Four groups of minerals are present, which were apparently collected by the Trincheras people for differing purposes. The first of these groups consists of six irregularly shaped pieces of steatite, probably gathered for the manufacture of ornaments. Four bear grinding facets at various places on their surfaces, and one has a deep V-shaped groove, probably resulting from an attempt to cut the stone.

Group two is made up of two small pieces of specular hematite which probably served as the purple paint on Trincheras Purple-on-red pottery.

The third group consists of 15 chunks of a ferruginous shale. All of the pieces are ground, and they may have served as a source of the red pigment seen on Altar Polychrome, and the red slip on Trincheras Purple-on-red.

A fourth group contains 48 crystals of transparent quartz and one of calcite. None bear any obvious traces of
modification by man, although many have been broken. Four of this total were collected by Ronstadt. Ethnographically, crystals are known to have been used in southern Arizona for medicinal purposes (Underhill 1940: 59).

Unclassifiable Fragments

Number: 11

Description: Six of the specimens in this group are flat plates of stone with ground faces and edges. Perhaps these represent palette fragments, but not enough remains to tell for sure.

Another appears to be a fragment of a small abrading stone, with traces of grinding on one face and around the edges.

The other seven are simply irregular fragments of stone with some trace of grinding. Three of these are composed of green steatite and may be fragments or unfinished sections of ornaments.

Rough Stone Artifacts

Under this heading are grouped all the stone artifacts from the La Playa site which show little or no intentional shaping by man. In most cases water-smoothed pebbles were selected. For the most part, no further attempt was
made to work these pebbles into some standardized form, as is true for a majority of the artifacts described above. Their use by man is indicated by traces of pecking on various surfaces.

Hammerstones

Number: 17; 13 complete, 4 fragmentary
Description: Rounded stream pebbles, with traces of pecking around the perimeter for the most part. Twelve retain sections of the original smoothed pebble on one or two sides. Blows have been hard enough in a number of cases to detach large flakes, the entire pebble having been split in two examples. One specimen with a sharpened edge may first have functioned as a chopper, and then have been secondarily used as a hammerstone. One somewhat more regular example bears two small pits in the faces. Perhaps this hammer was used between the thumb and forefinger in a rotating manner. In one case a hammerstone bears traces of pecking on the face, indicating a probable second use as an anvil stone.

Dimensions: Diameter, 52-85 mm.

Anvil Stones

Number: 2; complete
Description: Small water-washed pebbles, irregular in out-
line. The only modification of these pebbles was by use, and consists of irregularly shaped and placed pits on one flat surface.

**Dimensions:** Length, 86-117 mm.; Width, 45-49 mm.; Thickness, 12-23 mm.

**Remarks:** These tools probably had a number of functions, whenever a hard surface for pounding or cutting on was desired.

**Summary and Conclusions**

In this section data on artifacts of stone have been presented. It was noted that outcrops in the Cerros Boquillassas offered abundant and easily available supplies of siltstone, graywacke, and quartz, all of which were utilized by the inhabitants of the site for the production of tools and ornaments. These artifacts were initially subdivided into three broad groupings, chipped stone, ground stone, and rough stone. These groupings were then described in terms of types, a type consisting of all formally similar objects. Wherever possible functional labels were offered as type names. In those cases where the function was unknown a title referring to the shape was presented. Accompanying charts (Tables 1 and 2) give data on the kind of rock used for each type and also present the classification in summary
form. In addition to the type description, information on the function of the artifact and some comparative data was included in sections entitled "Remarks" and "Comparisons." Further data on comparisons are to be found in charts accompanying the comparative chapter of this report and in the chapter itself.

One of the striking features of the stone artifacts at La Playa is their typological similarity to early forms, especially those of the Cochise Culture. The closest parallels of the complex as a whole are with the San Pedro stage. Choppers, scrapers, metates, manos, and projectile points show the most obvious similarities, although there are other less frequently occurring forms, such as cruciform objects and pestles, which are generally alike in both the La Playa assemblage and that of the San Pedro stage (Sayles and Antevs 1941: 24-5).

On the basis of typological comparisons alone, it would be entirely possible to postulate two periods of occupation for the La Playa site, one a pre-ceramic period corresponding to the San Pedro stage of the Cochise Culture, and a second, later ceramic period. There is, however, no basis for this other than the typological similarities.

Discovery of the typologically early artifacts at the La Playa site caused attention to be directed specifically to this problem, and attempts were made to demonstrate
a definitely early occupation. First of all, examinations of the steep cut banks of the Rio Boquillas were made several times in an attempt to locate stratigraphically separated levels with the two assemblages in place. No evidence of the physical separation of the two complexes was found.

Second, a controlled collection was made from the surface of the site, in an attempt to discover horizontal differences in the material which had weathered out. Beginning at the eastern end of the site, circles with diameters of 25 feet were marked out on the surface of the ground, and collections of all artifacts were made from these areas. Each of the circles was about 100 m. apart, and located on approximately the east-west mid-line of the site, except where dog-legs had to be made as the quantity of artifacts thinned out in certain sections. Again in this case, no differences could be discerned. Typologically early stone artifacts occurred with pottery throughout the length of the site. Less controlled surveys of the remainder of the site indicated the same relationship.

As an alternative explanation of this situation, it is suggested that the La Playa site is an example of the late retention of early tool types. At least in part this possibly can be explained in terms of specialized functions for certain of the tools. Evidence from several different sources has been collected in support of a seasonal occupa-
tion of the La Playa site. Part of the support for this interpretation comes from an analysis of some of these typologically early tool forms. By the time of the occupation of La Playa (somewhere between A.D. 800 and 1100) the more efficient, at least for corn grinding, trough-shaped metates and rectangular, two-hand manos were in widespread use throughout the Southwest. That these forms were known by the inhabitants of La Playa is attested to by their presence in the collection of stone artifacts from the site. They occur in minor frequencies, however, and were apparently not the favored form, which was the basin-shaped metate and the one-hand mano.

If, as it is believed, the La Playa site was seasonally occupied, the most probable reason for this was the annual ripening of some wild food supply, or perhaps several types of wild plants which could be gathered in quantity to supplement the diet of these people. An assemblage of artifacts can be delineated in the La Playa material which may well be associated with this gathering. This assemblage includes the basin-shaped metate, the one-hand mano, the seed jar, and the cutting tool, all of which occur in quantity at the site.

It is suggested that this assemblage was used directly in the gathering and preparation of a small seed crop. The cutting tools may have functioned as small scythes for
cutting the stalks of the grain. After winnowing, perhaps in baskets, the seeds were then placed in seed jars, which had convenient restricted openings facilitating the retention of the seeds in the jars. They could then be prepared for consumption by grinding on the basin metates with one-hand manos.

As to why basin-shaped metates were favored over trough forms for grinding wild seeds, perhaps the basin itself served better to hold the light seeds than would a more open trough. The suggestion has been made (Haury 1950: 315-6) that manos with steeply convex grinding surfaces used in a rocking motion may have worked better to reduce the small wild seeds than manos with flat grinding surfaces which were not rocked. This helps little in this case, however, as most of the one-hand manos from the La Playa site are of the slightly convex or flat faced form. Seeds which may have been gathered are amaranth and saltbush, both of which are known to have been used by the Papago (Castetter and Bell 1942: 62).
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Rock Identifications: Chipped Stone Artifacts

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Rock Identifications:
Ground and Rough Stone Artifacts

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Table 2

Rock Identifications:

