

SMITHSONIAN MISCELLANEOUS COLLECTIONS

VOL. 5

QUARTERLY ISSUE

PART 4

PREHISTORIC RUINS OF THE GILA VALLEY

By J. WALTER FEWKES

WITH FIVE PLATES

At the close of the author's field work at Casa Grande, Arizona, in the spring of 1908, he received a grant from the Secretary of the Smithsonian Institution for comparative studies of the same type in the Gila Valley and its tributaries. The following pages contain a report of this work, including some additional data collected in former years. The present investigation is limited especially to that type of mounds supposed to indicate Great Houses like Casa Grande, the type of buildings characteristic of southern Arizona. As the particular object of the study is to determine the geographical extension of ruins of this kind, many buildings, like cliff dwellings and cavate rooms, common on the northern tributaries of the Salt, as the Verde and Tonto rivers, are not considered.¹

The Casa Grande type of buildings is practically found only in the plains bordering the Gila, Salt, and Santa Cruz rivers, where we have every reason to suppose this specialized form of structure first arose and later reached its highest development. Although it is probable that this type, somewhat modified, occurs in the Tonto and San Pedro valleys, it has not yet been recognized along the Verde and does not occur, so far as exploration has thus far gone, in the highlands in which the Salt and Gila rivers originate. It was of course impossible, considering the vast extent of desert in which these ruins are situated and the short time at the disposal of the author, to visit all of the ruins in these regions. Although the present report cannot be regarded as exhaustive, yet it is believed

¹The forms and general archeological features of the Casas Grandes of Chihuahua appear to be identical with those of Casa Grande in Arizona, but as the pottery objects are wholly different in the two regions, it would appear that there were important cultural differences.

to embrace the more important clusters of the Casa Grande type in the valleys under consideration. Small mounds¹ with fragments of pottery or broken metates indicative of habitations are scattered over the plain in every place in the desert where irrigation was possible. Their number and distribution indicate a considerable population, often settled at some distance from the great dwellings, but generally near remnants of the prehistoric irrigation ditches that one constantly encounters in these regions.

The level plains bordering the Gila River and its tributaries were inhabited in prehistoric times by an agricultural people having a homogeneous culture. The prehistoric inhabitants built houses of two types: the one large, often several stories high, with massive walls, and the other, of more fragile character, serving for their dwellings. The material with which the latter were built and the manner in which they were constructed were not sufficiently durable to resist the elements, and the walls have fallen, augmenting the height of the debris accumulated at their foundations. Sand blown by winds has drifted over the ruins, covering the rooms and forming mounds over them, from which, in a few cases, there still project, a few feet high, irregular fragments of the original walls.

When the Gila Valley was first visited by the Spanish explorers the projecting walls of these buildings were more plainly visible than at present and their true character and architecture were more apparent. It was at that time easier to recognize the characteristic type of structure of the buildings to which they belonged, for the walls are now almost completely buried. The massive walled buildings in these plains were early called Casas Grandes, or Great Houses,² one of the best of which, the historic Casa Grande, still preserves the ancient type. A knowledge of these houses, derived from laying bare the walls by excavations, shows that in their form and construction they are characteristic. They differ radically from cliff dwellings, pueblos, or those other prehistoric constructions in our Southwest,³ with which, however, they have certain affinities.

¹ Many artificial mounds in the Gila Valley show no indication of walls. Among these may be mentioned those formed of refuse or trash heaps and accumulations of earth incidentally thrown up in digging reservoirs or irrigation ditches. The sites of "mescal pits" or depressions in the earth where mescal was formerly roasted are indicated by earth much darker than that of the surrounding plain.

² The words "Casas Grandes" and Great Houses are used as synonyms of compounds.

³ The four types of prehistoric dwellings in the Southwest may be known as: (1) cavate habitations; (2) cliff dwellings; (3) pueblos; (4) compounds. The essential difference between (1) and (2) is that the former are dug out

The architectural features of these prehistoric buildings of the Gila plains is well shown in the historic Casa Grande, which may be designated, for purposes of study, a "type ruin." Its walls have now been excavated and are well preserved, showing the best example of other Casas Grandes scattered over the valley of the Gila and its largest tributary, the Salt River. The predominating feature of this Gila type of ruin is a rectangular inclosure bounded by a massive wall oriented about north and south and inclosing buildings, large and small, courts, and plazas. From the universal existence of a protective surrounding wall, the author has designated this type of prehistoric ruin a "compound" to distinguish it from other prehistoric ruins of the Southwest above mentioned, with which it has little in common.

Although the more striking mounds of this valley are formed of the debris of these great houses, or Casas Grandes, there is good evidence that the prehistoric inhabitants built synchronously with these other less conspicuous dwellings, which are not unlike the ancestral dwellings of the Pima, Sobypuri,¹ and Papago. These dwellings were rectangular in form. Their walls were supported by upright logs, between which were woven matting or possibly branches of the cactus called *ocatilla*, the whole frame being covered with adobe. The floors of such houses were made of mud firmly trodden down, while the fireplace was a simple depression near the middle of the floor, generally in front of a doorway opening in the longest side. We may suppose that the roof was also constructed of mud laid on boughs or split logs, the interstices being filled with mud.

A typical prehistoric settlement of the Gila may be supposed to have been composed of buildings constructed of massive walls one or more stories high and smaller huts or jacales (Aztec, *xa*, earth; *calli*, houses), the upright walls of which were supported by logs. Both types of houses occur in the rectangular area that has been

of the cliff, while the latter have taken advantage of natural caverns. The two types grade into each other, and no strict line of demarkation separates one from the other. The essential feature of the compound is the surrounding wall, which is sometimes morphologically represented in aboriginal buildings known as pueblos.

¹The walls of houses of rancherias of the Sobypuri in the San Pedro are spoken of by Father Kino as made of "palos" (sticks) and "petates" (matting), the chinks being filled in with clay or mud. No reference is made in his account of buildings in this valley with massive walls, although the "capilla" at Victoria may have been a special house made of stone and set aside for ceremonial purposes.

called a compound inclosed by a massive wall over breast high for protection.¹

In some instances nothing remains of the larger buildings, in others there is no indication of those with more fragile walls, but in both cases the surrounding wall is present and constructed of clay or stone, whichever material was most convenient for the builder. The two kinds of rooms would seem to indicate a dual use,² or that the rooms with massive walls were constructed for a purpose different from those with fragile walls supported by logs. The former may be supposed to have been used for ceremonials, councils, protection from foes, or for granaries, while the latter served simply as habitations.

If the number of walled compounds in the Gila Valley is any indication of its former population, it is apparent, from their number, that many people inhabited this part of southern Arizona in prehistoric times. As bearing on this point, attention may also be called to the fact that the ancient aboriginal population was more or less scattered and not confined to these great compounds, or even to their immediate vicinity, for there is abundant reason to suppose that they had many dwellings on farms situated between them and dotting what is now a desert. The prehistoric population of the Gila Valley may have risen into the thousands, and it is not too much to say that the number of Indians in the valley at the advent of the Spaniards could not have been more than a tithe of what it was in prehistoric times.

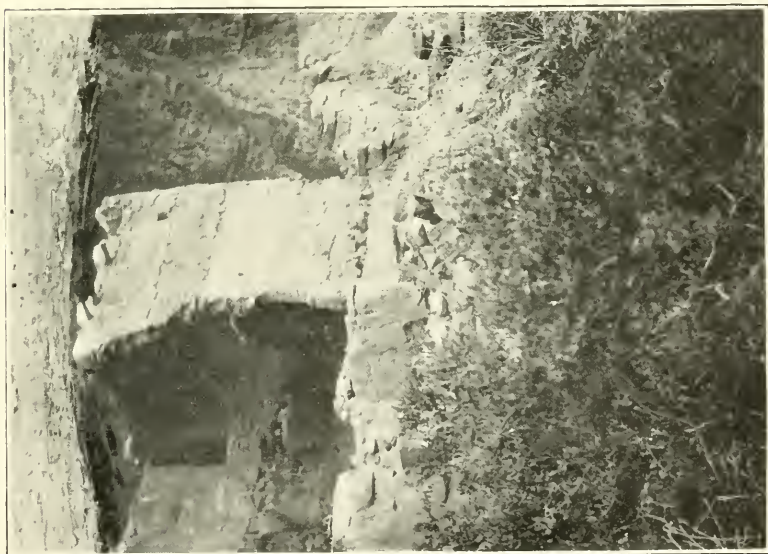
For convenience in the presentation of the subject, the prehistoric compounds of the Gila Valley have been grouped geographically as follows: 1, Compounds on the Gila; 2, Compounds in the Santa Cruz Valley; 3, Compounds in the Salt River Valley.

The first of the above groups includes those mounds of Great Houses scattered all the way from the upper Gila,³ or the valley

¹ Refuse heaps and other artificial mounds without walls are almost always found just outside the surrounding walls of the compounds.

