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UNIVERSITY OF ARIZONA



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Woodward, Arthur  
The Grewe site, Gila Valley,  
Arizona.

## ANNOUNCEMENT

In presenting the following paper which forms the first of a projected group of mimeographed pamphlets setting forth some of the interesting results obtained by the Van Bergen-Los Angeles Museum Expedition to the Grewe site in the Gila Valley, Arizona, we have much pleasure in gratefully acknowledging the valued contribution of both time and funds made by Dr. Charles Van Bergen that made this Museum Expedition and the contribution based upon it possible. It is confidently believed that through his generosity a very material contribution to our knowledge of the primitive inhabitation of the Southwest has been made by this splendid, privately equipped field expedition.

It is hoped that the Museum will be able from time to time as material and opportunity offer to publish a Museum series of "occasional papers" of a widely varied nature which will be numbered serially as issued, irrespective of the department from which they may originate, the object being to make available to a limited number of especially interested persons and institutions without the delay incident to formal publication, certain results of museum activities and interests which for one reason or another do not fit into the regular series of "publications" issued by the Museum.

Accurate reference to any "publication" issued in the series of "occasional papers of the Los Angeles Museum" can be made by simple reference to the page and publication numbers only; thus, abbreviated reference to the present pamphlet, the first of the series, would read Occ. P. L.A.M. No. 1, page\_\_\_\_, Fig.\_\_\_\_, which will distinguish it from reference made to the Museum's "publication series".

It is intended that each pamphlet to be issued in the series will be a complete publication irrespective of its contents, form, method of publication, etc.

Wm. Alanson Bryan,  
Director, Los Angeles Museum

LOS ANGELES MUSEUM OF HISTORY SCIENCE AND ART

OCCASIONAL PAPERS

NUMBER I

THE GREWE SITE

GILA VALLEY, ARIZONA

(Van Bergen-Los Angeles  
Museum Expedition)

by

Arthur Woodward

To my compadre Luis Schellbach  
with best wishes  
Art Woodward.

LOS ANGELES MUSEUM  
DECEMBER 1931

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#### ACKNOWLEDGEMENT

The members of the Expedition are deeply grateful to Mr. Charles H. Grewe owner of the land for his kindness and courtesy in allowing the work to be carried out. Likewise we are also indebted to Mr. Frank Pinkley, Superintendent of Southern Monuments, Casa Grande National Monument, for his many valuable suggestions and to Dean Byron Cummings, University of Arizona, Tucson, for his friendly cooperation in archaeological matters. Similarly we are indebted to Mr. Harold Gladwin and Mrs. McCurdy of Gila Pueblo, Globe, Arizona for their generous dispensation of information and hospitality shown to members of the party visiting Gila Pueblo.

#### PERSONNEL

The notes from which this and projected papers on the same subject were compiled were made by members of the Expedition while in the field. Dr. Charles Van Bergen, Honorary Curator of American Archaeology at the Los Angeles Museum sponsored the expedition and was in the field a great part of the time. Mr. Irwin Hayden was foreman in charge of the field party. He was assisted by Mr. Ben Wetherill, Julian Hayden, Milton Snow, photographer, Alex Keleman, and a number of laborers.

Restoration and preparation of specimens in the laboratory was carried on by Miss Gloria Widmann and Mr. Harry Pray. General technical supervision of field and laboratory work, as well as historical research was under the supervision of Arthur Woodward, Curator of History, Los Angeles Museum.

## EXCAVATIONS ON THE GREWE SITE

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Foreword

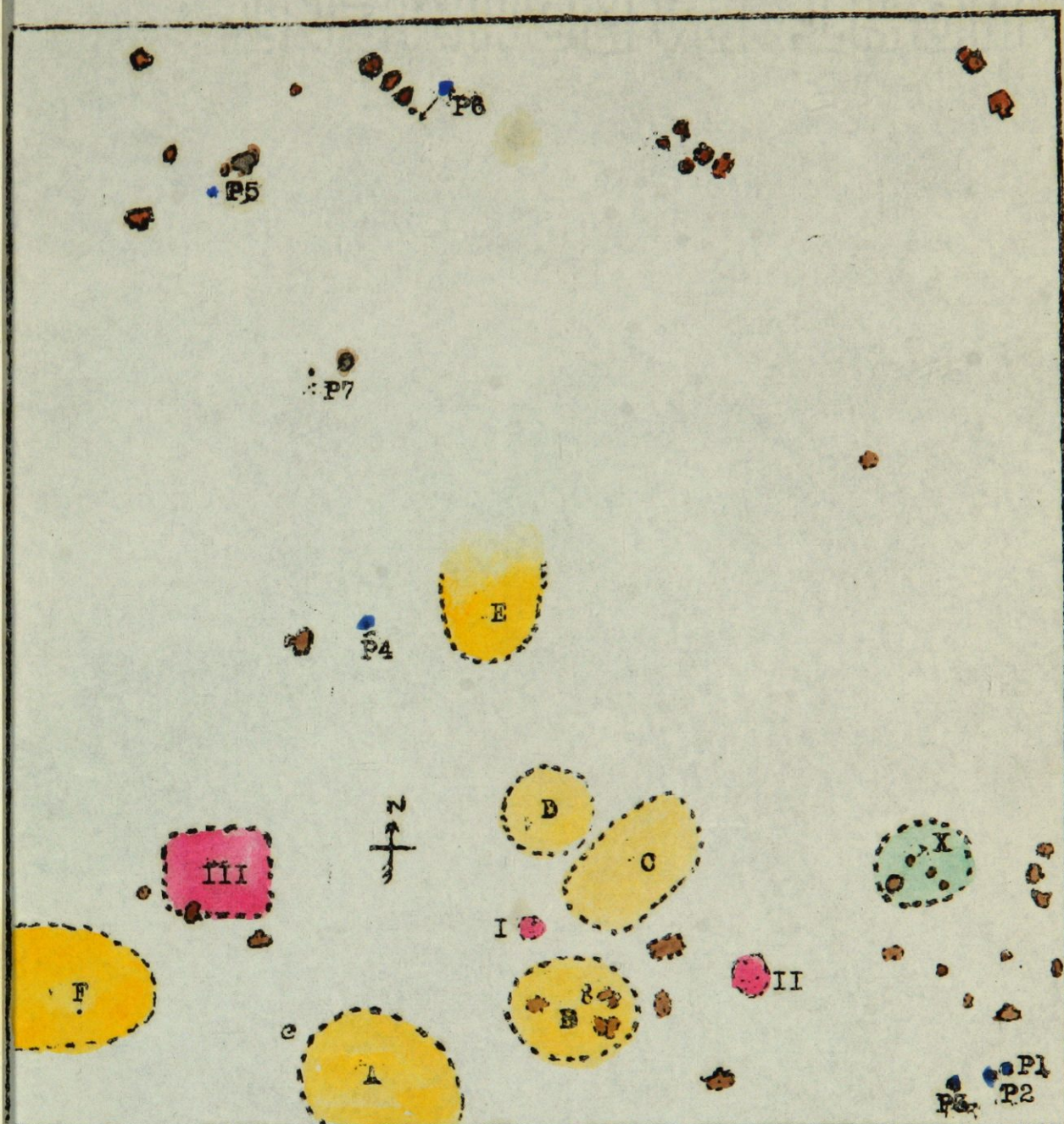
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Following certain recommendations made by members of the conference held at the Laboratory of Anthropology, Santa Fe New Mexico, September 2, 3, 4, 1931, to the effect that papers of interest to students of archaeology and ethnology should be published in one form or another, suggesting that when funds were lacking for a more elaborate **style** of publication mimeographed pamphlets be issued - this brief account offered as the first of a projected series of Occasional Papers to be issued, deals with the excavations made by the Van Bergen-Los Angeles Museum Expedition on the Grewe Site, Gila Valley.