Ground and Rough Stone Artifacts

| Stone Vessels          | Local Siltstone | Local Graywacke | Local Quartz | Chert | Quartzite | Sandstone | Limestone Breccia | Slate | Ferruginous Shale | Specular Hematite | Green Steatite | Turquoise | Mica Schist | Andesite | Granite | Gneiss | Tuff | Fine Grained Basalt | Vesicular Basalt | Calcite | Argillite | Totals |
|------------------------|-----------------|-----------------|--------------|-------|-----------|-----------|-------------------|-------|-------------------|-------------------|---------------|-----------|------------|-----------|--------|--------|--------|------|---------------------|------------------|---------|-----------|-------|
| Circular               | 1               |                 |              |       |           |           |                   |       |                   |                   |               |           |            |           |        |        |        |      |                     |                   |         |           |       |
| Oval                   |                 |                 |              |       |           |           |                   |       |                   |                   |               |           |            |           |        |        |        |      |                     |                   |         |           |       |
| Rectangular            |                 |                 |              |       |           |           |                   |       |                   |                   |               |           |            |           |        |        |        |      |                     |                   |         |           |       |
| Unclassifiable Fragments | 2               |                 |              |       |           |           |                   |       |                   |                   |               |           |            |           |        |        |        |      |                     |                   |         |           |       |
| Palettes               | 2               |                 |              |       |           |           |                   |       |                   |                   |               |           |            |           |        |        |        |      |                     |                   |         |           |       |
| Abrading Slabs         | 2               |                 |              |       |           |           |                   |       |                   |                   |               |           |            |           |        |        |        |      |                     |                   |         |           |       |
| Small Pestles          |                 |                 |              |       |           |           |                   |       |                   |                   |               |           |            |           |        |        |        |      |                     |                   |         |           |       |
| Large Pestles          | 1               |                 |              |       |           |           |                   |       |                   |                   |               |           |            |           |        |        |        |      |                     |                   |         |           |       |
| Abrading Stones         |                 |                 |              |       |           |           |                   |       |                   |                   |               |           |            |           |        |        |        |      |                     |                   |         |           |       |
| Reamers                | 8               |                 |              |       |           |           |                   |       |                   |                   |               |           |            |           |        |        |        |      |                     |                   |         |           |       |
| Grooved Stones          | 3               |                 |              |       |           |           |                   |       |                   |                   |               |           |            |           |        |        |        |      |                     |                   |         |           |       |
| Stone Axes             |                 |                 |              |       |           |           |                   |       |                   |                   |               |           |            |           |        |        |        |      |                     |                   |         |           |       |
| Three-quarter Grooved   | 1               |                 |              |       |           |           |                   |       |                   |                   |               |           |            |           |        |        |        |      |                     |                   |         |           |       |
| Full Grooved           | 1               |                 |              |       |           |           |                   |       |                   |                   |               |           |            |           |        |        |        |      |                     |                   |         |           |       |
Table 2
Rock Identifications:
Ground and Rough Stone Artifacts

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Table 2
Rock Identifications:
Ground and Rough Stone Artifacts

| Category                              | Local Siltstone | Local Graywacke | Local Quartz | Quartzite | Sandstone | Limestone Breccia | Slate | Ferruginous Shale | Specular Hematite | Green Steatite | Turquoise | Mica Schist | Andesite | Granite | Gneiss | Tuff | Fine Grained Basalt | Vesicular Basalt | Calcite | Argyllite | Totals |
|---------------------------------------|-----------------|-----------------|--------------|-----------|-----------|-------------------|-------|------------------|-------------------|----------------|-----------|------------|-----------|---------|--------|-------|-------|----------------------|------------------|---------|----------|--------|
| Small Pendants                        |                 |                 |              |           |           |                   |       |                  |                   |                |           |            |           |         |        |       |       |                      |                  |          |           |        |
| Large Pendants                        | 2               |                 |              |           |           |                   |       |                  |                   |                |           |            |           |         |        |       |       |                      |                  |          |           |        |
| Large Notched Pendant                 | 1               |                 |              |           |           |                   |       |                  |                   |                |           |            |           |         |        |       |       |                      |                  |          |           |        |
| Cylinders                             | 3               |                 |              |           |           |                   |       |                  |                   |                |           |            |           |         |        |       |       |                      |                  |          |           |        |
| Nose Ring                             |                 |                 |              |           |           |                   |       |                  |                   |                |           |            |           |         |        |       |       |                      |                  |          |           |        |
| Ear Spool                             |                 |                 |              |           |           |                   |       |                  |                   |                |           |            |           |         |        |       |       |                      |                  |          |           |        |
| Cruciform Objects                     | 1               |                 |              |           |           |                   |       |                  |                   |                |           |            |           |         |        |       |       |                      |                  |          |           |        |
| Miscellaneous Objects of an Ornamental Nature | 2               |                 |              |           |           |                   |       |                  |                   |                |           |            |           |         |        |       |       |                      |                  |          |           |        |
| Unclassifiable Fragments              | 4               | 2               |              |           |           |                   |       |                  |                   |                |           |            |           |         |        |       |       |                      |                  |          |           |        |
| Hammerstones                          | 10              | 2               |              |           |           |                   |       |                  |                   |                |           |            |           |         |        |       |       |                      |                  |          |           |        |
| Anvil Stones                          |                 |                 |              |           |           |                   |       |                  |                   |                |           |            |           |         |        |       |       |                      |                  |          |           |        |
| Minerals                              | 48              | 15              | 2            | 6         |           |                   |       |                  |                   |                |           |            |           |         |        |       |       |                      |                  |          |           |        |
| Totals                                | 103             | 23              | 50           | 2         | 8          | 10                | 1     | 5                 | 15                | 2              | 22         | 238       | 4         | 26      | 1      | 3     | 7      | 39                  | 1                 | 1        | 363      |        |
ARTIFACTS OF SHELL

A ready supply of shell in the Gulf of California, about 85 miles west of the La Playa site, offered the inhabitants an easily worked substance for objects of an ornamental nature, and, with the exception of a few shell needles, shell was used only for this purpose. The following list gives 27 species which were collected at the site. All occur in the Gulf of California. Traces of worm borings on many of the specimens in the collection indicate that old shells were gathered from the beaches. A few objects are formed from fresh water mussel shells.

Glycymeris maculatus Broderip
Glycymeris gigantea Reeve
Glycymeris sp. (Juvenile)
Vermetus centiquadrus Valens.
Olivella dama Kawe
Conus ximines Gray
Conus princeps Linnaeus
Oliva incrassata Solander
Oliva sp.
Cardium elatum Sowerby
? Cardium procerum Sowerby
Pecten vogdesi Arnold
Pecten circularis Sowerby
Turbo saxosus Wood

Turbo fluctuosus Wood

Chione californiensis Broderip

Crepidula cf. C. onyx Sowerby

Agaronia testacea Lamarck

Tegula mariana Dall

Crucibulum spinosum Sowerby

Trivia radians Lamarck

Cardita affinis Sowerby

Nerita funiculata Menke

Anomis peruviana D'Orbigny

Murex sp.

Chama echinata Broderip

? Pinctada mazatlanica Hanley

Columbella major Sowerby

Cerithidea albonodosa Gold and Carpenter

Turitella leucostoma Valenciennes

An accurate tabulation of the quantity of each species cannot be given, as many of the objects are fragmentary or worked to the point where identification is no longer possible. It should be noted, however, that Glycymeris specimens far outnumber any of the others. Most species are represented by only one or two examples, with the exception of Vermetus, Olivella, and Cardium, which are fairly numerous. Thirty-four of the shell artifacts described below are
from the Ronstadt collection.

The importance of shell as an indicator of trade relations in the Southwest has long been recognized. A discussion of the La Playa site in this trade will be found below in the summary and conclusions to this section.

Shell Needles

**Illustrations:** Figure 25 a, b

**Number:** 4; 2 complete, 2 fragmentary

**Description:** Small shell needles were manufactured from *Glycymeris* valves. All examples retain the natural curvature of the valve, and taper from one broader, rounded end to a sharp tip. Each is biconically perforated near the broader end. The needles are finely ground and finished.

**Dimensions:** Length, 19-35 mm.; Width, 4-5 mm.; Thickness, 2-4 mm.

**Remarks:** The four shell needles are the only objects of shell in the collection which can definitely be identified as having a utilitarian nature. A few of the large fragments of *Cardium* may once have served as dishes, but no use traces remain today to indicate that this was so.