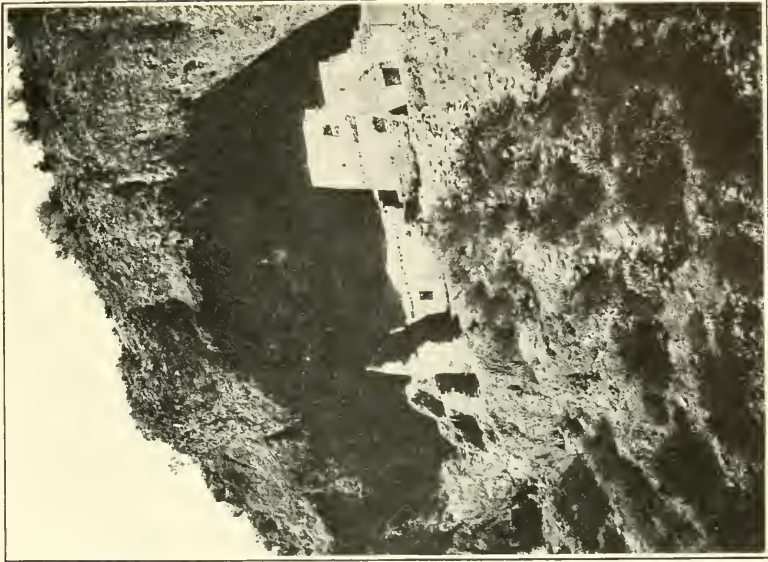
² Cushing, who apparently found the same "thin-walled" buildings, ascribed them to an "ultra urban" population, and Bandelier (Final Report) suggests that they were late Pima constructions. There seems no good reason to doubt that they were dwellings as old as the massive-walled structures and constructed by the same race.

³ Mr. F. H. Cushing writes, "Preliminary Notes," p. 184: "Contemplating the numerous structures in no fewer than thirteen cities, scattered throughout a single valley not exceeding seven hundred and fifty square miles, * * * we are impressed not only by the prodigious industrial energy of their builders and makers, but also by the unavoidable conclusion that they harbored populations far denser and more numerous than heretofore had been deemed (by scientists at large) possible, in reference to any group of ancient North American remains."



1.—Ruin A

CLIFF DWELLINGS NEAR ROOSEVELT DAM, SALT RIVER



2.—Ruin B

called Pueblo Viejo, to the so-called Gila Crossing; the compounds of the Salt River are strung along this river from near Mesa to the junction of the Salt and Gila, while the Great Houses of the Santa Cruz extend from the old missions at Tubac and Tumacacori, in southern Arizona, past the mission, San Xavier del Bac, to the isolated peak Picacho and the point where this river is lost in the sands of the desert. Mounds marking the former sites of these Great Houses occur on both sides of the rivers mentioned near to or remote from their banks.

There are evidences that these Casas Grandes were most numerous in regions of the Gila Valley, where at the present day the white population is the densest.¹ In other words, large settlements of Americans now occupy some of the same sites that the aborigines chose for the construction of their compounds. This occupation by a later race has led in some instances, as at Tucson, the oldest white settlement in Arizona, to the almost complete destruction of all evidences of these Great Houses of the aborigines. The same is true of the settlements near Phoenix and Mesa, where we note the same reduction in size and rapid disappearance of the ancient mounds. On the other hand, the desert south of the Gila, at Casa Grande, or the plains of the Santa Cruz between Red Rock and the "mouth"² of the river, show mounds indicative of former Casas Grandes more scattered, smaller in size, and fewer in number.

It appears that the valley of the Salt River in the neighborhood of Phoenix, Tempe, and Mesa was the most densely populated region of this whole drainage area and apparently contained the oldest settlements. These facts may be ascribed to the ease with which the plains in this region could be irrigated as compared with other parts of the valley, or may have been due to the presence of more fertile land in those localities.

The mounds in the valley above mentioned are known to the Pima Indians as the old houses (*vaaki*) and are associated with certain chiefs, called *civans*, whose names vary with localities. The following ruins and corresponding chiefs, recorded by Dr. Frank Russell in his monograph³ on the Pima Indians, may be mentioned:

¹ In the upper Salt we find several other types of ruins, the most striking of which are the two large cliff dwellings (pl. XXXVIII, figs. 1, 2) a few miles from Roosevelt Dam.

² *Atcin*, Pima word for mouth of the river.

³ 26th Annual Report of the Bureau of American Ethnology.

According to the legends published by Dr. Russell the Great Houses were formerly inhabited by the Vulture or Red people, the A'kol, A'pap, and A'püki.

Casa Grande,	Sia'-al Teu-vtaki, Morning Blue.
Santan,	Kia'-atak, Handle.
Ruin four miles northwest of Santan,	Teuf/haowo-o, Dipper.
Sweetwater,	Ta'-a, Flying.
Casa Blanca,	Teo'-otecuk Ta'tai, Black Sinew.
Gila Crossing Ruin,	Teu'narsat, Lizard.
Mesa (name?),	A'-an Hi'tupaki, Feather Breathing.
Tempe (name?),	Vi'ik I'alt Ma'kai, Soft Feathers Rolling.

The author has found that different Indians apply other names to the above ruins, but although their nomenclature of individual mounds varies, all refer a name of a chief to each of the larger clusters.

The geographical center of the culture area, characterized by Great Houses inclosed in compounds, as indicated by the largest number and purest architectural forms, lies near Phoenix, Tempe, and Mesa.¹ The San Pedro, Santa Cruz, upper Gila, and Salt and the northern tributaries of the Salt are frontiers of this area, the culture being considerably modified by local environment.

For convenience in treatment, the mounds or ruins in the region under consideration will be classified as follows: I, Middle Gila Valley Compounds; II, Santa Cruz Valley Compounds; III, Salt Valley Compounds; and, IV, Ruins on the San Pedro.

I. MIDDLE GILA VALLEY COMPOUNDS

The more prominent of the Great House mounds of the Gila are the following: 1, Ruin 15 miles east of Florence; 2, Ruin 3 miles east of Florence; 3, Ruin near Florence; 4, Escalante ruin; 5, Teurikvaaki (Ruin near Adamsville); 6, Ruin 5 miles east of Casa Grande; 7, Casa Grande; 8, Ruin on right bank of Gila opposite Blackwater; 9, Santan; 10, Ruin 4 miles west of Santan; 11, Snake ruin; 12, Sweet Water; 13, Casa Blanca; 14, Ruins at Gila Crossing. The following ruins have been associated with names of chiefs (*civans*) who inhabited them: 7, Casa Grande; *Sialim tcutuk* (Green or Blue); 11, Taa (Flying); 13, Teuk tatai (Black Sinew); 14, Tcunarsat (Lizard).

These people were conquered by Elder Brother in the following order: (1) Casa Grande; (2) an extensive "pueblo" at Santan, the pueblo of chief Teuf-haowo-o; (3) Sweetwater, ruled by Ta'-a; (4) Casa Blanca, pueblo of Teo'-otecuk Ta'tai; (5) Vultures pueblo; (6) Teu'narsat's pueblo at Gila Crossing; (7) that of A'an Hi'tupaki at Mesa; and (8) Vi'ik I'alt Ma'kai, at Tempe.

¹The Septenary arrangement of these Great Houses and compounds to which Mr. F. H. Cushing, *op. cit.*, ascribed considerable importance is not evident.

The architectural features characteristic of the Great Houses in the middle Gila appear also in the ruins in the upper Gila, or the so-called Pueblo Viejo, Old Pueblo, in which are situated the towns San José, Solomonsville, Safford, and Pima, considered in a previous report¹ on the ruins of that region.

There are many localities in this region of the Gila Valley where there are fine examples of ancient pictographs, among which may be mentioned those cut on cliffs near Sacaton and on the lava hills north of the river. About six miles east of Florence there are pictured rocks that are particularly interesting.

I.—RUIN 15 MILES EAST OF FLORENCE²

This ruin (fig. 65) has the rectangular shape characteristic of a compound, and its surrounding wall measures approximately 232 by 120 feet. It is situated a few miles north

of the old road from Florence to Old Fort Grant. Not far from this ruin there can still be seen two old reservoirs, called by the Pimas "*vashki*" and by the Americans "Indian tanks." One of these contained water at the time of the author's visit; the bank³ of the other tank was washed out and cut in two, so that it resembled two mounds and is so designated by the cow-men who have stock in this region. One of these "*vashki*" or "Indian tanks," (fig. 66) is identical in shape with the problematically "oval mound" at Casa Grande, suggesting a similarity in use.