Necessarily, such mimeographed publications must fall short of the more expensively printed works. Illustrations, if mimeographed, must be of the simplest nature and correspondingly inferior to half tone cuts. However, in the present paper, we shall endeavor to present as concisely and accurately as possible, the major, salient facts of the excavation work, without attempting a detailed discussion of individual house sites or specimens. Furthermore, it is our purpose to follow this bulletin with a series of papers, to be issued in similar form, the subject matter of the individual papers to deal with various phases of the work, including types of houses, pottery, artifacts, etc. Since these papers will conform to a uniform size, it will be a comparatively simple matter to bind the series together, thereby incorporating all of the information in one volume.

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Sketch Map of Grewe Site

Trash Mounds...A,B,C,D,E,F

Cremation Areas I, II, III

Offertory Area ....X

Pits..... 1,2,3,4,5,6,7

House sites indicated but not numbered

## THE GREWE SITE

In the latter part of February, 1930, work was begun on the Grewe Site and carried on until early in May of that year. Operations were suspended during the summer months but were resumed in October. The excavations were completed early in February, 1931.

## LOCATION

The site in question constituted some thirty acres, a portion of a larger acreage owned by Mr. Charles H. Grewe, resident of Arlington, Washington, in the Gila Valley, Arizona.

The tract was situated one mile east of the Casa Grande National Monument ruins. It was bounded on the west by the Phoenix-Tucson branch of the Southern Pacific Railway and on the north by the main Coolidge-Florence highway. Cotton fields of neighboring ranches bordered the eastern and southern sides of the area.

It was upon this particular site that Mr. Harold Gladwin did some test work in 1927, referring to it as "Operation No. 4".<sup>1</sup>

Our attention was drawn definitely to the site by the report of Mr. Alex Keleman, that local townspeople were excavating on the spot and were recovering a great deal of pottery. This in itself was not important since almost any sherd covered area in the region yields pottery. However, the fragments of a small, flare rimmed bowl were brought to us and we were assured this was the type the people had been finding. Consequently a preliminary examination of the entire site was made which resulted in the leasing of the entire thirty acres by Dr. Van Bergen in order that we might work the area at our leisure and without disturbance.

## TOPOGRAPHY

In the main the site was fairly level, with a few, natural elevations and having a gentle northerly slope toward the Gila river which was but a scant mile, or mile and a half north of the tract.

When we began operations on the site the surface was masked by a thick growth of creosote bushes (Larrea mexicana) which made observations difficult. Eventually the entire area was cleared of the brush and work progressed more smoothly. The only elevations of any height or size were the six trash mounds of which three were fairly noticeable.

In places the earth was channeled with narrow, shallow washes which, owing to the gentleness of the slope had not cut deeply into the soil. Consequently we did not find these of any great use to us as indicators of surface or

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1. Gladwin, H. Excavations at Casa Grande, Arizona - Southwest Museum Papers, Number 2 - P. 141. Los Angeles, 1928

sub-surface clues to deposits in the area.

The soil itself was of a sandy loam, varying in depth from a few inches to several feet. Underlying this top soil was an irregular deposit of caliche or desert limestone.

Caliche is a Spanish term, the definition of which is, "pebbles burnt in a brick; crust of lime which flakes from a wall; (Peru and Chile) native saltpetre."

However, the caliche to which we refer in this paper does not strictly fit any one of the foregoing definitions, but since the term is in common usage and accepted by geologists we shall retain it. The caliche in the Gila is a calcareous deposit apparently underlying the floor of the immediate drainage area surrounding the Grewe Site and extending for several miles in all directions. The exact cause of this deposit is debatable and has been the subject of several papers.

One authority<sup>2</sup> refers to the caliche saying:

"In the flood plains of the Gila and Colorado rivers and in certain clay flats or playas in the interior valleys there are very fine silts or clays but the major portion of the fill in the valleys is sand and gravel, commonly very coarse. Much of it is poorly assorted, consisting of coarse sediments in a clayey matrix. The surface layers in most of the valleys contain silty soil more or less mixed with gravel. This soil where it has been properly irrigated has proved to be highly productive.....

In almost all the fill that is indurated to any extent the cement is a calcareous material called 'caliche', 'cement' or 'hardpan'."

Lee<sup>3</sup> has described the mode of occurrence of caliche and discussed the theories as to its origin. He concludes that the caliche in the Salt River valley, which is essentially similar to that in the lower Gila region, has been formed in part by the deposition of carbonates and other salts held in solution in the ground water, and in part by the evaporation of the water percolating downward from the surface.

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2. Ross, C.P., The Lower Gila Region, Ariz., U.S.Geol. Survey Water Supply Paper 498. P.25, Washington, D.C. 1923

3. Lee, W. T., Underground Waters of Salt River valley, Ariz. U.S.Geology Survey Water Supply Paper 136, pp. 107-111 Wash. D.C., 1905



On the old road across the Gila Bend Mountain, west of Woolsey Tank, are gravel beds with a calcareous cement which has set so firmly as to form a hard though friable rock. These are exceptionally indurated, but beds of caliche so hard that it is very difficult to penetrate with pick and shovel, are common in a number of places in that region."

The caliche to which Lee refers in this last paragraph is the type which was most commonly encountered on the Grewe Site. However, in the south western portion of the tract, there was a variation of the caliche, in that it was more on the order of the more commonly known "hardpan". These quotations on the nature of these caliche deposits are given principally because this same caliche seems to have played such an important part in the cultural history of the Hohokam, architecturally and otherwise.

Aside from the trash mounds which rose above the surface of the surrounding area and were easily discerned as artificial mounds, all other indications of a cultural occupation were completely buried. There were none of the low, regularly shaped mounds, or patches of disintegrated caliche appearing on the surface, denoting the remnants of heavy walled buildings which are so familiar on later sites of this same people.

In the south and south western portions of the tract, the top soil was quite shallow, the caliche being near the surface. In the south east corner the soil deepened. This strip of shallow soil extended east to west in an irregular band across the site some five hundred feet wide. On the northern end of the area the top soil deepened and the caliche beds dipped downward and were encountered further beneath the surface. This irregularity in the sub-surface deposits made the work a bit more difficult and did not permit generalities in a discussion of the former surface level of the site.

The complete burial of all house sites and cremation areas would appear to argue a deposition over the entire surface, rather than an erosion which normally occurs, yet there were certain indications which made it seem probable that in spite of the evidences of deposition, a certain amount of erosion had likewise taken place. It is quite likely that both suppositions are correct.

Windstorms are frequent and violent in the Gila valley during the Spring and Fall. At such seasons a great quantity of windblown earth moves across the valley floor, generally from west to east. There is no valid reason to suppose that such storms did not blow in pre-historic times. Furthermore, judging from the evidences encountered, the Hohokam were agriculturists and had cleared fields near their dwellings in which they raised their cotton, corn, squash and possibly other plants. Consequently the wind having free play across such fields would account for a certain amount of aeolian deposit which would be heavier at certain seasons of the year than at others.

The action of the wind would be somewhat less in the more heavily brushed areas, yet even in such places this aeolian deposit is noticeable even today. Often one sees the light, sandy soil heaped at the base of a creosote clump or mounding over a fallen bush and in the open areas, after a severe storm, the ground is swept clean of the loose earth.

An instance of how quickly an abandoned house might be filled by a wind blown deposit was observed by the author during a field trip into the Gila during the Spring of 1929.

At that time work was being done on a small compound site. A room had been cleared, the floor swept absolutely clean. During the night a storm arose and the floor was covered to a depth of four or five inches with wind blown earth when we went into the field the next morning.

Of course, the situation in this case was ideal, the entire area surrounding the site had recently been ploughed and the top soil was very loose. On the other hand, even in those places where the ground has not been prepared for agriculture, a tremendous amount of earth is moved each time one of these violent wind storms occurs.

Consequently it is difficult to estimate by such deposits, frequently aided by man made trash layers in abandoned structures, the approximate length of time that has elapsed since that particular site was abandoned. This situation of covering and uncovering also offers other problems to the archaeologist, in that house floors, cremation areas, etc., probably contemporaneous with similar sites of occupation within an area, may be found covered to a depth of two or three feet, perhaps more, and the others of the same period may be within a few inches of the surface. Water laid deposits played but a slight part in the Grewe Site, the drainage was gentle but favorable, consequently the earth did not harden to a rubber-like consistency and the sub-surface water drained naturally.