Whole Shell Beads

**Illustrations:** Figure 25 c-f
Artifacts of shell.  a, b, shell needles; c, d, *Olivella* beads; e, *Conus* bead; f, *Oliva* bead; g, h, cut shell beads; i, j, disc beads; k, l, rectangular beads; m, n, tubular beads; o, barrel-shaped bead; p, *Glycymeris* whole shell pendant; q, *Pecten* whole shell pendant; r, circular pendant; s, rectangular pendant; t, triangular pendant; u, elongate pendant; v, irregular pendant; w, *Conus* tinkler; x, nose plug. Length of x, 32 mm.
Number:  56; complete
Description:  *Olivella*, *Oliva*, *Conus*, *Agaronia*, *Trivia*, *Nerita*, and *Columbella* were all used for whole shell beads. By far the most common method of manufacture was to grind off the spire, thus leaving a central perforation by means of which the bead could be strung. Occasionally perforations were drilled into the lip or were broken through this section. These were made in addition to the spire grinding, or represent the only perforation in the shell.

**Cut Shell Beads**

**Illustrations:** Figure 25 *g, h*

Number:  11; complete
Description:  In this case, the spire was ground from *Conus* and *Oliva* shells, and then the wider end was detached from the shell, producing disc-shaped beads. None of the beads in this category bear any other modification.

**Disc Beads**

**Illustrations:** Figure 25 *i, j*

Number:  22; 18 complete, 4 fragmentary
Description:  Small discs of shell with central perforations. The thicker examples, 11 in number, have biconical perforations, while the 10 thinner beads are perforated from one
face only. A single bead exhibits two perforations, while another has none. All are ground to the point where specific identification is no longer possible, but none are finely finished. Both grinding facets and the original roughness of the shell appear on most of the specimens.

Dimensions: Diameter, 5-20 mm.; Thickness, 1-13 mm.

Rectangular Beads

Illustrations: Figure 25 k, l

Number: 3; complete

Description: These are small rectangular beads with central conical or biconical perforations. All are more finely ground and finished than the disc beads described above.

Dimensions: Length, 8-14 mm.; Width, 7-12 mm.; Thickness, 1 mm.

Tubular Beads

Illustrations: Figure 25 m, n

Number: 16; 13 complete, 3 fragmentary

Description: A majority of the tubular beads were manufactured from Vermetus, the casing of the marine worm. These long cylinders were cut to the desired length, and then ground to a smooth, finished form. In addition to the finished beads, the collection contains examples of the various
stages of manufacture, ranging from rough specimens picked up on the coast to those which have been cut to length and partially ground.

**Dimensions:** Length, 3-58 mm.; Diameter, 6-14 mm.

**Barrel-shaped Beads**

**Illustrations:** Figure 25

**Number:** 2; complete

**Description:** These are two tubular beads with outcurved sides imparting a barrel-shape. Both bear longitudinal biconical perforations. The specimens have been ground to the point where identification of the type of shell is no longer possible.

**Dimensions:** Length, 7 and 26 mm.; Diameter, 10 and 12 mm.

**Double-lobed Bead**

**Number:** 1; fragmentary

**Description:** The single double-lobed bead has a roughly circular section which is biconically perforated. Immediately below this section is a constriction. A slight widening of the bead below the constriction is indicated, but the lower lobe is broken off, so the original shape cannot be determined. Shell type is unidentifiable.

**Dimensions:** Length, 13 mm.; Width, 10 mm.; Thickness,
Comparisons: Double-lobed, or figure-8, beads do not occur until fairly late in the Southwest. Their presence in Santa Cruz and Sacaton contexts at Snaketown is noted (Gladwin and others 1937: 140). At Snaketown, a small bead of the Santa Cruz phase is followed by a larger form in the Sacaton phase. Similar beads of stone also are present in the same phases at Snaketown (Gladwin and others 1937: 127). Double-lobed beads of shell occur as innovations in the Mogollon during Mogollon 4, along with bone and shell rings. All are probably introductions from the Hohokam (Wheat 1955: 149). Eckholm (1942: 109-11) notes the presence of this bead type in Guasave in quantity, but its lack over much of the rest of Mexico except Chihuahua. As shell carving is well developed in the Huatabampo Culture of southern Sonora, he suggests that this may have been an intermediary through which the form passed from the Hohokam to the Aztatlan peoples of Sinaloa, with which the Guasave site is correlated. More recent work indicates the possibility of a somewhat wider spread in Mexico. Johnson (1958: 127), for instance, notes the presence of figure-8 beads in the Chalchihuites Culture of Durango.
Pendants

In general, pendants are distinguished from beads in this report by their larger size and the presence of a perforation near one end, as a result of which the greater part of the pendant hung below the attachment of the string.

Whole Shell Pendants

Illustrations: Figure 25 p, q
Number: 6; complete
Description: Whole shell pendants are represented by specimens of *Glycymeris*, *Pecten*, and *Cerithidea*. In the case of the first two, *Glycymeris* and *Pecten*, which are bivalves, the umbos have been ground to the point where a perforation is worked through to the interior of the shell. The only other modification occurs on one of the *Glycymeris* examples, which is slightly ground on the edges. The *Cerithidea*, a univalve, has a perforation broken through the lip.

Circular Pendants

Illustrations: Figure 25 r
Number: 3; 1 complete, 2 fragmentary
Description: One of the circular pendants is of *Glycymeris*, another of *Cardium*, and the third is ground to the point where identification is no longer possible. The *Glycymeris* example is apparently a core remaining from bracelet manu-
facture. The core has a central biconical perforation, and the edges are slightly ground. The Cardium pendant bears a central perforation which was broken through the thin shell. The edges are slightly ground. The third specimen exhibits two biconical perforations near one edge and has ground edges and faces.

**Dimensions:** Diameter, 27-32 mm.; Thickness, 1-6 mm.

**Rectangular Pendants**

**Illustrations:** Figure 25

**Number:** 8; 5 complete, 3 fragments

**Description:** These pendants are generally rectangular in outline with rounded ends. Perforations are biconical in five cases. Two of these examples have dual perforations. One of the three examples with drilling from only a single face has two perforations. In one case the perforation is centrally located. All are ground to the point where identification of the type of shell is no longer possible.

**Dimensions:** Length, 14-21 mm.; Width, 9-13 mm.; Thickness, 1-7 mm.

**Triangular Pendants**

**Illustrations:** Figure 25

**Number:** 2; 1 complete, 1 fragmentary

**Description:** These pendants have triangular outlines with conical perforations near the broader end, allowing the pen-
dants to hang with the point downward. Edges are slightly convex. One is of Cardium and the other is ground to the point where identification is no longer possible.

**Dimensions:** Length, 18 and 27 mm.; Width, 9 and 10 mm.; Thickness, 1 and 2 mm.

**Elongate Pendants**

**Illustrations:** Figure 25 u

**Number:** 2; fragmentary

**Description:** These are long narrow pendants retaining the original curve of the shell from which they were formed. Both have biconical perforations near one end. Neither pendant is highly finished, but both are ground to the point where shell identification is impossible.

**Dimensions:** Length, 42 and 46 mm.; Width, 5 and 6 mm.; Thickness, both 2 mm.

**Irregular Pendants**

**Illustrations:** Figure 25 v

**Number:** 4; 3 complete, 1 fragmentary

**Description:** The four pendants in this category all have irregular shapes as a result of using odd shaped shells and not highly finishing them. Two are of Murex, one is of Pecten, and one is unidentifiable. Three are biconically perforated, and the fourth is perforated from only one face.
Unclassifiable Fragments

Number: 9

Description: These fragments are irregularly shaped, perforated specimens which were once probably pendants, but which are too fragmentary to allow classification under the above headings. Types of shell represented could not be identified.

Conus Tinkler

Illustrations: Figure 25 w

Number: 1; complete

Description: A section of a Conus shell with the spire ground off and the lower part of the shell cut away. No other modification is present.

Remarks: Probably a cord was inserted through the spire perforation and then knotted, allowing the tinkler to dangle at the end. It may have been used in combination with others of the same type as a decoration for clothing or ceremonial costume.