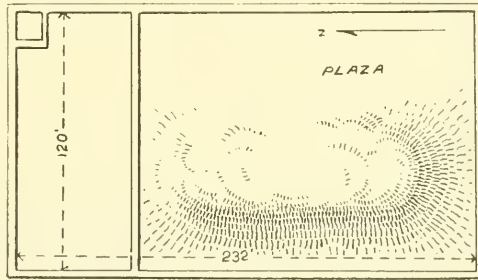


FIG. 65.—Compound 15 miles east of Florence

¹ 22d Annual Report of the Bureau of American Ethnology. The compound as a distinct type of Southwestern ruin was not recognized in this report. It is recognizable at the Epley Mound, which is the central citadel of a compound near Solomonsville.

² Florence, the capital of Pinal County, is the most conveniently placed city from which to visit most of the Gila compounds in the eastern region, and Sacaton, the Pima agency, is the best point of departure for those visiting ruins on the Pima reservation.

³ There are no walls built around the depressions, but they are surrounded by a bank of earth thrown out of the depression. This fact was determined by digging a cross-section of the bank of the "oval mound" at Casa Grande.

Another so-called "Indian tank," situated in a valley six miles from the two reservoirs mentioned above, was used by Sr. Paisano for watering his stock when the author visited the place. It contained considerable water at that time (March), and from its geographical position is supposed to be the reservoir in the valley west of the Tortilla Mountains, which is designated as a "tank" on the United States engineers' map of 1879. Everything indicates that this is undoubtedly an old Indian reservoir.

2.—RUIN 3 MILES EAST OF FLORENCE

This ruin, having the form of a low mound, is situated not far from the main irrigation ditch of Florence and about three miles



FIG. 66.—Ancient Reservoir

east of that town. Although the compound form is not easily detected in this mound, there is no doubt that it belongs to the characteristic ruins of the Gila-Salt Valley. The absence of smaller mounds in its neighborhood indicates that this settlement was never of great size or importance. In the immediate neighborhood of the modern irrigation ditch that now furnishes Florence with water were found several sections of a much older, perhaps prehistoric, ditch that once irrigated the fields cultivated by the aborigines near the settlement.

3.—RUIN NEAR FLORENCE

This mound is of considerable size and is situated a short walk from the town, on the south side, near a settlement of Papagos. It is referred to in the author's account¹ of excavations made at Casa Grande in 1906-07, where a plan of the compound is published.

The author visited the large modern reservoir south of Florence and searched carefully for a "ruin" which is designated on several maps, but failed to find it. A small mound was discovered near the bank of the reservoir, but larger "buildings" which were reported by several Americans did not materialize.² There are mounds in the broad stretch of desert between the reservoir and the prehistoric buildings at Picacho which several reliable men whose stock "run" in this region have described in detail, but the author was unable to locate them with any certainty.

4.—ESCALANTE RUIN

It is recorded that when Father Kino's party, in 1694, followed down the left bank of the Gila, Sargent Escalante and some comrades swam this river to visit a ruin the walls of which they had observed on the opposite bank. All that now remains of this "tower" is supposed to be the mound situated about a mile west of Posten's Butte, which is nearly opposite Florence and about the same distance from the right bank of the river.

Mr. H. C. Hodge thus refers to a ruin not far from Florence:

"Four miles to the west of Florence, on the line of the canal, are the ruins of another old town, the outlines of some of the buildings being easily traced. One of them is 120 feet long, and 80 feet wide. It was surrounded by a wall of concrete and stone, portions of which now remain; and this wall was 130 feet long on two sides of the building and 225 feet long on the other two sides, forming a kind of court-yard enclosing the buildings. This court-yard was filled in on the south and east sides with earth to the depth of four feet."³

Possibly the ruin here referred to is that which the author has called the Escalante ruin, or it may be Tcurikvaaki.

Although the standing wall that once attracted Escalante's attention as a tower has now fallen, a high mound marking the position of a massive walled building or "citadel" and the low ridge, indi-

¹ Smithsonian Miscellaneous Collections. Quarterly Issue, Vol. IV, p. 3, 1907.

² One or more were possibly destroyed when the reservoir was constructed.

³ Arizona as it is, or the Coming Country, 1877, p. 182.

cating the surrounding wall of a compound (fig. 67), can still be traced. Rough measurements of the last-mentioned wall show that its dimensions were about 210 feet by 120 feet. The ruin is situated not far from the railroad from Mesa City to Florence. In the springtime it can be readily seen from a distance as a mound of earth looming above the cacti and mesquites. The walls of this ruin were partially constructed of stones, none of which now project to any considerable height above the surface of the ground.

Apparently the Escalante compound had, in addition to a centrally placed building, a cluster of rooms in its northwest corner. There are also other mounds near it, indicating rooms in the neighborhood, although some of these show no signs of walls and were evidently piles of debris or rubbish heaps.

This settlement was supplied with water by one of the best-preserved ancient irrigating ditches the writer has seen in the

Gila-Salt Valley. This ditch follows the Gila from a point several miles higher up the river and extends to the neighborhood of the Escalante ruin, where it is lost in "laterals" or minor subdivisions. At a point near Posten's Butte, the southern side of which it skirts,

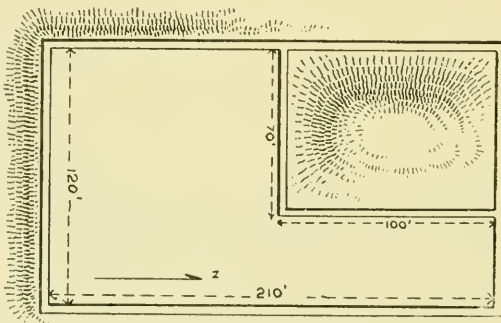


FIG. 67.—Escalante Ruin

the banks of this prehistoric ditch are head high and can be traced for many hundred feet without difficulty. The writer has been informed by an old Mexican, who lives in Florence, that when a boy he saw old stumps of logs in this ditch at the point where the banks are highest and he believed that these stumps were remnants of a prehistoric gate.

In the following quotation Mr. H. C. Hodge¹ refers to a prehistoric irrigation ditch on the north side of the Gila near Posten's Butte:

"About two miles west of Florence, on the north side of the river, between the homes of Mr. Stiles and Mr. Long, is a stretch of hard, stony land, through which another of the large irrigating canals was cut, and where for several hundred yards one can ride on horseback in the canal, which is yet so deep one cannot look over its banks on either side when sitting on his horse."

¹ Arizona as it is, or the Coming Country. 1877. p. 182.

5.—TCURIK VAAKI

There is a large ruin a short distance south of the abandoned American village, Adamsville, called also Sanford's Mill, which is one of the largest and most instructive in the valley. The Pima name for Adamsville is *tcüirik*, the Turk's head cactus, which would seem an appropriate name for the neighboring ruin. It consists of a cluster of mounds (fig. 68), among which rises a large central elevation that may be identified as the citadel of a compound. In addition, there is a clan house with four well-preserved walls above ground and an oval depression surrounded by a bank of earth which may have been a *vashki* or ancient reservoir. The most conspicuous of these mounds is the citadel, which looms high above the plain and is visible for a considerable distance, but the walls¹ that are best preserved are those of the clan house a few hundred feet away.

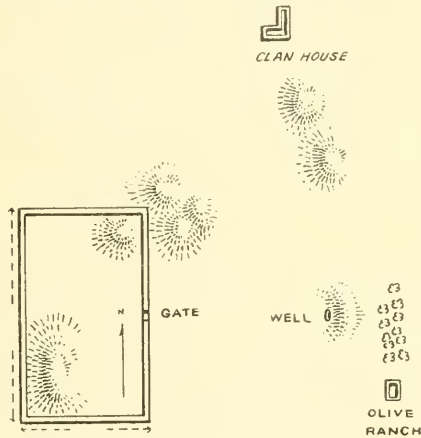


FIG. 68.—Tcurik vaaki

6.—RUIN 5 MILES EAST OF CASA GRANDE

This ruin is conspicuous for a considerable distance, its largest mound or citadel being clearly visible from the last-mentioned mound. It lies about half way between *Tcurik vaaki* and Casa Grande and was apparently once a settlement of considerable size. It is still pointed out by the Pimas, who retain the name *Uturituk*² for this place.

Two sections of the surrounding wall of this compound still project several feet above ground on the east side, indicating that it was similar to the surrounding wall of the Casa Grande compound.

There are prehistoric mounds on the north bank of the Gila about opposite Blackwater, not far from a modern Pima settlement con-

¹These are figured in the author's account of the excavations of Casa Grande in 1907-1908.

²The author has heard the ruin Casa Grande called *Uturituk*, probably a confusion of names of the ancient and more modern settlement.

taining several houses. The largest of those, which may be called conspicuous, is situated a few feet from a house belonging to the mother of Juan Enos, a Pima workman employed by the author in his work at Casa Grande. No walls of buildings stand out of the ground, but the general character of the mounds show that in form the ruins were compounds like those on the south bank of the river. There are many pictographs on the lava hills north of this mound, which resemble those shown in the accompanying illustrations (pl. XXXIX).