### TRASH MOUNDS

As intimated in the foregoing section, the only visible cultural remains on the site were a series of trash heaps varying in depth and diameter.

These trash mounds were irregularly scattered over the tract, the largest ones being in the southern end. For the sake of convenience, the major deposits, those which were readily identifiable as deposits of rubbish have been labeled A, B, C, D, E, and F.

As far as we were able to determine by cross sectioning and the removal of piers in various portions of the mounds, these heaps were of the same general consistency of earth, ashes, pot sherds, broken and burned stones, fragments of shell artifacts and a sprinkling of bird and animal bones.

Although every effort was made to determine the methods by which these mounds had been made and a close watch was kept in hopes of obtaining stratigraphic evidence which might aid in the establishment of a time sequence of pottery types, it may honestly be said at this time that no valid results were obtained. Approximately nine tons of sherds and artifacts were removed from the site. In this entire mass of material no appreciable or type differences were noted in the pottery fragments recovered from the trash heaps, house sites, cremation and offertory areas. As might be expected, there are the usual, probably individual variations in vessels, such as crudeness of decoration or manipulation of the clay, but no radical departures in vessel forms or application of design.

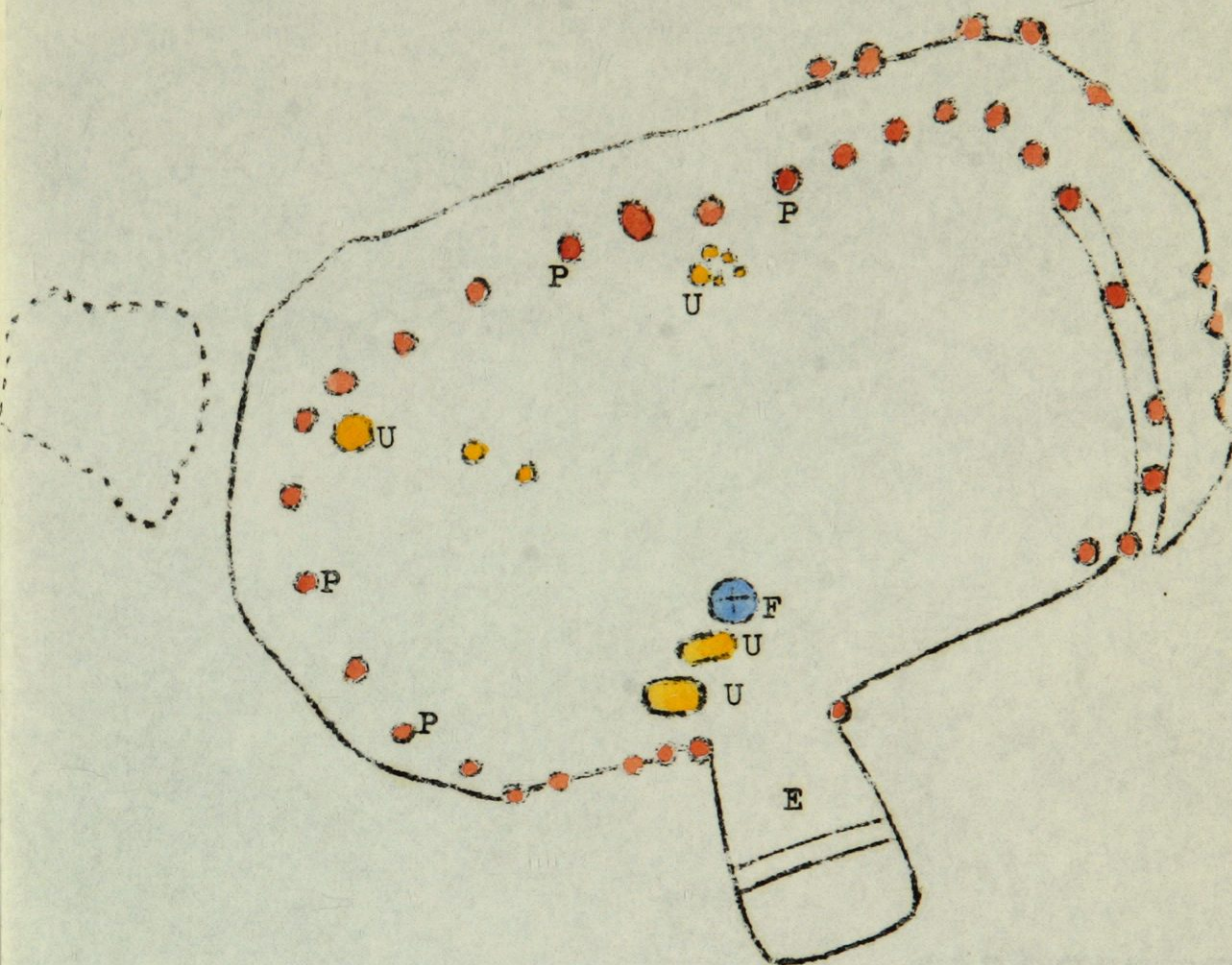
It was also our hope that we might possibly discover some correlation between certain groups of houses and certain trash mounds or between trash mounds and burial areas but this hope faded as the work progressed.

There is a possibility that at one time, there may have been such evidences available in the mounds. However, in the passage of the years, burrowing rodents have been ever active in these relatively soft trash deposits. They have churned the mounds from top to bottom. One cannot walk over the surface of the debris without sinking unexpectedly into these subterranean galleries. In cutting through the mounds dozens of old burrows, long since evacuated, many of them filled with loose trash, are plainly visible on the walls of the cut.

At this time while discussing the trash mounds and general features of the Grewe Site, it may be well to note, that intensive as the operations were in an effort to glean every scrap of information from this area, it is the belief of the author that the Grewe Site as we know it with its main trash mounds, fifty house sites, three cremation areas and one offertory area, does not comprise the whole of the habitable area in this one cultural center. There are certain evidences in the ploughed fields east, west and south which seem to indicate an extension of the occupied area in those directions. At present, the surface indications are practically obliterated. The trash mounds which formerly existed have been leveled and spread over the fields. It is possible that an intensive search in those fields would bring to light more house ruins and the remnants of trash heaps as well as burial grounds which would add to the story.

Since it is our intention to discuss the various features of this site in subsequent papers, a complete, analytical examination of the trash mounds will not be undertaken in this paper.

Fig. 1



TYPE A

F - Fire Pit

E - Entrance Way

P - Post Holes

U - Holes unknown usage



The salient points to be remembered about these mounds are:

1. No definite strata appeared in any of these mounds.

2. There did not seem to be any appreciable change in the nature of the pottery found at the different levels in the mounds nor did the pot sherds collected from the mounds differ radically from the pottery found in burial pits and house sites.

3. There were no heavy ash or charcoal strata in the mounds which might indicate that these mounds had been built of pyral deposits or that the mounds had been used as the site of crematories as earlier observers have presumed they were used.

4. There was no apparent connection between any of the trash mounds and any single house, group of houses, cremation areas or offertory area.

#### HOUSE TYPES

Scattered over the site were found the remains of fifty structures which had served, presumably, as habitations - sun shelters, and possibly ceremonial enclosures.

When operations were begun not a single house site was visible on the surface, nor were there any indications which might lead one to think that habitations had ever existed in the area. In fact the utter absence of all such traces led Mr. Gladwin to remark "...persistent search has failed to reveal any trace of the walls of the houses with which these mounds must, at one time, have been associated."<sup>4</sup>

The houses were located by driving a series of test holes through the soil until floor levels were struck or the occupation level was passed and the test showed virgin soil. In this manner fifty house floors were encountered and the habitations cleared.

All of the houses were single units. The dwellings did not appear to have been grouped systematically nor were they oriented in any particular direction. The entrance ways faced all directions.