Comparisons: Conus tinklers are not of frequent occurrence in the southern part of the Southwest, and they apparently do not occur until late time periods. They are noted as being present during the Classic Hohokam period at Los Muertos (Haury 1945: 149-50). They occur earlier and in greater quantity at Pecos (Kidder 1932: 190-2). At this latter site
they are present from Glaze I times to the close of the occupancy of the site. Their association in apparent ceremonial contexts and as mortuary offerings with infant burials is noted.

**Nose Plugs**

**Illustrations:** Figure 25 x

**Number:** 3; complete

**Description:** The first object to be described is quite similar to the specimens labeled "ground stone nose plugs," above. It is a solid cylinder of shell with rounded ends. Little finish work has been done, and the example retains traces of the original rough surface of the shell.

The other two nose plugs are rectangular in outline and plano-convex in cross-section. The ends and edges are slightly outcurved. Both specimens are highly finished. Identification of shell type was not possible.

**Dimensions:** Length, 32-37 mm.; Diameter (of first), 11 mm.; Width, 15 and 18 mm.

**Comparisons:** The presence of nose plugs of stone in the Southwest was noted above in the comparative section accompanying that type of artifact. Nose plugs of shell have not been noted for other Southwestern sites, and perhaps their importance in the Trincheras Culture can be inferred from this occurrence.
Shell Bracelets

Of the shell ornaments at the La Playa site, bracelets occur in greatest quantity. Only one type of shell, *Glycymeris* (Fig. 26 a), was used for the manufacture of bracelets. The residue from this manufacturing process yields a clear picture of how the bracelets were made. Two processes were used in the manufacture of bracelets, but one of these, to be described first, was by far the most common.

Tools used for bracelet manufacture were probably the reamers (Fig. 20 d-f) and grooved stones described above, both of which occur in quantity at the site. The initial step seems to have been to use the edge of a reamer to file a groove, encircling a central core (Fig. 26 c, d) which was to be removed, on the convex surface of the valve. When the groove had been ground nearly through the shell, one end of the reamer was utilized as a small hammer to break the core from its encircling groove. This left a rough ring of shell (Fig. 26 b), which was then ground down into the finished product. Unfinished bracelets in the collection indicate that the central perforation was finished before the outside edges were smoothed. This interior finishing was probably done by rubbing the reamer back and forth and up and down over the shell, thereby grinding away rough edges and smoothing the perforation. Finally, one of the grooved stones was
used to grind the outside margins smooth (Fig. 26 g, h).

The second method of manufacture paralleled the first once the core had been removed, but differs in the method of removal of the core. In this case, the convex side of the valve was rubbed back and forth on a grinding stone, thereby thinning the shell to the point where a hammer could be used to break out the core (Fig. 26 g).

These two processes were utilized to produce a majority of the bracelets at the La Playa site, which are simple bands with no other modification (Fig. 26 g, h). Techniques such as incising, carving, and drilling were occasionally used to produce slightly more elaborate forms (Fig. 26 f), but in general elaborations such as are seen in the Hohokam bracelets along the Gila (Gladwin and others 1937: 142-144) were not produced by the inhabitants of the La Playa site.

**Glycymeris Bracelets**

All of the *Glycymeris* bracelets from the La Playa site closely correspond to those from Snaketown, and consequently the categories established for description of the bracelets from Snaketown are followed here.

**Thin, Narrow Band**

*Number*: 32; fragmentary

*Description*: Circular bracelets with small angular umbonal
**FIGURE 26**

*Glycymeris* bracelet manufacture.  
- a, unmodified *Glycymeris* valve;  
- b, central core removed;  
- c, d, cores removed by filing;  
- e, core removed by grinding valve;  
- f, medium width bracelet with carved umbo;  
- g, h, medium width bracelets.  
Length of h, 71 mm.
projections. The umbonal projection is partially perforated in one case.

**Dimensions:** Band width, 4-5 mm.

**Medium Band**

**Illustrations:** Figure 26 f-h

**Number:** 47; fragmentary

**Description:** Circular bracelets with slightly wider bands. The umbonal projection is small and rounded. Two of the examples retaining the umbonal projections are perforated, one has an umbo carved into a triangular shape, and the third projection is unmodified. Incised designs are present in two cases.

**Dimensions:** Band width, 5-10 mm.

**Thick Band**

**Number:** 4; fragmentary

**Description:** Circular bracelets with thick, wide band. None retain the umbonal projection.

**Dimensions:** Band width, 10-14 mm.

**Residue from Manufacture of Shell Bracelets**

**Illustrations:** Figure 26 b-e

**Number:** 318

**Description:** Included in this category are 268 cores which were removed by cutting an encircling groove and breaking
the core from this groove. In addition, there are three cores representing the process of first grinding the core thin and then breaking it out, and 49 bracelets in various stages of completion. The latter examples range from valves with just the core removed to others which need only the outer edges finished. The quantity of residue from bracelet manufacture is not fairly represented by this list, as only a representative sample was gathered. Cores, especially, abound at the site today and large quantities have been collected by amateurs over the years.

Miscellaneous Unclassifiable Fragments

Number: 17

Description: Specimens of Cardium, Glycymeris, Chama, ? Pinctada, and unidentifiable shells are represented in this grouping. All bear traces of grinding on the edges or faces, but none are complete enough to allow classification under the above headings.

Summary and Conclusions

In this chapter all of the artifacts manufactured from marine shells were described. Shell artifacts were initially subdivided into two broad groups: utilitarian objects and ornamental objects. The only utilitarian objects
found at the La Playa site were shell needles. Ornamental objects occurred more frequently, and were further subdivided for descriptive purposes into beads, pendants, Conus tinklers, nose plugs, and bracelets. Glycymeris bracelets and the residue from the manufacture of these items were found to be the most frequently occurring items of shell at La Playa.

The large number of shell species recovered from the surface of the La Playa site, along with the quantity of individual artifacts, is interesting in terms of trade relations. On the basis of an examination of collections of marine shells from Southwestern archaeological sites, Brand (1938: 7-9) has suggested a trade route for shells which went from the coast of the Gulf of California, through the Trincheras area, and north into the Hohokam region. A majority of shells found in sites north of the Hohokam area can be attributed to trade either first or second hand from this latter culture (Brand 1938: 9).

In general terms it appears that the farther from the Gulf of California one gets, in the Southwest, the fewer the number of species which are found. There is one major exception to this, the site of Pecos, which Brand ranks third in a list of sites having the greatest number of genera or species of marine shells. Pecos, however, is an excellent example of the effectiveness of probably Hohokam
trade relations in shell. Less than 10% of the shells found at this site are from the Gulf of Mexico, and the site is situated in the Rio Grande drainage. The remainder come from western waters (Brand 1938: 7).

The place of the Trincheras Culture in these trade relations is not yet definitely known, but some suggestions can be made. First of all, the quantity of individual shells, and the large number of species both speak for the importance of shells to the Trincheras people. The number of species closely approximates that of Snaketown (Gladwin and others 1937: 135-8), where shell work was quite highly developed. Present evidence would seem to indicate that the Trincheras people were the major suppliers of shell for the more northerly Hohokam. Gifford (1946: 217-9) has noted the presence of sites in the Punta Peñaisco region near the coast which contain Trincheras Purple-on-red sherds. These sites have no depth of cultural deposit, and appear to be the remains of occasional or seasonal visitors to the area. It can be suggested that these sites represent camps of shell gatherers who journeyed periodically to the coast to collect shells for trade on north to the Hohokam. Hohokam sherds are also present in this region, but in minor quantity, indicating, however, that trips to the Gulf of California were probably made by these shell workers.

Woodward (1936: 117-25) has suggested the possibil-
ity that the La Playa site was a shell manufactory from which point shell ornaments, especially *Glycymeris* bracelets, were traded north into the Hohokam country of southern Arizona. He bases this on the large amount of residue from the manufacture of bracelets at La Playa, in contrast to the Hohokam sites where finished objects greatly predominate over the detritus from manufacture. In addition is the proximity of the La Playa site to the Gulf of California where shells were obtained, as opposed to the greater distance of the Hohokam sites farther north.