7.—CASA GRANDE

The general character and architectural features of the Casa Grande cluster of mounds will be described elsewhere¹ and will therefore not be here considered.

A lagoon mentioned in early writings as Cumani or Laguna was probably situated not far from where the Santa Cruz in times of flood empties into the Gila. The mouth of the river is near Sacaton Flats, known to the Pimas as Huring, "place of the standing cactus," and is mentioned by Fathers Font, Garces, and other early visitors. The name Cumani is adopted from their writings.

8.—RUIN OPPOSITE BLACKWATER

The Pima village called Blackwater, near Casa Grande, is comparatively modern, its inhabitants being descendants of certain families which moved there from Casa Blanca a few years ago. Previously, however, or at the time Casa Grande was first visited by the Spaniards, there was a Pima settlement near its site, called Uturituk or the place at the angle or corner.² Although the exact site of Uturituk is now washed away, the banks of the river at that point having been much modified by the changes in its current from the approximate position.

9.—SANTAN RUIN

There are mounds at Santan, on the north side of the Gila, opposite Sacaton.³ These mounds resemble those of Casa Grande and

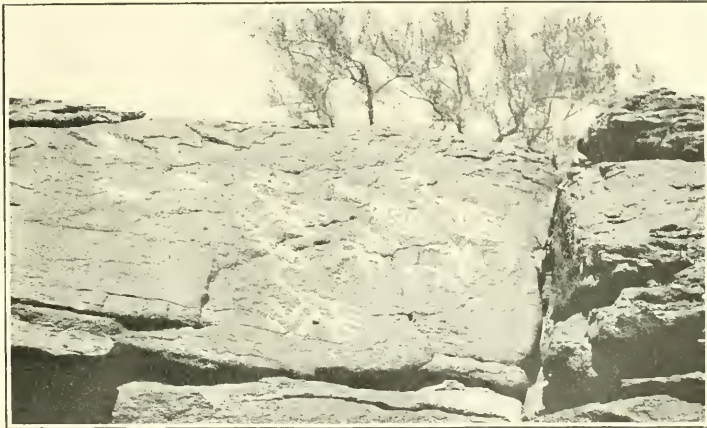
¹ A view of the largest compound is shown in the author's preliminary report on Casa Grande for 1907-1908.

² Referring to the island in the Gila near this place. Dr. Russell calls Casa Grande, Tcóoltúk, Pima word for "corner," which is believed to be a part of the *sivan* or chief's name, Sialtcutuk, Morning Blue, or Green.

³ Good views of the Santan Ruin, the ruin west of Santan, and that at Sweetwater are given by Dr. Russell in 26th Ann. Rept. Bur. Amer. Eth., pl. iv, a, b, and c.



a



b



c

preserve traces of the same compound architecture or buildings with a surrounding wall. They show signs of sporadic digging by amateurs, but have never been systematically excavated.

10.—RUIN 4 MILES WEST OF SANTAN

This ruin, like that at Santan, is situated on the north side of the Gila and is a large mound surrounded by a rectangular wall. It apparently belongs to the compound type.

11.—SNAKE RUIN

Snake Ruin, north of the Gila, was not visited by the author. From reports it is believed to be a compound.

12.—SWEET WATER RUIN

There is a low mound surrounded by a wall to the left of the road from Sacaton to Casa Blanca which shows the compound type. A plan of this compound has been published in a preliminary report on Casa Grande.

13.—CASA BLANCA RUIN

The mounds at Casa Blanca are among the largest in the Gila Valley and the compound wall of one of them is most extensive. In the middle of the last century, according to a contemporary writer, the walls of this building projected above the ground, but today they are level with the surface of the mound, though they can be readily traced. The mounds in the neighborhood indicate that this was formerly a settlement of importance and large size.¹ A considerable number of Pima Indians, possibly descendants of the ancients, now inhabit a cluster of houses west of the main mounds.

14.—RUIN AT GILA CROSSING²

The mounds situated a short distance from Gila Crossing are extensive, but have not been studied by the author. From descriptions by those who have visited them, it appears that one or more

¹ Smithsonian Miscellaneous Collections, Quarterly Issue, Vol. IV, 1907. This was a *vaaki* of considerable size, having one or more compounds, clan houses, burial mounds, and a large circular or oval well or reservoir with low banks. The indications are that its size was greater than that of the Casa Grande group of buildings.

² This compound is called by some of the Pimas *Tcunarsat vaaki*, or Lizard Old House. Many folk tales are current among Pimas and Papagos concerning it.

has the true compound form or type identical with the Casa Grande and Florence region.

It is desirable to explore the mounds reported from Gila Bend, which are supposed to be old habitations of the ancestors of the Maricopas.

II. SANTA CRUZ RIVER COMPOUNDS

The mounds indicating Casas Grandes along the Santa Cruz have the same general characters as those of the Gila and Salt rivers. The typical compound architecture characteristic of the plains along the Gila almost universally prevails in this region.

The Santa Cruz is not a constant stream, but in portions of its course may be called a subterranean river, the water literally flowing as a subway sometimes at a considerable depth. Near the Gila it is generally just below the surface, but its presence above ground is indicated by alkali lagoons, as at "Cumani," not far from Sacaton Flats. There are several mounds of large size along the valley of this river marking the sites of former Casas Grandes. Among these may be mentioned the Picacho settlement and those in the vicinity of Tucson, the most ancient Spanish settlement in Arizona. Numerous large ruins south of Casa Grande railroad station, near the road to the Vekol and other mines, belong to this same drainage area.

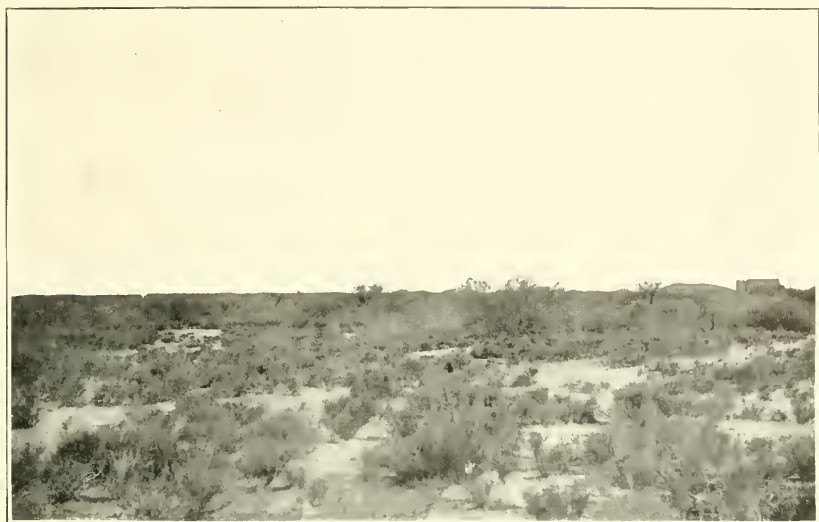
The Casas Grandes of the Santa Cruz will be considered under the following headings: 1, Ruins near Tucson; 2, Chakayuma; 3, AQUITUNO; 4, QUITOAC; 5, Ruins near Kwahadt Indian Villages.

I.—RUINS NEAR TUCSON

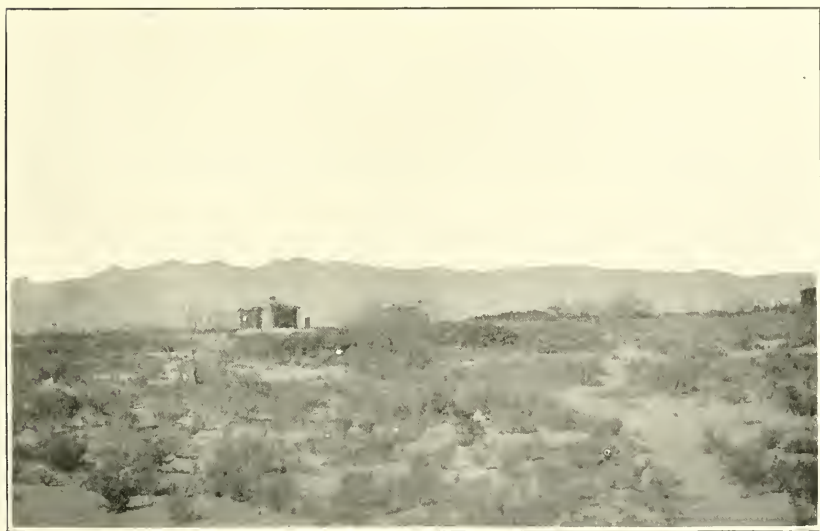
The valley of the Santa Cruz from the city of Tucson south appears to have been the most densely populated in prehistoric times. In this part of the valley the stream rose to the surface, and the supply of water was probably more constant here than farther down the river, where it was less available for agricultural purposes.