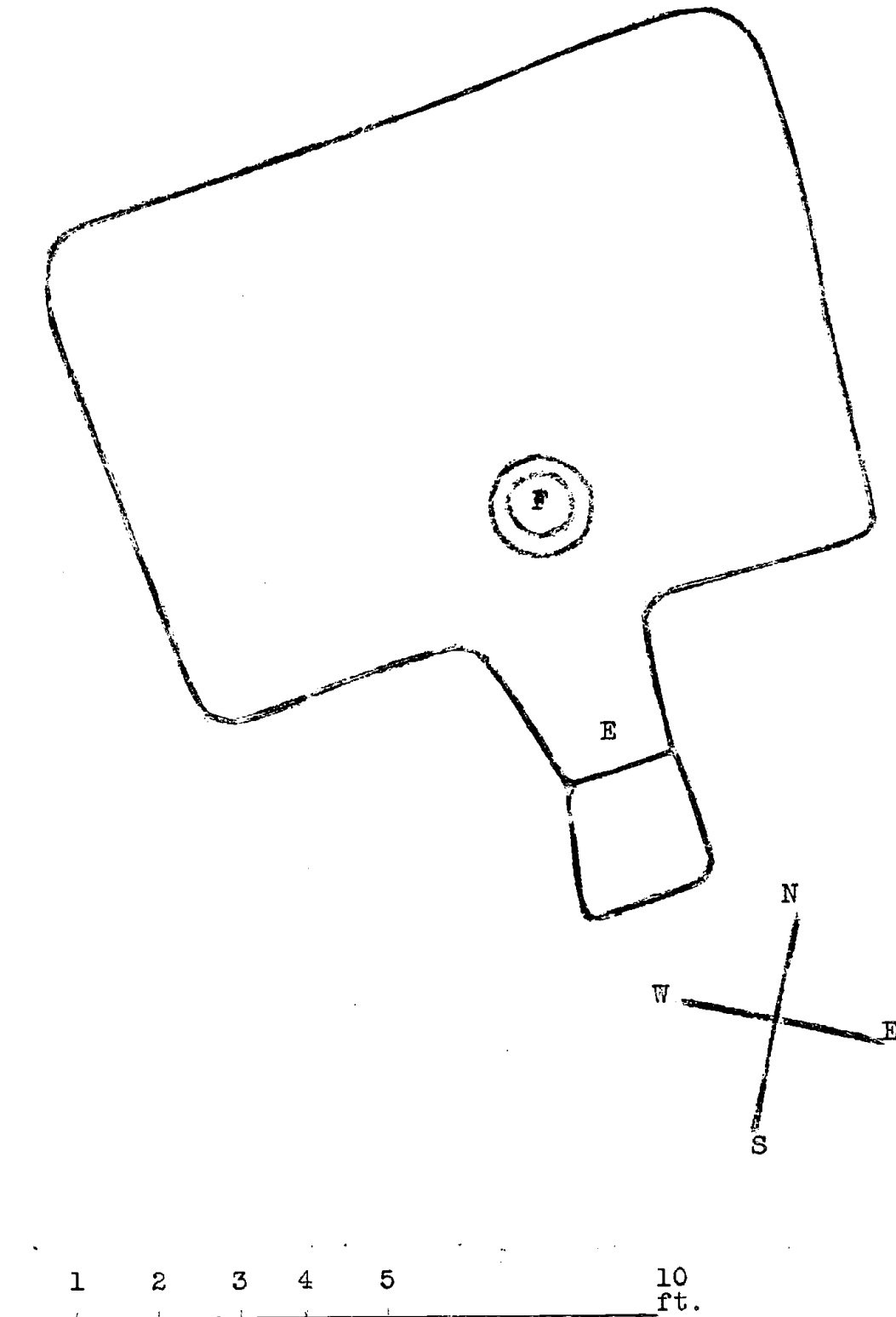
Judging from the careless, haphazard arrangement of the structures, as well as the flimsy construction of the houses, and lack of evidence denoting violent destruction there was apparently no thought or need of defense on the part of the builders.

Of the later, heavy walled compound type structures there was not the slightest trace.

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4. Gladwin - Idem.

Fig. 2



TYPE B

F - Fire pit

E - Entrance way



In certain instances there were definite indications of a re-occupation of the same building site, although there were no criteria by which a lapse of time might be indicated between the destruction of one building and the erection of another. On one spot the remains of eight distinct superimposed structures were found.

The houses were of two general types. One was definitely a pit house, the other a surface structure, apparently of the brush shelter type. For the sake of convenience these have been labeled Type A and Type B. Type A refers to the brush shelter. Type B refers to the pit house.

### The Type A House

The essentials of a Type A house are:

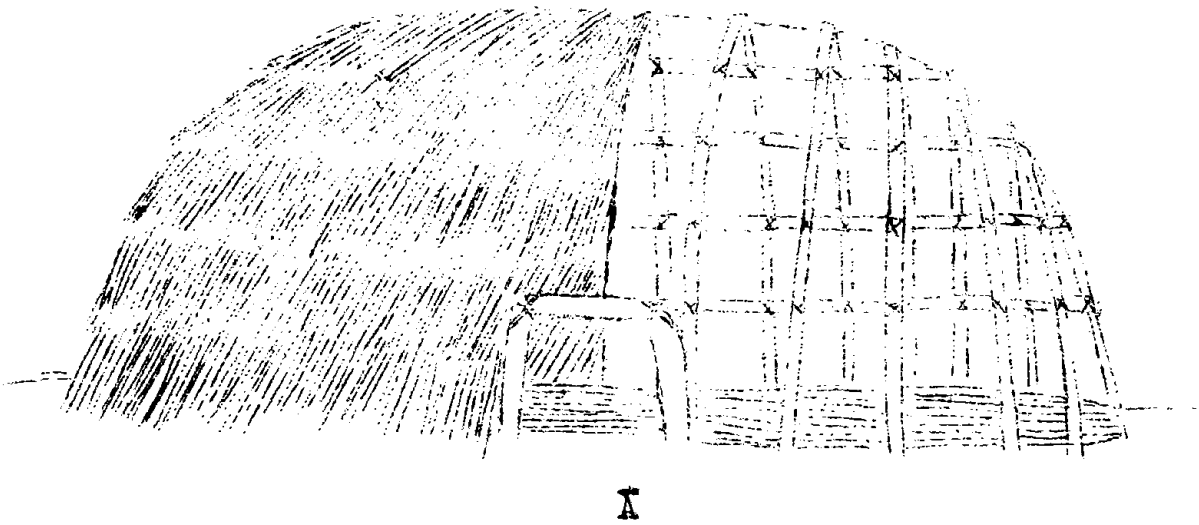
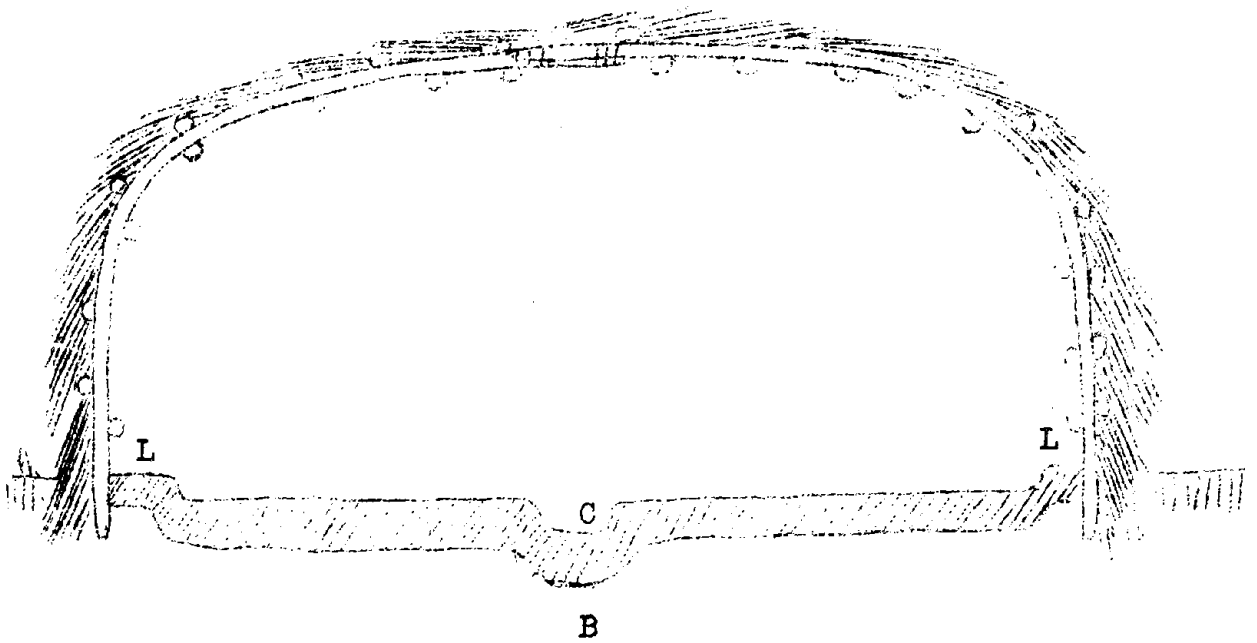
1. A floor with straight sides, quasi-parallel and generally with rounded ends (see floor plan Fig 1)
2. An extension of the floor on one side, presumably the remains of a covered entrance way.
3. Evidences of a more or less flimsy superstructure with indications of at least two types of side walls and roofing:
  - a. Wattle and daub, upright poles of mesquite or cottonwood cross rods of sahuaro ribs or mesquite holding upright sheathing of arrowweed or cane, the whole being plastered outside and at times inside with a coating of mud. Roof - flat, made of arrow weed or sacaton, a heavy cane-like grass covered with mud.
  - b. Thatched house, apparently dome shaped; sides of arrow weed or other thin rods set closely together around periphery of floor. Sides and roof thatched with coarse grass attached to light superstructure. No plaster inside or out. (See A - Fig. 2 for postulated construction.)
4. Occasionally these houses had a solid triangular or rectangular "lip" of caliche extending entirely around periphery of a well-made floor, giving the floor the appearance of an oval soapstone griddle. (End view of house B, Fig. 3 illustrates one type of this lip.)