This is an interesting possibility, and one that is, in general, supported by this study of the La Playa site. Since the publication of Woodward's article considerable data on the prehistoric cultures of southern Arizona have appeared in print, and it is now possible, at least in a general way, to correlate the Trincheras material from La Playa with that of the region adjoining on the north. This correlation, which was discussed more fully above in the section on "Pottery," indicates that the La Playa manifestation of the Trincheras Culture was in existence during the Santa Cruz and Sacaton phases of the Hohokam sequence.

Thanks to a detailed stratigraphic study of the Snaketown site (Gladwin and others 1937) a sequence of plain shell bracelets is available. According to this sequence, thin narrow bands are characteristic of the Pioneer period.
The intermediate type appeared first in the late phases of the Pioneer period, and was most frequent in the Santa Cruz and Sacaton phases. Wide, heavy bands occur in the latest phases of the Snaketown sequence, and continue into the Classic period (Gladwin and others 1937: 142).

It will be noted that all three of these bracelet types occur at the La Playa site, but that the intermediate variety is the most common. While there were only a few less thin, narrow bands of the earliest type it is important to point out that all of these are on the upper end of the width range, and grade imperceptibly into the intermediate type.

This would indicate that, at least in terms of time, the suggestion of trade in shell bracelets between the La Playa site and the Hohokam is feasible. If, however, trade in bracelets between the inhabitants of the La Playa site and the Hohokam was carried out this was apparently only in terms of the plain types. Elaborations in shell working which are so characteristic of the Hohokam occur in only minor frequencies at the La Playa site.

Woodward (1936: 123) raises the question as to whether the carved forms of bracelets were traded north, or only blank armlets which were further elaborated on arrival in southern Arizona. The data from the La Playa site indicate that neither of these points can be supported. As noted
above, carved bracelets are not a significant part of the La Playa complex. In addition, the finished bracelets in the La Playa collection, which are presumably ready for trade, could not have been elaborated as were many of the Hohokam carved bracelets. For one thing, most of the finished La Playa bracelets are too thin to carry much carving. Also, in nearly every case the umbo, which received much of the carver's attention, has been reduced to the point where it is no longer usable for carving. It, of course, may be that unfinished bracelets, which are present in the La Playa collection, or even whole shells were the objects actually traded, and that the finished bracelets were made for local consumption.

In summary, then, it is probable that the inhabitants of the La Playa site were acting as dealers in the shell trade of the Southwest. This is supported by chronological considerations, by the number of shell species found at La Playa, by the quantity of residue from shell bracelet manufacture at the site, and by the proximity of the site to the Gulf of California. A number of questions raised above indicate that the existence of trade in shell bracelets, however, has not yet been definitely proven.

One other aspect of the shell artifacts from the La Playa site should be considered here. This is the fact that the only objects found as offerings to the dead were seven
cores from *Glycymeris* bracelet manufacture recovered in Cre­
mation 1. In addition, one *Olivella* bead and four bracelet
fragments, all of which are burned, were collected from the
surface of the site. The fact that these are burned sug­
gests that they too were cremation offerings. The fact that
shell objects were the only offerings discovered may be an
indication of the importance of this substance to the inhabi­
tants of the La Playa site.

**ARTIFACTS OF BONE AND ANTLER**

Artifacts manufactured from bone and antler are not
well represented at La Playa, only 25 examples being pre­
sent, all of which can be grouped into three types. Most of
the artifacts described in this section are probably of deer
bones, either White Tail or Mule. Techniques of manufacture
include cutting the bones and antlers to desired lengths,
and then grinding them to their finished form. Drilling was
employed on a few of the antler specimens. A small collec­
tion of unworked bones was made for the purpose of identify­
ing types of animals utilized by the Trincheras people.
These identifications are here presented.

- Dog, *Canis familiaris*
- Desert Tortoise, *Gopherus* sp.
- Antelope Jackrabbit, *Lepus alleni*
Swift Fox, *Vulpes macrotis*
Javelina, *Tayassu angulatum*
Mule Deer, *Odocoileus hemionus*
? While Tail Deer, *Odocoileus virginianus*
Marine Mammal, *Cetacea*

With the exception of the last type on the list, all of these animals exist in the area today. Most probably represent animals hunted by the Trincheras people as a source of food. The occurrence of the bones of a marine mammal of the order *Cetacea*, which includes whales, dolphins, porpoises, and grampuses, is interesting, but may indicate nothing more than a curiosity picked up on the beaches of the Gulf of California on a shell gathering expedition. It is another indication that the Trincheras people actually made trips to the Gulf, rather than obtaining their shells second hand from people dwelling in this region.

**Splinter Awls**

**Illustrations:** Figure 27 c-e

**Number:** 16; 4 complete, 12 fragmentary

**Description:** All of the awls collected from the La Playa site are manufactured from splinters of bone, probably broken from deer long bones. Any fairly long splinter of bone was probably suitable for the manufacture of these artifacts, although in two cases the bone may have been intentionally
cut for their manufacture. These two retain small portions of the articular ends of long bones, and the bones were possibly cut in order to retain these as hand-holds. Each of the awls tapers from one broader, rounded end to a fairly sharp point. Most are ground smooth, although a few retain portions of the interior cancellous bone.

**Dimensions:** Length, 77-135 mm.; Width, 8-17 mm.; Thickness, 4-9 mm.

**Remarks:** Splinter awls were probably used in skin working and also perhaps for basketry manufacture.

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**Antler Flakers**

**Illustrations:** Figure 27 f, g

**Number:** 7; fragmentary

**Description:** Antler flakers are sections of deer antler, cut to a desired length, and ground slightly smooth. All have one rounded, blunt end which was the working surface. The opposite end, which would have served as a hand-hold, is missing in all cases.

**Dimensions:** Length, 61-84 mm.; Diameter, 8-26 mm.

**Remarks:** Antler flakers were probably utilized in flaking stone artifacts, a well developed industry at La Playa.
Artifacts of bone and antler. a, b, drilled antler sections; c-e, splinter awls; f, g, antler flakers. Length of g, 63 mm.
Drilled Antler Sections

Illustrations: Figure 27 a, b

Number: 2; fragmentary

Description: The two artifacts in this category are heavy sections of antler, probably deer. In both cases the interior cancellous bone has been drilled out. In one case, the drilling is through the entire section, thereby forming a tube. The other example is drilled only part way through.

Dimensions: Length, 79-114 mm.; Diameter, 24-29 mm.

Comparisons: Generally similar artifacts from Ventana Cave were tentatively identified as awl handles (Haury 1950: 384). They also occur in the Anasazi area, as their presence was noted at Pecos (Kidder 1932: 276-8).

Summary and Conclusions

A small collection of identifiable bones, and bone and antler artifacts was described in this chapter. With the exception of a marine mammal from the Gulf of California, all of the animal types represented by the identifiable bones are found in the area today. All of the artifacts could be grouped into three types: splinter awls, antler flakers, and drilled antler sections. The small size of this collection may not represent the true situation, as all of the material was obtained from the surface. It is
entirely possible that many specimens of bone have been destroyed by the erosive processes which have damaged the site so seriously.
CHAPTER IV

COMPARISONS

In this chapter an attempt will be made to place the Trincheras Culture in the broader framework of Southwestern archaeology. At the outset of this discussion a few important points should be made. First of all, detailed comparisons have, of necessity, to be made with the La Playa site, as this is the only site of the Trincheras Culture from which detailed information is so far available. Aside from the fact that an entire culture area is being placed on the basis of a single site, there are several factors concerned with the site itself which make the placement only tentative. First of all, La Playa has been nearly destroyed by erosion, so no data on in situ artifacts and their associations with features can be included. Second, no houses were discovered at the La Playa site, which is unfortunate, as architecture, along with pottery, has proved to be very useful in making comparisons. Third, La Playa may be a specialized site, the occupation depending on a seasonal abundance of wild plants which could be utilized as food. Consequently, it may not be typical of the Trincheras Culture as a whole. These factors should be kept in mind when
evaluating the following presentation.