The author failed to find in the immediate neighborhood of Tucson any large mounds, such as occur in the deserts near Casa Grande or in the midst of the cultivated fields at Mesa and Phoenix, but near the city there are mounds bearing evidences of several old Indian rancherias or *vaaki*.¹ These, however, have been considerably reduced in size and so worn down that in most instances they

¹The term *bac* in San Xavier del Bac, Tubac, and other names of settlements or sites may be a contraction of *vaaki*, old house or old ruined house.



a



b

RUIN AT EL RANCHO DEL TUCSON

are inconspicuous. The land in this neighborhood has been cultivated for several generations, the valley at this point being one of the earliest settled portions of Arizona.

About a mile south of the site of the former presidio of Tucson there are remains of old mounds (pl XL, figs. *a*, *b*), out of which, according to Hon. Samuel Hughes, who settled in Tucson in 1853, there formerly rose cajon or caliche walls. One of these mounds was of considerable size, suggesting the central building of a compound. The author has been informed by several persons that formerly low massive walls projected out of this mound, which statement, if true, would indicate that this was actually a compound. It is about the center of a group. In the immediate neighborhood there is a cluster of Papago huts, the place being known to old residents as El Rancho del Tucson.¹

The first mission at Tucson was called by the oldest inhabitants Casa de los Padres, and was established at another Indian settlement on what is now the Grosetta Ranch, about three miles down the Santa Cruz from Tucson. The rancheria Santa Catalina was not far from this neighborhood. Here and at various other points on the Rillito, up the Santa Cruz north and northwest of the old Rancho del Tucson, there are low mounds on which are still found scattered fragments of Indian pottery indicating ancient aboriginal rancherias. It is, however, extremely difficult to distinguish historic from prehistoric sites of dwellings, both of which are found in numbers near Tucson, in the valleys of the Rillito and Santa Cruz.

The elevated land west of the city of Tucson called Tumanoac or Lizard Hill, has on its sides and near its summit walls, trincheras, or lines² of fortifications constructed of blocks of lava, near which are many boulders bearing pictographs, thus indicating the former presence of the aborigines.

Some of the best pictographs in this region, the general character of which appears in the accompanying plate³ (pl. XLI), are clustered on the cliffs about 5 miles west of Tucson.

¹ Several writers assert that the Pima word Tucson means black water, but other informants declare that it means black foothills; *took*, black; *son*, foothills, referring to the laval flows of the Tucson Mountains.

² Similar lines of stones set upright are also found in the valley. These could hardly be called trincheras. Their interpretation is doubtful.

³ From a photograph by Dr. MacDougal, Director of the Carnegie Desert Laboratory, to whom the author is indebted for an opportunity of visiting this locality.

On the north side of the Santa Cruz Valley, in the Tortilla Mountains opposite Tucson, there are several ruins, some of which have walls standing high out of the ground.¹

2.—CHAKAYUMA

This ruin lies at the foot of the northwest point of the Tucson Mountains, about 18 miles from Tucson, opposite the station Rillito, on the Southern Pacific Railroad. The face of the mountain, called by Garces "Frenta Negra," bears many pictographs, and lines of trincheras, fortifications, are still visible on the summit. The settlement spreads over several acres, the houses consisting of low mounds, with indistinct evidences of walls and many fragments of pottery. The sites of these houses are generally marked by rows of stones set on edge. These stones in some cases formerly supported and protected the bases of the walls, which were held upright by logs now much decayed. Shallow excavations at this place revealed the face of the wall in which these upright stones had been set and a hard clay floor, upon which was generally found a layer of charcoal. Evidently the stones served the same purpose as the logs found at Casa Grande, the remainder of the walls and the roof being constructed of perishable material, possibly brush or ocatilla cactus.

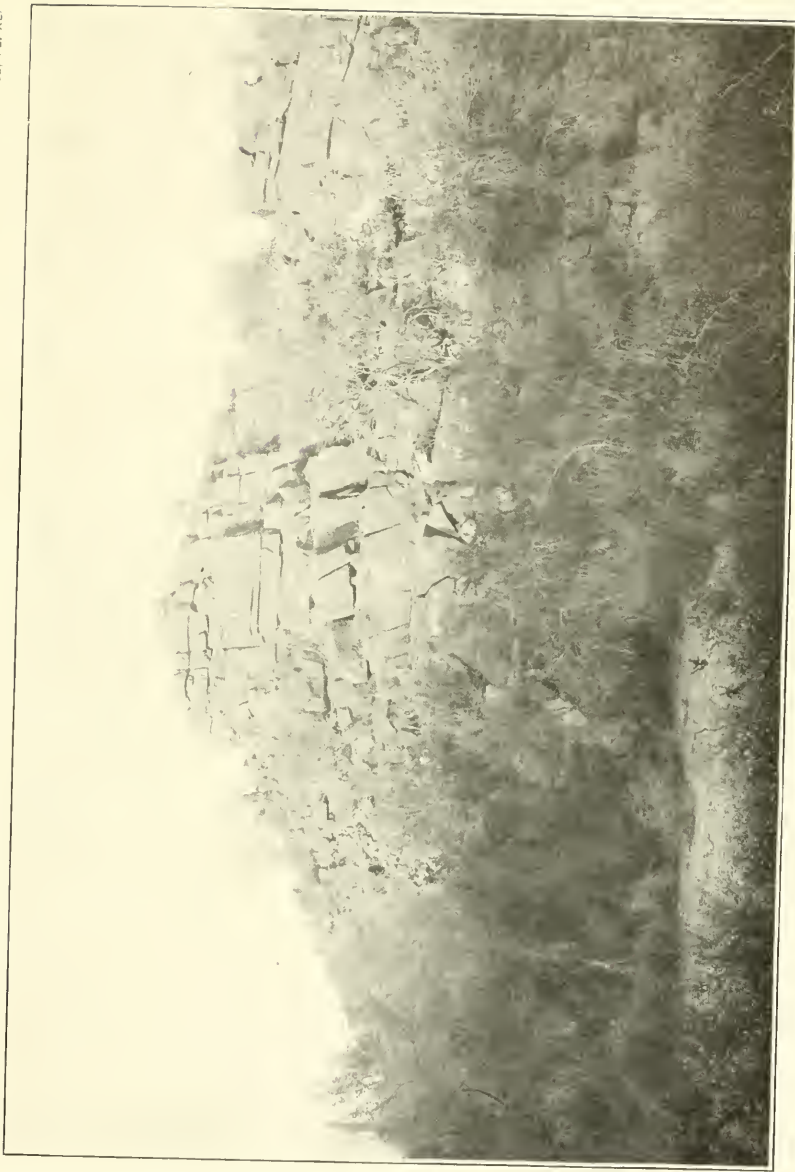
Several good vases, one of them in the collection of the University of Arizona, at Tucson, have been excavated at this ruin, which seems rich in specimens and offers unusual advantages for further study.

3.—AQUITUNO RUIN (AKUTCINY, RUSSELL)

There are several mounds, indicating ancient Casas Grandes, not far from the desert butte, Picacho, that were not visited by the author.

The site of *Cutcia vaaki* (Kistcoit, Russell), frequently mentioned by the early Spanish priests, has not yet been definitely made out, but was possibly east of Picacho, and maybe the mounds at Aquituno are remains of this settlement.

¹ A site near Tucson mentioned in "Garces' Diary" as Laguna still bears the same name. Professor Blake, of the University of Arizona, has shown the author ground plans of ruins in the Tortillas and Mr. Brown reports stone ruins with high walls.



PICTOGRAPHS ON CLIFF NEAR TUCSON

4.—QUITOAC RUIN¹

Another cluster of mounds in the neighborhood of Picacho,² also not visited by the author, appears from reports to be the remains of a considerable prehistoric settlement. In the time of the Spanish fathers there were apparently several Pima rancherías in this locality, which was a constant halting place in early visitations.

5.—RUINS NEAR KWAHADT INDIAN VILLAGES

South of the railroad station called Casa Grande, on the Southern Pacific Railroad, there are Indian villages inhabited by Kwahadts, Papagos, and Pimas.³ Near one of these settlements there is a cluster of mounds, one or two of which are large, indicating buildings of compounds like those at Casa Grande and elsewhere along the Gila and Salt rivers.

The largest cluster of these mounds has been described to me as situated on the road from the "Jack Rabbit Mine" to the "Reward Mine," near an Indian village about 6 miles south of the former. The informant said that while the general appearance of the mounds resembled those of Casa Grande, there were no extensive walls above ground.

III.—SALT RIVER COMPOUNDS

The majority of ancient mounds of the Salt River Valley lie in the neighborhood of Phoenix, Tempe, and Mesa City. Although house walls are now generally hidden, their exposed tops, when traced, show the same compound structure as those of the Gila between Florence and Casa Blanca. Seven such compounds exist in the neighborhood of Phoenix, as shown in Mr. Patrick's map,⁴

¹ *Kihu*, carrying basket; *toac*, mountain.