### The Type B House

The general essentials of this type structure are:

1. A shallow pit, roughly rectangular, sometimes with rounded corners dug into the top soil in depths ranging from eighteen to thirty inches.
2. The side walls are often thinly plastered with caliche applied in thin, crude, overlapping pats to the sides and ends of the pit.

Fig. 3



TYPE A

- (a) Postulated reconstruction of  
thatched dwelling - side elevation
- (b) End view - lip indicated (L)
- (c) Fire pit

3. An extension at one side of the pit, generally directly opposite the fire place, which may have served either as an entrance way or possibly as a simple ventilator.

4. A generally well made, small circular, shallow, plastered fire pit, located as a rule near the center of one side of the floor but sometimes near the center of the room.

5. General absence of post holes in floor and corresponding lack of evidence of the nature of the superstructure.

## BURIALS

With one exception all of the burials encountered were cremations.

Three distinct cremation areas were found as well as a few scattered burials near one of the houses in the northern end of the tract.

One badly disintegrated adolescent inhumation, without offerings was found in a pit, three feet under the floor of a pit house.

The interments uncovered followed one general type and because of their nature have been termed cremation pit burials. In the first cremation area encountered but few burials were discovered. In the second cremation area approximately one hundred burials were found and in the third plot some sixty odd pits were laid bare.

When the first burial pits were found, because of their strange nature, and the uncertainty of working in a new phase of a culture, no definite system was followed in uncovering the burials. As work progressed and variations of type burials were encountered, it was difficult to perceive clearly the outcome of the exploration.

Apparently the ancients were not orthodox in the burial of their dead, in so far as a regular observance of the size of the pits, depth of pits and order of arrangement of pits and offerings were concerned. They were consistent in this early phase however, in observing the use of pits dug into caliche or hard pan and in the deposition of the fragments of complete objects of stone, bone, shell and pottery with the remains. Not until the cremation areas had been cleared and the material finally assembled in the laboratory were we able to reconstruct any tenable theory of the disposition of the Hohokam dead and methods of burial.

However, it would seem that the general system followed by those early settlers in that region, not only on the Grewe Site but on other sites of a similar nature, east and west of the Grewe Site, was as follows:

1. The body was burned on a pyre probably built over round or oblong pits dug in the ground to a depth of fifteen to thirty inches. The heat generated at such times must have been terrific and was hot enough not only to consume the body but also produce a physical change in obsidian nodules thrown onto the pyre as offerings, as well as to vitrify fragments of pottery offerings which happened to fall into the hottest part of the fire.

2. Offerings of pottery, bone, stone, shell, and textiles were apparently thrown into the fire with the body.

3. When the body was entirely consumed, the human remains were raked from the ashes, broken into bits and deposited in pits dug into the surface of the convenient patches of caliche which in the site under discussion were not over eighteen inches below the surface in that portion of the tract where the cremation areas were discovered.

In ancient days certain deposits of this material may have been exposed to view but judging from the nature of most of the burials it seems certain that the greater portions of the burial areas were covered with a deposit of soil, then even as today.

4. After the bones were placed in the bottom of these pits which varied from six to thirty-six inches in depth and from twelve to twenty-four inches in width, the sherds of broken vessels of many types were carefully placed over the calcined remains. Some of these vessels had been thrown into the cremation flames, others were apparently broken on the spot and the greater portion of the fragments deposited in the grave. Artifacts of stone, bone and shell frequently accompanied the pottery offerings and practically all of these smaller objects showed signs of having been exposed to the action of the flames to a greater or lesser extent.

In some instances it appeared that there were variations of the type burial. Declivities in the caliche, from six to seven feet long and from six to twelve inches wide, apparently natural irregularities in the calcareous mass, were utilized as burial trenches. The calcined remains were distributed the length of such trenches and frequently the offerings would be deposited at either end or mingled with the bones in the declivity.

Again, adjoining pits were dug, one pit was filled with the broken bones minus the usual offerings. The adjacent pit then served as a repository for the offerings.

Almost invariably a round, heavy walled vessel containing a few bits of charcoal (not ashes) was found either in the grave pit proper or in the earth over the pit accompanying the burials in Cremation Area II. The purpose of these vessels is unknown.

Unlike the majority of the offerings, these heavy walled vessels were never broken when placed in the graves. Nor did there seem to be any particular order or choice of position of such vessels when they were deposited in the graves. Some were resting in the top of the pit on the other offerings, others were found a few inches above the pit proper in the soft loam. Some were upright, others were tilted on their sides, a few were upside down. Now and then one was found in the very bottom of the pit resting on the bones.

On account of the practise of placing these vessels in the soil over the pits, and because certain of the pits were grouped closely together, following the occurrence of natural depressions in the surface of the caliche which were utilized as burial pits, it was not always possible to associate the various offerings encountered with definite burials. Often a burial was discovered without warning, no preliminary offering being visible. Later the offering would be found a few inches distant. Again, as mentioned, two pits might be side by side within three or four inches of each other and the offerings placed above them. In such cases it was not possible to tell to which grave each particular offering or set of offerings belonged, especially when such offerings happened to be between the pits, in the earth above them.

The bulk of the finer specimens were uncovered in Cremation Area II. Additional specimens of the same high degree of workmanship were encountered in the offertory area some eighty or ninety feet east of this particular cremation area.

The Burial Cremation Areas I and III as well as those few encountered near the house ruins in the northern end of the tract were not accompanied by the wealth of offerings characteristic of Cremation Area II. Yet the pottery found therein and the subsidiary offerings in the deposits were of the same general types encountered in the other burial plots. Decorated vessels were fewer and such items as paint palettes, mirror bases, etc., were less in evidence and not of the same general quality of workmanship. The reason for this is not clear. One might offer several theories for such differences but it is not our purpose to undertake such a discussion in this paper.