Detailed comparisons of the La Playa artifact assemblage with other archaeological complexes are presented in the accompanying Tables 3-7. Other comparative data are to be found in chapters on features and artifacts. In an attempt to relate the La Playa material to archaeological manifestations which might possibly be culturally and historically associated the area of comparison has been restricted, for the most part, to the regions immediately surrounding the Trincheras Culture area (Fig. 1).

Two sites in the Desert Hohokam area, Ventana Cave (Haury 1950) and Valshni Village (Withers 1931), are compared, as is Snaketown (Gladwin and others 1937) in the River Hohokam region. Southern Mogollon is represented by the San Simon Branch (Sayles 1945) and several cave sites in the Sierra Madre (Lister 1958). To the northeast, the Gleeson site (Fulton and Tuthill 1940) and Tres Alamos (Tuthill 1947) are presented for the Dragoon area, which seems to represent a blend of Mogollon and Hohokam traits (Tuthill 1950: 53). Di Peso (1956) has recently given the name "Ootam" to this blend. The only published data on a southern area close to the Trincheras region is Ekholm's report on Guasave (1942). Originally, this site was assigned a date of A.D. 1350 (Ekholm 1942: 130). A recent revision of the chronology of Western Mexico (Kelley and Winters 1960:
10) indicates a longer time span for Guasave, making it at least in part contemporaneous with the occupation of La Playa.

All of the other sites included in the tables are believed to be contemporaneous with the La Playa occupation. For multiple component sites, only those phases which equate in time are included. In making these comparisons all of the above reports were searched for identical or closely similar artifacts and wherever possible reference was made to the illustrations. In the charts the numerical quantity of artifacts has been indicated whenever possible. Capital "P'\textquotesingle s" indicate presence where the number was not given.

Examination of these tables and other comparative data included in this report indicates that the closest relationship of the La Playa site is with the Hohokam Culture of southern Arizona, although there are interesting parallels with the Mogollon which will be considered below. The Hohokam Culture has been sub-divided into two branches, the River and the Desert, the first centered in the Gila-Salt and Santa Cruz drainages, and the second in Papaguerría (Haury 1950, Fig. 2). The Desert Hohokam area adjoins that of the Trincheras Culture immediately on the north and it is with this complex that the closest relationships are found.

A list of the typical traits of the Desert Branch
is given in the Ventana Cave report (Haury 1950: 547), in a comparison of the Desert with the River Branch of the Hohokam. From an examination of this list the similarity of the two complexes immediately becomes apparent. This list is reproduced in the left hand column below, with comparable data from the La Playa site in the right hand list.

<table>
<thead>
<tr>
<th>DESERT HOHOKAM</th>
<th>LA PLAYA SITE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earth burial</td>
<td>Earth burial and cremation</td>
</tr>
<tr>
<td>Red-on-brown pottery, polished</td>
<td>Purple-on-red pottery, polished, generally similar</td>
</tr>
<tr>
<td>Red ware, red interiors</td>
<td>Trincheras Red at Paloparado site, not at La Playa</td>
</tr>
<tr>
<td>Block metate, some shaping, not troughed as a rule</td>
<td>Basin-shaped metate</td>
</tr>
<tr>
<td>Limited projectile point types, few in number, workmanship inferior</td>
<td>Limited projectile point types, large number due to local outcrops of suitable stone for manufacture, workmanship inferior</td>
</tr>
<tr>
<td>Carved stone weakly represented</td>
<td>Carved stone weakly represented</td>
</tr>
<tr>
<td>Abundance of roughly chipped chopping, scraping and cutting tools</td>
<td>Abundance of roughly chipped chopping, scraping and cutting tools</td>
</tr>
<tr>
<td>Slate palette, little used</td>
<td>Slate palette, little used</td>
</tr>
<tr>
<td>Stone and shell jewelry, rare and simple</td>
<td>Stone jewelry, rare and simple, shell jewelry more common, but simple</td>
</tr>
<tr>
<td>Figurines, rare</td>
<td>Figurines, rare</td>
</tr>
</tbody>
</table>
Limited irrigation canals, probably not the same for La Playa, unknown for other Trincheras sites

Subsistence primarily collecting, probably the same for La Playa, unknown for other Trincheras sites

By way of elaboration on this basic list a number of things should be mentioned. The pottery of the two complexes is more similar than is indicated by the summary statement in the list. The name Trincheras Purple-on-red obscures the fact that this is actually a brown ware, the red coming from an added slip. Other parallels include the use in both complexes of geometric design elements, broad lines, band patterns, and rim lines. All of the most frequently occurring Trincheras design elements, such as regular sawteeth, sawteeth pendant from the rim, cross-hatched squares and diamonds occur on Desert Hohokam types or closely related River Hohokam types of the Santa Cruz drainage.

Pit ovens have not yet been reported from Desert Hohokam sites, although the outdoor hearths of Valshni Village (Withers 1941: 24-5) are generally similar. The use of pit ovens is known ethnographically among the Papago who now inhabit the Desert Hohokam region (Castetter and Underhill 1935: 15).

Trincheras occur in the Desert Hohokam region fairly frequently. Sauer and Brand (1931: 101-2) report one about
four miles southeast of Indian Oasis on the Papago Reservation, and Hoover (1941: 230) list six others in Papaguéría, extending as far north as Hickiwan on the Sells Papago Reservation. An examination of the survey files of the Arizona State Museum disclosed 20 more sites of a similar nature in southern Arizona.

In summary then, there are numerous parallels between the Desert Branch of the Hohokam and the Trincheras Culture. The obvious close similarity of these two complexes seems to warrant the acceptance of Haury's suggestion (1950: 548) that the Trincheras Culture should be brought into the general Hohokam picture, or more specifically, should be considered another manifestation of the Desert Hohokam. Numerous aspects of this relationship remain to be worked out, but the general picture seems clear enough.

A question which arises is that of the Desert Hohokam Culture having been explained as an adaption to an arid environment (Haury 1950: 114), that of desert Papaguéría. This is not the case for the Trincheras Culture, however, as this complex has its center in the Magdalena and Altar River drainages, two of the larger rivers of northwestern Sonora. The environment is not arid along these rivers and, in fact, is quite comparable to that of the River Hohokam. Still, the material remains of the Trincheras Culture and the Desert Hohokam are quite similar, as pointed out above. As
it is by these remains that archaeological relationships have to be made, they are in this case considered to be of more importance than the environmental setting. There may well have been other factors which influenced the production of similar material assemblages, and although these are not now known, they certainly form problems to be considered in future work with the Trincheras Culture.

Mogollon parallels were mentioned above as being present in the Trincheras Culture, and this holds as well for the Desert Hohokam as a whole. The most important of these parallels, in terms of cultural relationships, is pottery. The brown pottery of the Trincheras Culture has long been recognized as one of these parallels, and has in fact been used as a criterion for grouping the Trincheras Culture with the Mogollon Culture. Colton, for instance, has lumped Trincheras ceramics with the Mogollon, as the Trincheras Series of the Mogollon Brown Wares (1955: 6). Another example of this is to be found in the publication Seminars in Archaeology: 1955. The seminar group which considered the American Southwest as a problem in cultural isolation presented maps showing the area of distribution of the three major Southwestern cultures at time periods ranging from A.D. 900-1500. The Trincheras Culture is indicated as being in the Mogollon area in all of these maps (Jennings 1956, Fig. 1).
Another trait of pottery manufacture in which the Trincheras ceramics are similar to Mogollon is polishing over the decoration (Hawley 1950: 103-6). It was noted in the description of Trincheras Purple-on-red that a majority of the vessels were polished over the decoration, a process which tends to obliterate the specular quality of the specular iron paint. Another technique which may be related in the two ceramic complexes is the presence of texturing. This is seen most often on the exteriors of Mogollon utility vessels, such as Alma Scored or Alma Incised (Hawley 1950: 106). Trincheras Purple-on-red jars and seed jars often are scored on the interiors, probably with a bundle of grass. Vessel shapes are of little help in this comparison, as Trincheras shapes are few and have parallels in most of the surrounding cultures. A general similarity with the Mogollon (Hawley 1950: 103-6) can be seen in the few and simple forms of Trincheras ceramics, as opposed to the quantity and variety of Hohokam shapes (Gladwin and others 1937, Figs. 64-8, 71-5). Designs, as noted above, have their closest similarities to those found on the ceramics of the Desert Hohokam and the River Hohokam of the Santa Cruz drainage.