² Called by the Pimas Taátúkam (Russell) Tacom, which appears in Spanish writers as Ttacca, Taceo, or Quiteak. Dr. Russell mentions the following ruins near Picacho: 1, "Small pueblo ruin" northeast of the mountain, 15 miles from the river; 2, East of the mountain "Kisteoit Vateik," Table Tank; north, Mo'ok' Vateik, Sharp Tank; west, A'alt Vap'tek, Small Tanks; northwest of Akútciny, small pueblo ruins.

³ The region extending south from the Southern Pacific Railroad to the Mexican boundary is ethnologically a most interesting one, pleading for visits of both ethnologists and archaeologists.

⁴ The best published map we have of the distribution of aboriginal ruins and irrigation ditches in this region is by Mr. Patrick, of Phoenix, Arizona, to whom the author is indebted for many kindnesses.

and it is probable that there were formerly others unrecorded, which have in the course of time been leveled to the surface of the cultivated fields. There are also other signs of former settlements of smaller size, many smaller mounds, and banks of irrigation ditches and canals lined with rows of stones, indicating lateral branches.

In general appearance the prehistoric mounds of the Salt River Valley resemble those of the Gila, but the ground plans of a few of them are larger than any of the Gila Casas Grandes. None of them show walls standing above ground, a fact indicating great age.

The Salt River Valley ruins are commonly regarded by the Pimas as older than those along the Gila and Santa Cruz. The legends of these Indians declare that the culture of their builders was somewhat more advanced and older than that of the Gila, but that the compounds of these two regions were inhabited simultaneously. It is said that there was a constant communication between them, and that the relations were not always friendly. An examination of the ruins of the two regions indicates that those of the Salt are more ancient than those of the Gila and the Santa Cruz.

The Salt River Valley compounds may be divided into three groups: A, Phoenix Ruins; B, Tempe Ruins; C, Mesa City Ruins.

A.—PHOENIX RUINS

The ruins and prehistoric irrigation ditches in the neighborhood of Phoenix have been studied by Mr. Patrick, who as surveyor has for many years professionally visited almost every part of this valley. The city itself is built on the site of one or more prehistoric settlements, which have long ago disappeared, its very name being derived from its relation to other more ancient settlements of the region.

The ruins near Phoenix here considered may be grouped as follows: 1, Patrick Compound; 2, Kalfus Mounds; 3, Heard Mounds.

1.—PATRICK COMPOUND

This cluster of mounds lies on the left of the road from Phoenix to Tempe, about half the distance of the Great Tempe Mound from the former city. In its neighborhood there are now many houses, the leveling of the ground for which has greatly changed the aspect of the place since the author's visit in 1892, but outlines of walls and ditches can even now be traced.

2.—KALFUS MOUNDS

West of Phoenix there are two large mounds that may be called the Kalfus Mounds, both of which, especially the smaller, are being rapidly destroyed. A road has been cut through one of these and the material is being rapidly carted away for use elsewhere.¹

The larger of the two ruins west of Phoenix has the compound shape, its surrounding wall measuring 500 by 260 feet, the orientation being about north and south. This surrounding wall incloses two large mounds (fig. 69) in addition to one or two smaller elevations, which are evidently remains of rooms. The material of one of the Kalfus mounds is almost pure adobe, but there are no stones in the walls. The larger Kalfus mound was constructed on a slight

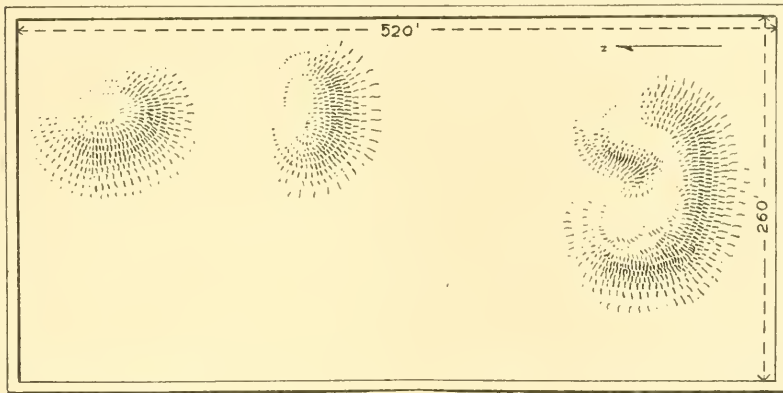


FIG. 69.—Kalfus Mound

natural elevation; the smaller of the compounds measures 275 by 210 feet.

3.—HEARD MOUNDS²

One of the ruins south of the Salt River, opposite Phoenix, called Ruin E by Mr. Patrick, has been considerably leveled by plowing. It consists of a cluster of mounds, including one with an oval form which is much mutilated.²

It is very difficult to trace the surrounding wall of this ruin or to determine whether it was a compound, but another large mound on the same side of the river is surrounded by a rectangular wall, the west side of which is about 200 feet and the south 150 feet long.

¹This "caleche" is much sought for by Americans, as it makes a very firm road-bed.

²The author was guided to these ruins by Mr. Heard, owner of the property on which they stand.

B.—TEMPE RUINS.

The several ruins near Tempe have the same general compound structure as those in the Gila Valley, namely, mounds inclosed in surrounding walls.¹ It would appear that the largest compounds exist in this region, where there are some of the best preserved prehistoric irrigation ditches in Arizona.

There are several descriptions of the Tempe ruins that might be quoted. Mr. J. H. Bartlett's account is as follows:²

"On reaching the great pile, I found it to be the remains of an adobe edifice from two hundred to two hundred and twenty-five feet in length, by from sixty to eighty feet wide, its two sides facing the cardinal points. Portions of the wall were visible only in two places, one near the summit, at the south end, where, from the height of the pile it must have originally been three or four stories high; and the other at the northern extremity, on the western side. These remains just projected above the mass of rubbish and crumbled walls. The rest formed rounded heaps of various heights and dimensions, worn into deep gullies by the rain, the whole presenting a striking resemblance to the mound which marks the site of ancient Babylon.

"The higher walls seen in the sketch probably belonged to an inner portion of the building. Near this is a conical hill, formed, doubtless, by the crumbling away of the higher portion or tower. Near the wall, which projects from the lower portion, at the northern end, are two large masses of this wall which have fallen. The adobe is still very hard, so much so that I could not break it with the heel of my boot. Several broken metates, or corn-grinders, lie about the pile. I picked up a stone pestle and some small sea shells. Along the eastern side are the remains of a long wall, extending beyond the building, now but a rounded heap, which seemed to have formed an enclosure. On the western side is an excavation about four feet deep, and extending from sixty to eighty feet from the main heap, and along its entire length, from which I suppose the mud and gravel to have been taken to make the adobe. To the northeast, about a distance of two or three hundred feet, are the ruins of a circular enclosure. This was not large enough for a canal; nor could it have been a well, as it is too near the margin of the plateau where the canal ran, which would always furnish a supply of water. At the south, two hundred yards distant, are the remains of a small building with a portion of the wall still standing.

"From the summit of the principal heap, which is elevated from twenty to twenty-five feet above the plain, there may be seen in all directions similar heaps; and about a mile to the east, I noticed a long range of these ruins north and south, which the Indians said were of a similar character to that on

¹ From this region and Mesa City have been obtained some of the finest collections of prehistoric objects found in this valley. Among these may be mentioned the complete series collected by the Hemenway Expedition at Los Muertos and that of Dr. J. S. Miller, obtained from various points in the valley.

² Personal Narrative of Explorations and Incidents, 1854, p. 245.

which we stood. In every direction the plain was strewn with broken pottery, of which I gathered up some specimens to show the quality, as well as the style of ornamentation."

Mr. H. C. Hodge¹ thus speaks of the Tempe ruins :

"Six miles east from Phoenix, and two miles from the Hellings mill, now owned by Major C. H. Vail, are the ruins of a large town, near the center of which is one very large building, 275 feet long and 130 feet wide. The debris of this building forms a mound which rises thirty feet above the surrounding plain. The walls are standing about ten feet in height and are fully six feet thick. There seem to have been several cross-walls, and the whole was surrounded by an outer wall, which on the south side was thirty feet from the main wall; on the east, sixty feet; on the north, one hundred feet; and on the west side sixty feet.

"On the north and at the northwest corner were two wings, perhaps guard or watch houses. On the south of the outer wall was a moat, that could be flooded with water from a large reservoir fifty yards to the south. Several other large reservoirs are at different points in and around the main town, which was over two miles in extent.