Summarizing briefly we may present the general characteristics of this type cremation burial on the Grewe Site as Follows:

1. Apparently the accepted mode of disposing of human remains was by cremation.
2. Interment took place in relatively small, shallow pits and trenches dug either into caliche or hardpan.
3. Offerings of pottery, stone, shell, bone and textiles accompanied the remains, in or around the pits.

4. There were variations within the type of the burial but the type proper remained fairly constant.

5. There was no apparent surface marking of the graves.

#### OFFERTORY AREA

Mention has been made in some of the foregoing paragraphs of an offertory area. It must be admitted that this term is used somewhat hesitantly but in view of the nature of the discoveries made within the area it is rather difficult to find another which is applicable.

Just east of Cremation Area II, test work brought to light various small deposits of artifacts of pottery, bone, stone and shell of exactly the same character as those encountered in the burial ground. At first, because of the similarity of the appearance of the deposits when exposed to view, to the deposits over the cremation pits, it was deemed that another group of graves had been found. However, further work showed clearly that these deposits were not related in any way to any burials within that particular area.

These small heaps of pottery, paint palettes, mirror bases, arrowheads, bone tools, deer antlers and mountain sheep horn cores were found at irregular intervals, yet they seemed to have been regularly formed. Certain pottery vessels for example had not been cast haphazardly upon the piles, instead they had been broken into four or five pieces and each piece had been placed, one at a time upon various parts of the deposit.

Consequently, knowing that certain historic tribes, some within this same cultural area, have in fairly recent times held ceremonies for the dead at certain intervals after death, generally a year following the interment, at which times special offerings are made, the term offertory area was applied to this portion of the tract in which these deposits were found.

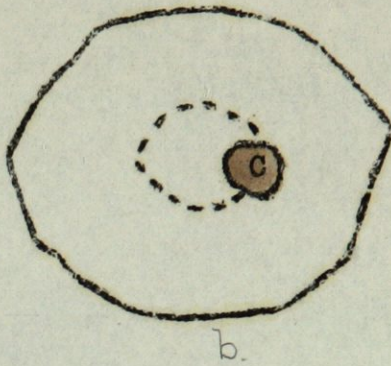
The deposits were approximately six inches thick and three feet in diameter. They all rested on what appeared to have been the original surface of the ground at the time of their origin. They were grouped together fairly closely, yet without any apparent order or arrangement. Within the same area were found the badly disintegrated remnants of what appeared to be house floors of Type A. Whether or not these were habitations or ceremonial enclosures is difficult to say.

The only large stone axes found on this site were recovered, badly burned and shattered, from one of these deposits.

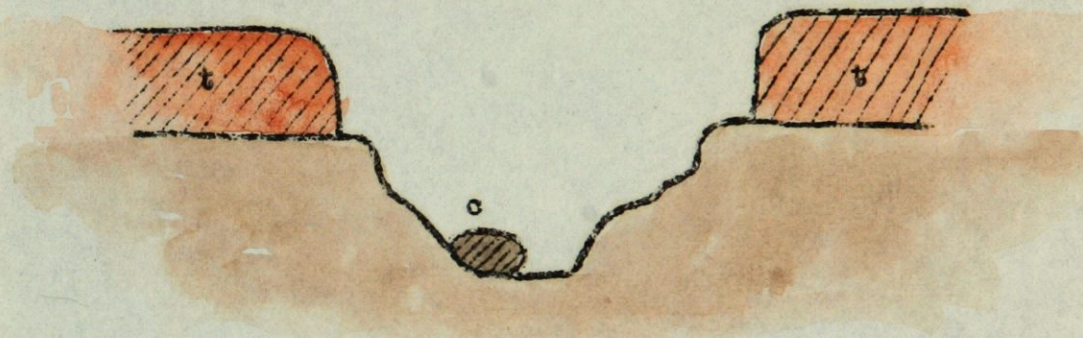
The badly calcined remains of several hundred flat pecten valves, drilled near the center of the hinge, apparently for use either as jinglers on rattles or personal adornment were also found.



Fig. 4



b.



a PIT

- (a) Cross section - side elevation of pit
- (b) Top elevation of pit
- (c) Stone
- (t) Top soil

Another feature of this offertory area which seems to add additional weight to the theory that the area was one in which post mortem and ceremonial deposits were made, was the small heaps of charred and partially charred remnants of large deer antlers and the bone cores of mountain sheep horns.

In times past (although the Pima today deny that they ever brought the horns of mountain sheep into the villages) similar piles of antler and horn were observed by early travelers outside of the villages occupied by the Pima.<sup>5</sup>

### PITS

Seven round pits, varying in size from seven and a half to eight feet in diameter and from twenty inches to three feet in depth were found in various places on the northern and southern ends of the site.

These pits were coated with a carbonized layer of clay or mud about four inches thick. The earth around the pits was reddish in color as though it had been subjected to a great heat.

When found the pits were filled with small boulders, broken manos and fragments of rocks all of which were fire burned.

In the bottoms of these large pits were smaller depressions. A glance at the cross section of one of these pits (Fig. 4-A) indicates the nature of these peculiar pits. Fig. 4 - B depicts top view of pit. The usage of these pits is unknown.

### POTTERY

The major cultural criterion of the Southwestern archaeological area, as well as other portions of the world where such research is going forward is pottery. Naturally, other elements of material culture should accompany ceramic wares, particularly stone artifacts, but in the areas where pottery is and has been manufactured, this continues to be the largest and most important single element in the study of an area.

No attempt will be made at an intensive analysis of the pottery discovered on the Grewe Site in this paper. However a few salient points should be noted.

#### Paste

The pottery of the Grewe Site, as far as the texture of the body of the wares is concerned appears to be indigenous. It seems quite likely that the Hohokam had access to some of the same clay beds or seams and the same tempering material as the latter day Pima and Papago,

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5. Russell, Frank, The Pima Indians, 26 Annual Report, Bureau of American Ethnology, p. 82, Washington, D.C.

The body ranges in color from a light pinkish yellow through varying shades of grey-brown to black, depending upon the admixture of clay and tempering, firing, etc.

The body of the decorated ware appears to be smoother and more compact than the undecorated ware.

Bits of volcanic, quartz, and mica-schist tempering particles are more plentiful in the undecorated ware. Likewise there is more mica in the plain ware than in the decorated vessels.

In general, the Hohokam wares are more porous and seemingly underfired, compared to the harder, more compact Puebloan pottery in the north.

### TECHNIQUE IN MANUFACTURE

Judging from the interiors of larger vessels encountered and from the survival of pottery making processes among historic tribes in the same area and adjacent areas to the west, but not the north, the technique of pottery manufacture in the Gila, as practised by the Hohokam was different from that of the Pueblo area in the north.

In brief the Hohokam used the paddle-and-anvil<sup>6</sup> method in contrast to the coil-and-scrape method of the Puebloan peoples.

### VESSEL FORMS

The ceramic development among the Hohokam in the period represented on the Grewe Site seems to have been fairly well advanced as far as the multiplicity of forms and decorative motifs are concerned but somewhat sluggish in the application of pigments and firing.

From the thousands of broken sherds recovered in the course of the excavations a series of typical vessel forms has been evolved. These range from simple, flat plaques to huge, well-shaped storage jars.