A less usable criterion of relationship, due to its widespread distribution, is that of inhumation. The Mogollon type of disposal of the dead is typically inhumation, usually flexed (Wheat 1955: 71), whereas the River Hohokam
are noted for the practice of cremation (Gladwin and others 1937: 91). It will be remembered that both cremation and inhumation were present at the La Playa site, and that the usual thing for the Desert Hohokam of Papaguería was inhumation (Haury 1950: 547).

Other parallels with the Mogollon are noted in the charts (Tables 3-7) in which minor objects of the material culture are compared. Many of these artifacts have such a widespread distribution, not only in Mogollon and Hohokam sites, but over most of the Southwest, that their usefulness for indicating relationships is not great. Wheat (1955) in his summary of Mogollon culture prior to A.D. 1000 notes only a few artifacts which are typical of the Mogollon culture, and which do not occur or occur only infrequently in other Southwestern archaeological complexes. The characteristic Mogollon traits in this list which also occur at La Playa include the tubular stone pipe (Wheat 1955: 124-5), the ground stone maul (Wheat 1955: 122-3), and the diagonally-notched, medium-sized projectile point (Wheat 1955: 127). Both the shallow and deep corner-notched points from La Playa bear similarities to this Mogollon form. In addition, the only recorded instance of stone digging tools seems to be in the Mogollon area where they are present in the Black River branch during Mogollon 1, and in the Mimbres branch during Mogollon 4 (Wheat 1955: 120). These also are present
General similarities with the La Playa site are to be seen in the lack of complexity of most of the Mogollon minor objects of material culture, as opposed to the River Hohokam elaborations, in carving for instance. In this trait the Trincheras material also parallels that of the Desert Hohokam.

The above list of parallels of the La Playa remains with those of the Mogollon culture, while in many cases of a general nature, indicate the possibility of Mogollon influence in the Trincheras Culture. Whether this indicates a generalized Mogollon base out of which the Trincheras Culture developed, or the effect of trade relations is unknown.

Attention is called to these parallels to indicate a problem which should be taken into consideration during future work with the Trincheras Culture. Even with this list of Trincheras and Mogollon similarities, the strongest relationships of the Trincheras Culture remain with the Desert Hohokam, and for the present it is considered as being another manifestation of this Hohokam branch.

Mention was made in the introduction to this report of a few traits which can be considered as indicators of contact between the Trincheras Culture and Mesoamerica. By way of conclusion to this chapter on comparisons it seems desirable to discuss this problem a bit more thoroughly.
The possibility of Mogollon influence in the Trincheras Culture was pointed out above, especially in reference to Trincheras ceramics. An alternative explanation to that of Mogollon influence comes from a perusal of the literature on Western Mexico. Lister (1955) has recently reviewed the data from this area, and has suggested some broader correlations in the miscellaneous detail which has accumulated from archaeological work in this region. Most of the following statements are drawn from his monograph. Western Mexico is defined as including practically all of the state of Sinaloa, as far north as the Rio Fuerte; the southwestern portions of the states of Durango and Zacatecas; the states of Nayarit, Jalisco, Aguascalientes, Colima, Michoacan, and Guerrero; and the western portions of the states of Mexico and Guanajuato (Lister 1955: 4).

Turning now to the traits which were listed above as being of possible Mogollon derivation in the Trincheras Culture, we find that nearly all of them are present in Western Mexico. Brown ware ceramics predominate in Western Mexico, occurring in some of the earliest complexes so far recognized, and continuing in use to the conquest. Red-on-brown decorated wares are found all over Western Mexico from Guasave, Sinaloa, on the north to Texmilincan, Guerrero, on the south (Lister 1955: 24-5). Polishing, as a ceramic technique, also occurs in the area, as is exemplified by El
Taste satin, a type bearing a high polish inside and out, from Chametla, Sinaloa (Kelly 1938: 26). Texturing occurs on another type from Chametla, El Taste rough, which has an unsmoothed surface, occasionally coarsely rasped (Kelly 1938: 27).

Disposal of the dead, in Western Mexico, varies widely from region to region, but flexed and extended inhumations were the most common type in western Nayarit and lowland Michoacan (Lister 1955: 48). Similarities in the minor objects of the material culture were noted in the comparative charts for the Trincheras Culture and Guasave, Sinaloa (Tables 3-7). In general, the same sort of similarities are seen over much of Western Mexico, although to date no one complex has been reported which might have served as a point of origin for the traits as a group. The recently excavated site of Amapa in Nayarit is a possibility; at least the preliminary statement lists a fair number of traits which are shared with the Hohokam Culture of southern Arizona (Meighan 1959: 1-7). Any definite statements on this possibility will, of necessity, have to await more detailed publication of the results.

This information indicates an alternative hypothesis to that of Mogollon influence in the Trincheras and Desert Hohokam complexes. Lister (1955: 27) points out that there is a more or less continuous distribution of red-on-brown
wares from the Hohokam and Mogollon regions of southern Arizona to Western Mexico. According to the present chronologies, these wares occur somewhat earlier in both the Hohokam and Mogollon Cultures than they do in the region to the south. Temporal placements of archaeological manifestations in Mexico are being constantly revised with a tendency for more time depth, however, and it is probable that the technique will prove to be earlier in Mexico than in the Southwest (Lister 1955: 27).

On this basis then, the following suggestion can be made. The technique of decorating brown ware ceramics with red paint developed in Western Mexico and spread north at an early time into the Southwest. On this red-on-brown base the distinctive pottery types of the Mogollon and Hohokam developed as a result of various environmental and cultural factors. The Trincheras ceramics also had their base in this early widespread technique, again developing distinctive characteristics, but coming under the Hohokam sphere and receiving much influence from this development.

Other influences on the Trincheras Culture may have come from the Mogollon, as exemplified by the pottery techniques of texturing and polishing over the decoration. In relation to these latter techniques, however, there is the possibility of an origin in Western Mexico. Texturing is known in this area (Kelly 1938: 27), and polishing occurs
(Kelly 1938: 26), although no mention of polishing over the decoration was found in the literature on Western Mexico. Whatever the answer to this latter problem, it is obvious that the general red-on-brown technique continued in the Trincheras area, but was slightly modified in this case by the use of local materials which produced a predominate purple-on-red type.

This suggestion of an origin in the Western Mexican area for the Trincheras Culture is offered only as a possibility. Further statements on these problems will have to await work in the intervening areas. A complex which appears to be especially important in these relationships is the Huatabampo Culture of southern Sonora. The Huatabampo Culture is known only from surveys, but these indicate the complex has parallels both with the Southwest and Mesoamerica (Ekholm 1939: 10). If the Trincheras Culture did have its origin in this development most contacts apparently were not maintained, as practically none of the fairly numerous Mesoamerican-like items which occur in River Hohokam sites appear in those of the Trincheras Culture.