"A large irrigating canal runs to the south of the large building, which was from twenty-five to fifty feet wide. This canal took the water from the Salt River eight miles above, and can be easily traced for twenty miles or more below. * * * The largest of the old irrigating canals visited and examined by the author is some twenty-five miles above Phoenix, on the south side of the Salt River, near the point where the river emerges from the mountains. This one, for eight miles after leaving the river, is fully fifty feet wide. For this distance it runs in a southwest course through hard, stony ground, and enters on a vast stretch of mesa or table-land, which extends south and southwest from thirty to sixty miles, having an elevation above the river of nearly one hundred feet.

"At about eight miles from where this great canal leaves the river, it is divided into three branches, each twenty-five feet wide, one of which runs in an east of a south course, one nearly south, and the third southwest, the three probably carrying water sufficient to irrigate the whole of the immense plateau before mentioned. Two miles west of where the main canal branches are the ruins of a large town, which extends along the mesa for many miles.

"Near the center of this town are the ruins of the largest building yet discovered. Its ground measurement is 350 feet by 150 feet, with outer walls, moats, embankments, and reservoirs outside the main walls, and ruins of smaller buildings in all directions.

"On the line of the branch canals, distant many miles from this one, are other ruins of towns similar to the others described. Below the great canal and the large ruin described, extending through what is called the Tempe settlement, are other irrigating canals of nearly equal size to the others, and which were taken out of the river many miles below the large one mentioned, and along there are also the ruins of great houses and towns."

Father Sedelmair, according to the last authority, described a ruin 36 miles below the Casa Grande, on the same side of the Gila.

¹ Arizona as it is, or the Coming Country, 1877.

The following quotation¹ evidently refers to the Tempe mound:

"Several mounds were found on the Salt River measuring from 80 feet wide to 120 feet long. One of these is plainly discernible, as our illustration shows, from the stage road at La Tempe. On the other side of the river two mounds larger in size are to be seen, one near Hayden's mill and the other close to East Phoenix. Mr. Bartlett, as well as other explorers, calls attention to the fact that the pieces of pottery so widely scattered show that the vessels were all painted or glazed white inside, an art which the Pima and other Indians do not possess. The La Tempe mound was measured by him, and found to be from 200 to 225 feet long by from 60 to 80 wide. This would give a much larger edifice than the Casa Grande. It is true to the cardinal points of the compass—a peculiarity common to all these ruins and mounds. Father Sedelmair also describes the La Tempe mound, and gave an account, too, of the three-storied building or ruin there which he found at the junction of the Gila and Salt rivers."

I.—GREAT TEMPE MOUND

The largest of all the mounds is the Great Tempe mound,² on the left of the main Phoenix-Tempe road, about 4 miles from the

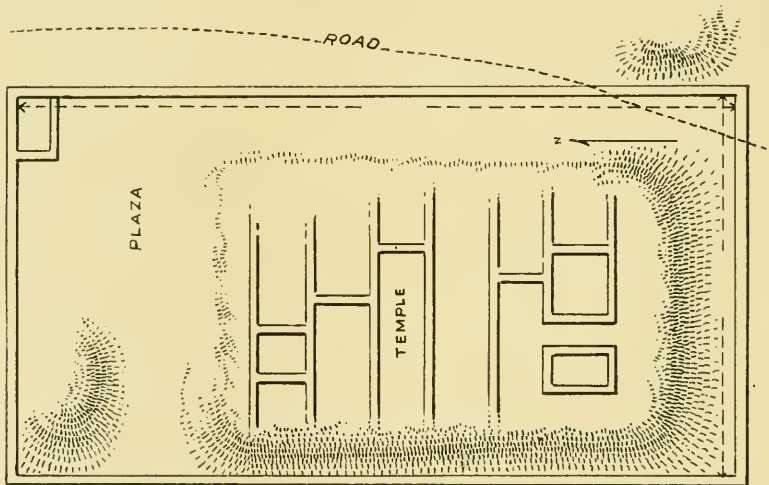


FIG. 70.—Great Tempe Mound

former city. This is probably seen by more white people in the course of a year than any other ruin in Arizona. It is conspicuous from the railroad and is a marked object in all the surrounding country. The main mounds with their walls form one of several clusters, covering more than 40 acres, evidently formerly one of the largest settlements in the Gila-Salt Valley.

¹ Hinton's Handbook to Arizona, pp. 411-412.

² This is possibly the ruin called by Dr. Russell by the name of the chief, S'o'am Nyu'i vaaki.

The largest compound (fig. 70) is oriented north and south, the wall surrounding it being approximately 353 by 246 feet in dimensions. The north wall and the northeast and northwest angles of the compound are entire, and were the earth removed would show unbroken corners. The whole west wall from the northwest to the southwest corner is likewise in fair condition, but the southwest angle, the southwest wall, and the southeast angle are more or less broken, the latter having been washed away by the "Cross-cut" canal. The road following this canal cuts across the southeast side and the Phoenix-Tempe road has more or less obscured or destroyed the south wall.

The large central mound of this compound has been somewhat mutilated.¹ It is from 15 to 18 feet high and shows walls of many rooms, some of them constructed of stone laid in adobe with smooth surfaces. This mound was evidently once covered with fragile walled buildings like those on Compound B of the Casa Grande group, but at present the supports have decayed and the walls are covered by fallen debris.

There are several other smaller mounds in this group, among which may be mentioned a circular depression or reservoir, *vaski*, 1,400 feet north of this compound. About 2,230 feet north of it there is a cluster of mounds, one of them in part excavated many years ago by Mr. F. H. Cushing.²

Of the several other mounds in this vicinity the largest has the form of a compound and is situated about 600 feet west of the first. This compound has the general form of the type, but it has no central mounds indicating large buildings. Apparently its rooms were fragile walled habitations and it closely resembles Compound C of the Casa Grande group.

2.—CARROLL, COMPOUND

This compound, situated about a mile and a half west of Tempe, was not visited in 1907, but was examined by the author in 1892. The massive walled building is considerably worn down and reduced almost to the level of the surrounding plain.

¹Excavations into the east side of this mound were made several years ago by the Arizona Antiquarian Society. The idea that the rooms of this mound were subterranean is erroneous, and the indications are that there were floors one above another as at Compound B, in the Casa Grande group, one room being built on the debris that had accumulated after the lower had been deserted.

²From the many small mounds in this vicinity this cluster of rooms was called Los Pueblitos by Mr. F. H. Cushing, who first opened them.

C.—MESA CITY RUINS

I.—STEWART COMPOUND

The largest ruin near Mesa, situated about two miles and a half north of the post-office, is one of the largest ruins in the Salt River Valley. It is now occupied by Mr. S. O. Stewart and called the "Aztec Poultry Farm." His house and outbuildings stand in the northeast corner of the compound.

This compound is one of the largest and the best-defined in the Salt River Valley, measuring 430 by 250 feet. Its orientation is practically north and south, the majority of the mounds being on the left side. The surrounding wall can still be traced by the slight

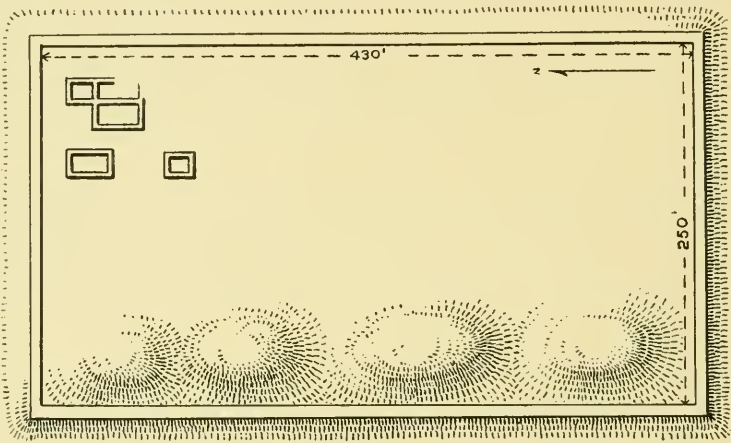


FIG. 71.—Stewart Compound

swell in the surface of the earth. Several rooms that have been excavated exhibit smooth, well-polished walls.

There is a circular mound with depressed interior and raised bank, reminding one of a similar "well"¹ (*vaskki*) at Casa Grande, situated a short distance from the compound.

2.—LOS MUERTOS

The mounds called by Mr. F. H. Cushing "Los Muertos," are those in the Salt River Valley where much work was done by the

¹ Mr. Cushing gives an account of oval structures or "sun temples" having a distinct resemblance to the hollow mound at Casa Grande. According to him, these "sun temples" had smooth floors with fireplaces, banquettes, and evidences of ceremonial use. Remnants of the upright logs that formerly supported a roof and method of construction of the roof are described by Cushing.

Hemenway Southwestern Expedition.¹ The remains are now in the midst of cultivated fields: many formerly conspicuous are invisible, having been reduced to the surrounding level. These mounds are of great interest as the site of the first archæological field work in this valley.