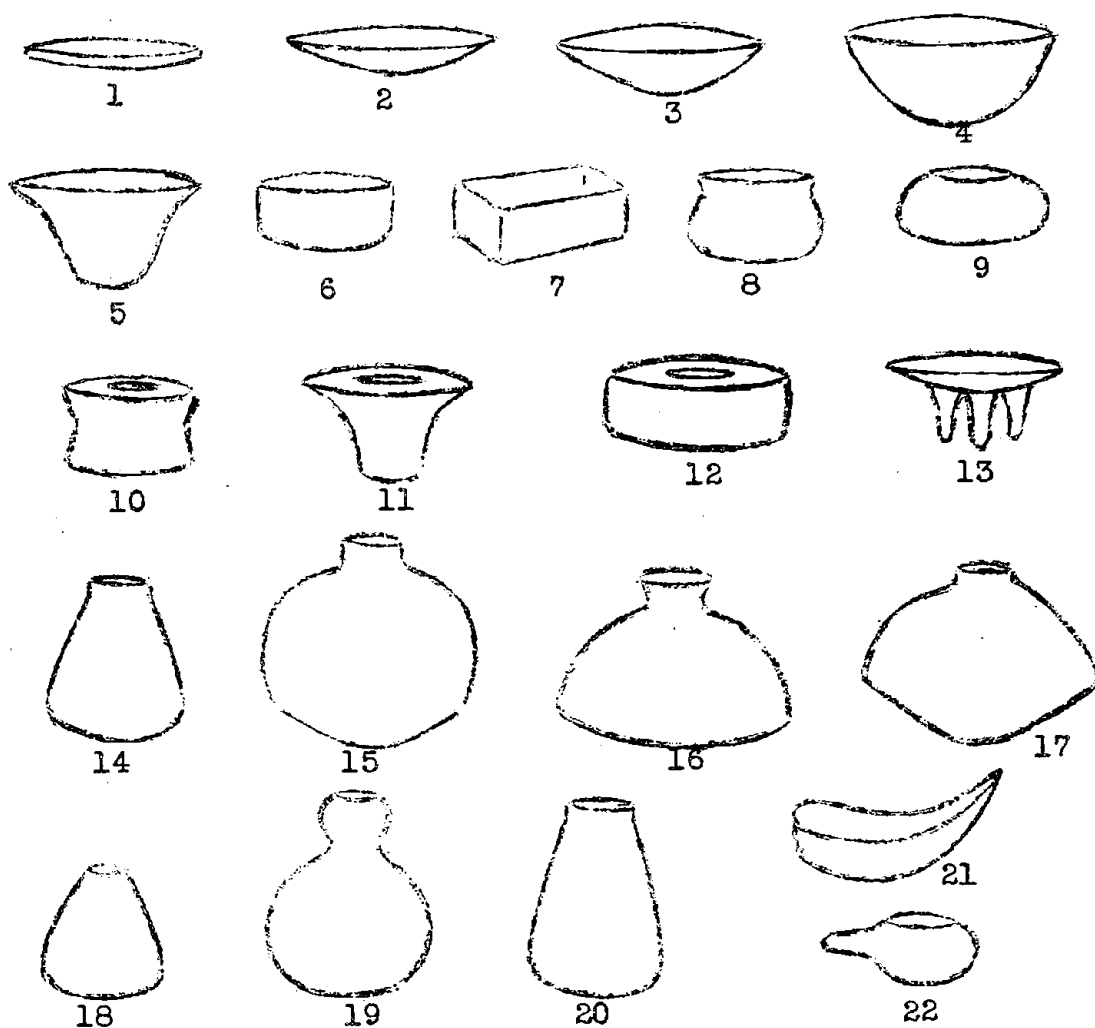
A glance at Fig. 5 will serve to convey an idea of the variety of vessel forms represented in the collection. Among them appear several types which have no counterpart in the Puebloan wares of the earlier ceramic horizons, although in later years certain of these forms did creep in.

Among the non-Puebloan forms which are common in the early Hohokam horizon are the bell-shaped or flaring rimmed bowls, the round, heavy walled vessels, the legged wares, the plaques proper, the heavy walled, pear-shaped vessels and the large jars with the "Gila shoulder".

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6. Gifford, E.W., Pottery-Making in the Southwest, Vol. 23, No. 8, pp. 353-373, University of California Pub. in Am. Archaeology and Ethnology, Berkeley, Calif., 1928.

Fig. 5



- |                                    |                        |
|------------------------------------|------------------------|
| 1 - Plaque                         | 13 - Legged vessel     |
| 2 - Plate                          | 14 - Recurved jar      |
| 3 - Shallow bowl                   | 15 - Globular jar      |
| 4 - Bowl                           | 16 - Semi-globular jar |
| 5 - Flare-rimmed bowl              | 17 - Semi-globular jar |
| 6 - Straight side bowl             | 18 - Eggshaped jar     |
| 7 - Rectangular bowl               | 19 - Gourd shaped      |
| 8 - Recurved bowl                  | 20 - Vase              |
| 9 - Incurved bowl                  | 21 - Scoop             |
| 10 - 11- 12 - Heavy walled vessels | 22 - Ladle             |



## DECORATED WARE

All of the decorated ware is red-on-buff, literally speaking, although the "buff" ranges from a thin, clay wash tawny grey in color to a slip which varies from a yellowish white to a greenish white, the latter color more often being noted as a rather thin application on the interior of large jars. It may be said of the latter that it is more a wash than a true slip.

The decorative motifs are applied in various shades of red, the variations in color being caused by methods of firing and in the mixtures of the paint.

Negative type decorations occur. That is the background is utilized as a definite part of the decorative scheme instead of serving as a mere ground color upon which the motifs are applied.

An infinite number of decorative motifs are found, ranging from zoomorphic to geometric patterns. Large and small elements occur, individually and combined on the same vessel. The Hohokam artists did as artists have done the world over, considered the field they had to fill and adapted their motifs according to their needs. Realistic and conventionalized figures appear in the same horizon, born perhaps in the brains of a few and carried on through the succeeding generations to the present time.

The use of incised lines in conjunction with painted designs to achieve certain decorative effects is relatively common. In speaking of incised lines or incised ware, the author wishes to call attention to the fact that such lines were made on the pottery while it was in a plastic stage prior to firing. Engraved ware is yet another type not represented in the collection. The distinction between engraved ware and incised ware is that the line work on engraved ware is cut in the finished surface after the vessel has been fired. Since both types of decoration occur in various pottery making areas in North and South America and since there is frequently a tendency to confuse the two distinct modes of decoration, this definition is inserted at this time.

A more detailed description of the vessels recovered, the nature of the various pastes or bodies of the decorated and plain wares as well as interior and exterior finishes, decorative elements, etc., will be given more completely in the bulletin on pottery to be published at a later date.

In general it may be said of the pottery that while the paste and common decorative motifs appear to be indigenous, the forms appear to be those of true and modified types brought into the valley from some exterior source, and judging from various regional developments of pottery forms, these vessel shapes appear to be more southern in aspect, more Middle American, than of any other provenience.

## STONE ARTIFACTS

The predominant items fashioned out of stone were mica-schist paint palettes and small, round vessels of lava (scoria), sandstone and some varieties of fine grained hard stones.

Arrowheads were not numerous, although those which were found were delicately fashioned of chalcedony, chert and obsidian, indicating that while this type of artifact was not commonly used, yet the art of stone flaking was well understood.

In Fig. 6 (a) are shown the type forms of arrowheads most frequently found.

Fig. 6 (b) illustrates common form of paint palette and Fig. 6 (c) indicates common type (decorated) of small stone vessel.

A number of manos were found and the broken fragments of metates of the deep-walled, trough-shaped type, open at both ends were found in the rubbish of house fill and trash mound, but oddly enough not a single, complete metate was discovered on the entire tract.

Several small, zoomorphic stone vessels, fashioned to represent horned toads and coiled rattle snakes were recovered. One small phallic object was found.

In the estimation of the author, the most significant stone specimens uncovered were the fine grained, beveled, well drilled, thin sandstone discs which at one time had served as the bases of metallic mirrors, the reflecting surfaces of which had been a mosaic of thin segments of iron pyrite crystals. Approximately a dozen of these objects are represented in the collection. These seem to be truly southern in origin.

A number of small scoria objects, presumably fetishes of one sort or another were found in grave area and trash mound.