A few other Mesoamerican parallels with the Trincheras Culture include the general similarities with Kelley’s (1956: 132-3) Loma San Gabriel occupancy in northern Durango and southern Chihuahua, and the possible Mexican origin of earthen mounds (Jennings 1956: 95-6). Of the minor objects
of the material culture, the single specimen which can be suggested as late Mexican in origin is the modeled ceramic spindle whorl.
### Table 3
Comparisons: Artifacts of Clay

<table>
<thead>
<tr>
<th>Category</th>
<th>La Playa</th>
<th>Valshni Cave</th>
<th>Snaketown</th>
<th>Tres Alamos</th>
<th>Gleeson</th>
<th>San Simon</th>
<th>Sierra Madre Caves</th>
<th>Guasave</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figurines</td>
<td></td>
<td></td>
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<td></td>
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<td>Category 1</td>
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<td>P</td>
<td>P</td>
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<td></td>
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<td>P</td>
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Table 6
Comparisons: Artifacts of Shell

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Table 7
Comparisons: Artifacts of Bone and Antler

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SUMMARY AND CONCLUSIONS

The present report offers a description of the La Playa archaeological site, one of the larger sites of the Trincheras Culture, a widespread archaeological complex in northern Sonora, Mexico. The Trincheras Culture, in its most typical form, ranges from the Sonora River west into Desert Papaguería, and south from approximately the present international border for an undetermined distance, but at least to Banamichi, Sonora. It centers in the drainages of the Magdalena and Altar rivers. Characteristic of the complex are terraced hillside sites or trincheras, and rock enclosures or corrals. The house type is not yet known, but small circular structures of dry-laid masonry on the terraced hillsides apparently represent houses. The predominant painted pottery type is Trincheras Purple-on-red. Intrusions of this type into dated sites of southern Arizona indicate a time span of from A.D. 800 to 1100 for the Trincheras Culture.

The La Playa site occupies a large flat about midway between Santa Ana and Altar, Sonora, on the old road between the two villages. Paleo-ecological studies indicate that, when occupied, the site was possibly a marshy area, comparable to the cienegas of southern Arizona. People were per-
haps drawn to the site by the quantity of wild plant life growing in the moist area which could be collected for food. A seasonal occupation is implied by this interpretation; the Trincheras people coming to the site as certain plants ripened each year. This is supported by the complete lack of houses on the flat, and by the great size of the site, approximately two miles in length, east-west, by one and one-half miles in width, north-south. The absence of houses implies a lack of preparation for an extended stay. It is doubted that there were enough people in the region to have at any one time occupied such a great area as the La Playa site, and consequently the site is interpreted rather as representing an area to which people came each year as plant crops ripened, to gather and prepare food, camping in various spots over the flat until the limits seen today were reached.

Certain of the plants were gathered and cooked in basin-shaped pit ovens with the aid of heated rocks. This was apparently the most frequent method of preparing food, and the eroded remains of these ovens are to be seen over the entire site today. Earthen mounds were constructed in a restricted section at the eastern end of the site, perhaps to have a dry living surface above the constant dampness of the marsh. Pit ovens dug below the floors of the mounds were present. On the north, the site is bounded by
the Cerros Boquillas, and in these hills two sets of terraces are to be found. Perhaps these were utilized as lookouts and refuges to which the people could retire when attacked. Traces of possible houses are present on both sets of terraces.

Trincheras Purple-on-red is the most commonly occurring painted pottery type at the La Playa site. This is a brown ware, which is occasionally slipped red, is painted with a purple paint manufactured from specular iron, and is often polished over the decoration. Deep interior scoring, probably accomplished with a bundle of grass, is usually present on jars and seed jars. Accompanying ceramics include Trincheras Polychrome and plain brown wares. Intrusive sherds are not common, and those found are only tentatively identified as Santa Cruz Polychrome and Rillito or Rincon Red-on-brown. Other ceramic artifacts include a few figurines, spindle whorls, a solid clay bowl, and miscellaneous worked sherds.

Stone artifacts predominate among the non-ceramic specimens. In large part this is due to the abundant and readily available supply of stone in the Cerros Boquillas which was suitable for the manufacture of stone artifacts. Chipped, ground, and rough stone artifacts all occurred. Projectile points, basin-shaped metates, and one-hand manos were the most frequently occurring types. The stone assem-
blage as a whole has a definite early cast, but this is be-
lieved to be an example of the late retention of early forms,
rather than evidence of an early occupation. In part, this
may be explained by the specialized use of a number of the
tools for gathering wild plant foods.

Shell artifacts consist primarily of ornaments, the
only utilitarian objects of shell being a few needles. Sites
in the Punta Peñasco region along the coast of the Gulf of
California to the west may represent temporary camps of
Trincheras shell gatherers, who collected primarily Glycy-
meris, Vermetus, Olivella, and Cardium shells for ornament
manufacture. These shells were carried back to the home
sites and processed into artifacts with the aid of stone
reamers and grooved stones. The quantity of residue from
the manufacture of shell ornaments, especially Glycymeris
bracelets, indicates that the La Playa site was a center for
the manufacture of these objects. Bracelets may have been
manufactured for trade on north into the Hohokam region of
Arizona. Perhaps the abundant supply of wild food plants
at the La Playa site offered leisure time for the production
of these artifacts during the times when plants were ripe.
A division of labor with the women gathering and preparing
plant foods, and the men manufacturing shell and stone arti-
facts can be suggested.

Artifacts of antler and bone occur, but they are few
in number and simple in type. They can be classified in three groups: splinter awls, antler flakers, and drilled antler sections. An interesting occurrence in the unworked bone specimens collected for the purpose of identifying the types of animals used by the inhabitants of La Playa is that of a marine mammal from the Gulf of California. Other animals utilized by the Trincheras people all occur in the area today. Most were probably hunted for food.

Comparisons with archaeological complexes in surrounding areas indicate that the closest relationships of the Trincheras Culture are with the Hohokam Culture of southern Arizona, and especially with the Desert Branch of this complex. These relationships seem close enough to warrant placing the Trincheras Culture in the Hohokam framework, and considering it to be another manifestation of the Desert Hohokam. For the most part, this placement is based on La Playa data, as this is the only Trincheras site from which detailed information is so far available. The placement should be considered tentative, as it is based on only this single site. Also, as the site seems to represent a somewhat specialized occupation, it may not be typical of the Trincheras Culture as a whole.

A number of elements, including brown ware pottery polished over the decoration, inhumations, and minor objects of the material culture, such as tubular pipes, indicate the
possibility of Mogollon influence in the Trincheras Culture. A perusal of the literature on Western Mexico indicates an alternative explanation to that of Mogollon influence. Many of the traits listed above as being of possible Mogollon origin have counterparts in Western Mexico, and perhaps the Trincheras Culture can be considered as developing out of the Western Mexican region, contacts were apparently cut off after the initial early influence. Very few of the many Mesoamerican-like objects present in the River Hohokam Culture are to be seen in Trincheras sites, and this is apparently not the corridor through which these traits passed in their northward movement.
APPENDIX A

GEOLOGIC RECONNAISSANCE OF THE LA PLAYA AREA

By

Fred Pashley

The primary purpose of this investigation was to determine the geologic features of the Cerros Boquillas, which lie on the north edge of the archaeological site of La Playa. One day was spent examining the rock types and the geologic structure of this range.

A search of the literature revealed that there are no publications on the geology of the La Playa area. My examination revealed that the mountain range is composed mainly of red shale, red and green siltstone, graywacke conglomerate, and thin beds and lenses of limestone and limestone conglomerate. All the rocks dip uniformly to the southwest at an angle of 45 degrees and have a strike which averages N45W. The rocks show the effects of strong folding which resulted in a blocky, angular fracture pattern in the shale and siltstone, and which stretched the pebbles in the conglomerate. Veins and pods of crystalline quartz are common.

The age of the rocks is not certain. However, they resemble rocks exposed along the road to Santa Ana which,
according to Cooper and Arellano (1946: 608), contain Lower Cretaceous fossils at a few localities. They describe these rocks as consisting of a thick sequence of yellow, greenish, and reddish shale with thin limestone lenses, reddish conglomerate, and red sandstone containing silicified wood and a few marine fossils.

Alluvial terraces are not a prominent feature of the area although there are several isolated remnants of an older and higher surface. These remnants are covered by a mantle of lag gravel which is lacking from lower levels in the area. Much of the site is currently undergoing erosion which is rapidly removing large amounts of soil and is cutting deep arroyos.
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