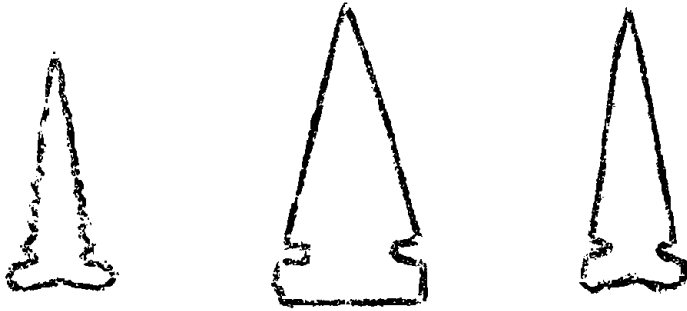
Nodules of obsidian, the majority of them showing evidences of exposure to an intense heat were found in and around the burial pits, evidently offerings to the dead.

Thin schistoid implements, giving evidence of various degrees and modes of usage, some denoting digging tools, others cutting implements were likewise present.

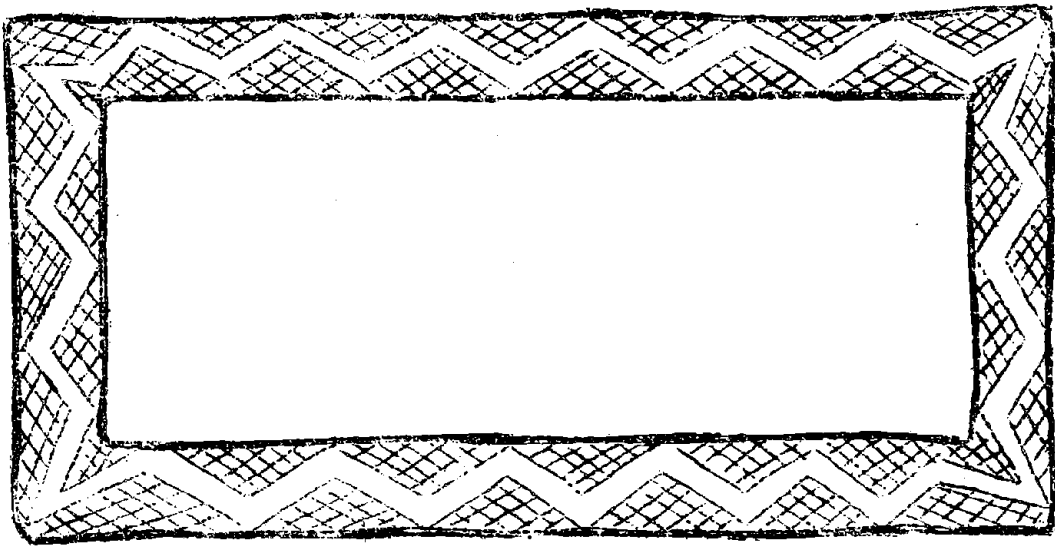
Hammerstones made out of small, water worn river boulders were found in great numbers. Some of these had apparently been used for other purposes than battering and abrading, judging from their condition. Many of these may have served as anvils in the manufacture of pottery, even as rounded stones serve Papago pottery makers today.



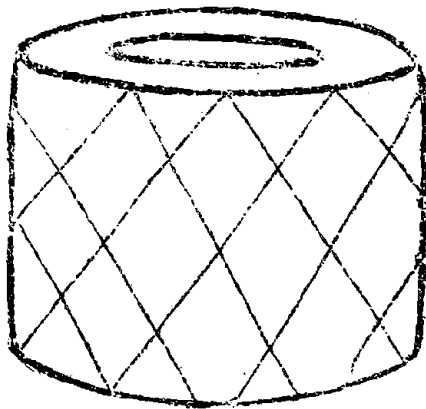
Fig. 6



(a) ARROWHEADS



(b) PAINT PALETTE



(c) SMALL STONE VESSEL

## SHELL ARTIFACTS

From one deposit in Cremation Area II and from two or three deposits in the offertory area a number of shell objects were salvaged.

The preponderance of such specimens were the left valves of pecten shells, the thin, flat plates of the pecten. These had all been drilled at the center of the hinge. Most of them had been badly fractured by fire. Some had been calcined to lime, leaving only an impression. Practically all of the shell material, save those specimens found in the trash heaps had been burned through and through. Approximately six or seven hundred of these pecten ornaments were represented in the two areas but of this number a scant forty or fifty were unbroken.

The finest items of a conchological nature however, were two carved finger rings, which although calcined were perfect in every detail. The bodies of the rings which were identical in motif, consisted of twined rattlesnakes. The bezels were birds seated back to back. These birds were depicted in the act of swallowing the snakes, the heads of the reptiles being in the birds beaks, the tails in the claws.

The fragments of several bracelets of this same design were also found.

Incidentally it might be mentioned at this time that the late Wesley Bradfield working the Cameron Creek ruins, New Mexico found two bracelets of identical design in the ruins of early pit houses. They are illustrated in his work.<sup>7</sup>

Fragments of other bracelets bearing representations of human figures, horned toads and rattlesnakes were mingled in the debris.

Burned and unburned shells and fragments of shells were uncovered in various portions of the tract.

A systematic check on these conchological specimens revealed the fact that all of the shells used by the Hohokam had been obtained from the waters of the Gulf of California.

## BONE ARTIFACTS

In Cremation Area II and the Offertory Area quantities of bone tools, apparently awls and handles of some sort, both carved and undecorated were recovered. These tools were fashioned out of the leg bones of mountain sheep and deer, of which many specimens were likewise found.

Mountain sheep, rattlesnake and bird motifs predominated on the carved awl handles.

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7. Bradfield, W. Cameron Creek Village, Pl. CII, Santa Fe 1931

Depostis of charred deer antlers and the bone cores of mountain sheep horns have already been mentioned.

The tips of several deer antlers, badly burned but showing definite evidence of having been used, possibly as flaking tools in the manufacture of chipped stone implements were encountered.

Unburned bone objects were rare, only a few being discovered and those mainly in the trash heaps.

### SUMMARY

The foregoing paper has of a necessity been brief and sketchy. However, a few general observations may be pertinent at this time.

First, in the estimation of the author, the Grewe Site as worked was not the complete culture center once existing on that particular spot and that, important as the mass of related material culture may be, it does not represent the entire cross section of that particular community. However, in spite of this shortcoming, the specimens recovered are decidedly important in that they represent a correlation of the elements of a certain phase of the early cultures of the Gila Valley, which until this time have been found only as scattered and practically undefinable scraps of what was presumed to be a rich and colorful civilization.

Secondly, a general broad analysis of the integral parts of this culture as revealed by the material evidence on the Grewe Site and to a certain measure corroborated by the historical evidence of the 17th and 18th centuries, seems to place the growth of this phase of the Gila peoples in a period more remote than has been previously popularly supposed. Furthermore, basing the premise on the material evidences alone, corroborated by the material evidences in other museums and in the discoveries in Mexico and Central America it would seem that while the major superstructure of this culture, as evidenced in the later phases and in the historic period, is indigenous to the region, the earlier seeds of the culture were carried directly from some exterior source, possibly the interior of Mexico, and planted in the Gila where they flourished and died or rather degenerated to an almost unrecognizable state.

Furthermore it also seems probable that, from this early culture, tentacles reached out to the north and west and east and certain material cultural gifts such as cotton for the north, pottery making and agriculture for the western peoples along the Colorado were carried by those same tentacles to those regions. This however is merely speculative. Additional work is required before such speculations may be advanced as working theories. There are certain elements of evidence available now but more are needed.

Most of all, work is needed in Mexico. Many small, insignificant sites must be examined in that country and a great deal of test work is needed on similar sites in Arizona and New Mexico.

Luckily there are numbers of such locations in Arizona, many of them undisturbed and falling in the same general plane of culture as that occupied by the Grewe Site. Some of these have been tested by the Van Bergen-Los Angeles Museum Expedition and have yielded additional corroborative evidence as to house types, ceramics, burials and stone artifacts. Eventually we shall be able to separate more clearly the phases of the culture in the Gila drainage area and when the distinctions in these phases of growth are more readily defined, then as in all areas of the Southwest, we shall be more certain of our footing and will be able to follow with greater clarity the path which will lead us to a more reasonable clearing of facts concerning the problems of Southwestern archaeology than we have at the present time.