3.—DRAINES'S COMPOUND

Although the compound situated on Mr. Draines's farm is now almost wholly destroyed, its great mound rises as a white or ash-colored elevation in the midst of the cultivated fields, and is conspicuous for some distance, being easily seen from the railroad train. A ditch divides the mound into two parts.

There are many instructive pictographs (pl. XXXIX, figs. *a*, *b*, and *c*) not far from the Salt River.

IV.—RUINS ON THE SAN PEDRO.

The San Pedro River, the largest tributary of the Gila on the south, is in fact the only one of size which rises in Mexico and flows approximately north with highlands on both sides. It is supposed that the trail taken by Coronado in 1540 on his trip to Cibola (Zuni) followed the San Pedro Valley, through which we know Father Kino passed in 1694. Although this was the only known route from Mexico to the unknown north in the 17th century, it was abandoned by the Spaniards in favor of the valley of the Santa Cruz in the following century.

A study of the ruins on the San Pedro leads one to believe that the ancient structures in this region had certain features of the Gila compounds. It is evident that they had stone walls built for protection, inclosing areas in which were erected the fragile walled domiciles of the people. Within this inclosure were also other buildings with massive walls corresponding to the houses in the compounds of Casa Grande.

The San Pedro Valley was inhabited in 1694 by the Sobypuri, agricultural Indians of Pima stock, and from the scanty records

¹ Preliminary Notes on the Origin, Working Hypothesis and Primary Researches of the Hemenway Southwestern Archæological Expedition. Congrès International des Americanistes, 7th session, Berlin, 1888.

It will be seen by a comparison of the author's interpretation of the Casa Grande ruins with those given in this pioneer work that they differ in some particulars. The oval structures at Los Muertos called sun temples were not recognized at Casa Grande or the other ruins here considered. The author interprets the fragile walled buildings as the same as the thin-walled rooms described by Mr. Cushing.

that have come down to us it appears that they lived in rancherias and cultivated farms, the whole valley being artificially irrigated. Their chief, named Coro, accompanied Kino down the river past these rancherias, the names of which he mentions. In 1694 the contest between Sobypuri and Apaches had begun, but the former still held possession of the valley. Later, however, the Sobypuri having been forced from their homes, the tribes along the San Pedro Valley became hostile to Europeans, and the valley ceased to be a line of communication between Mexico and the Gila. For over 150 years following this expedition the trail to the north from Mexico passed along the Santa Cruz River by way of Tucson and through the gap at Picacho into the deserts of the Gila.

An examination of the configuration of the San Pedro Valley from a point 15 miles south of Monmouth to the junction of the river with the Gila has led me to believe that Padre Kino, after following the San Pedro many miles, left it opposite where old Fort Grant now stands, and marched west until he came to the Gila, not far from the present site of Florence. The place where he turned away from the river was probably the rancharia called Victoria del Ojio, not far from the ruin at the mouth of the Arivaipa, which empties into the San Pedro, but in his diary he says that on the 16th of November, "after mass," he followed down the river 6 leagues until he came to the junction with the Gila. We cannot definitely say whether the rancherias mentioned by Kino stood on the same site as the ruins now found in the valley, but it is believed they did. He speaks of the houses as being made of "palos" or "petates," or a kind of jacal structure, which we have reason to suppose housed the common people at the Casa Grande ruins. Probably the buildings with stone walls found in the San Pedro were structurally the same as those the author has called massive walled rooms at Casa Grande and served for citadels, granaries, or ceremonial buildings¹ rather than habitations for the people.

The existence of ruins along the San Pedro has been known for several years, but their character and the kinship of their former inhabitants have been a matter of speculation. A more exact knowledge of these ruins being desirable, the writer included them in his comparative studies and made a brief visit to the lower course of the river in April, 1908, when he examined several of the more

¹ Kino speaks of one building as a "capilla," chapel, as if it were different from others, but whether it was a massive walled house or not does not appear evident from his brief mention.



1



2

RUIN OPPOSITE OLD FORT GRANT

important ruins in this part of this valley, entering it from the junction with the Gila.

Prehistoric mounds of considerable size were first encountered in the immediate neighborhood of Dudleyville, at the mouth of the San Pedro. One of the most striking evidences of the former presence of Indians at that point are the pictographs, possibly of Apache origin, in a cave not far from the road on the left bank of the river. Ruins are found at intervals as far up the river as the exploration was continued.

I.—RUIN OPPOSITE OLD FORT GRANT

Old Fort Grant is situated a short distance north of the mouth of the Arivaipa Canyon, on the east side of the San Pedro. Directly opposite the fort to the south, on the low hills, there are remains of walls, rows of foundation walls, and piles of stones, indicating the site of a considerable settlement (pl. XLII, figs. 1, 2). Although here and there a rock formation of red color occurs in this neighborhood, neither the walls nor the soil are red, so that environment adds little to support the theory that here was situated the red house (Chachilticalli)¹ of Castaneda. The rectangular arrangement of rows of stones characteristic of compounds is indicated in this ruin. The east wall (fig. 72) of this rectangle measures not far from 250 feet. In the inclosure there is a large central mound composed of stones, the altitude of which is from 10 to 15 feet.

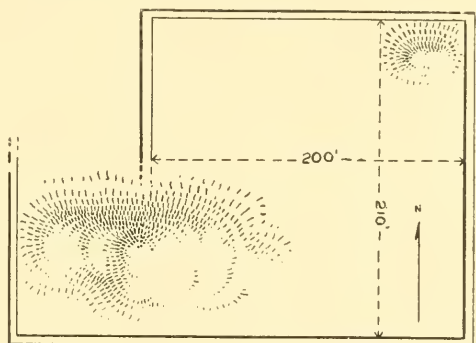


FIG. 72.—Ruin opposite Old Fort Grant

On a neighboring mesa, situated a few hundred feet south of that on which the compound lies, there are many piles of small stones suggesting a cemetery.

The author believes that the ruin near the mouth of the Arivaipa

¹ It has been suggested that the building called by Castaneda Chachilticalli, or Red House, was situated near Old Fort Grant, but neither the rock in place, earth, nor stones that compose the walls examined by the author in that neighborhood have a red color.

may have been the last rancheria on the San Pedro mentioned by Kino in 1694 and called by him Victoria del Ojio. The chief of this settlement was named Humari. It consisted of 70 houses, the walls of which were made of sticks and matting and contained 380 persons. One of these houses was capacious enough to hold all the soldiers in the expedition.

2.—RUIN OPPOSITE MONMOUTH

Just across the San Pedro, opposite Monmouth, there is an interesting ruin, the stone walls of which are situated on an elevation overlooking the river.

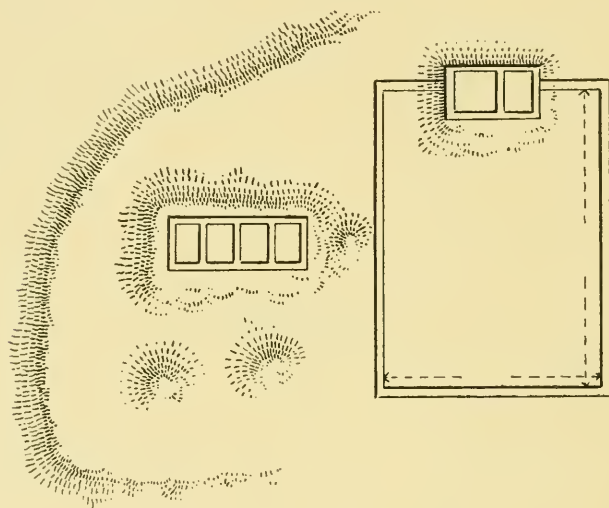


FIG. 73.—Ruin opposite Monmouth

This ruin consists of a central building, the subterranean rooms of which, excavated by Mr. Childs, have a surrounding wall (fig. 73) inclosing a rectangular area measuring about 275 feet on the north and 178 on the west sides. The wall of this inclosure cannot be followed throughout, as there is a continuation of the wall beyond the rectangle on the south side. On the east side there are several rooms, the form and dimensions of which were not traced with any accuracy. This settlement may have been Kino's Tutoida,¹ said to have been situated 18 miles south of the mouth of the Arivaipa.

¹ The rancheria at this point was composed of 20 houses and 100 souls, according to Kino's diary.

3.—SEVEN MILE RUIN

This ruin is situated 7 miles from Monmouth, on the left bank of the river. One takes the road on the east side of the river to Clark's ranch, then crosses it to the bluffs on the side. These bluffs have been very much eroded since the site was inhabited and many of the walls have been washed out, revealing many specimens of minor antiquities.

The surface of the ground is covered in places with fragments of pottery. There are no high mounds, but the rooms are indicated by the tops of their walls projecting out of the sand. These rooms seem to have been arranged in blocks.

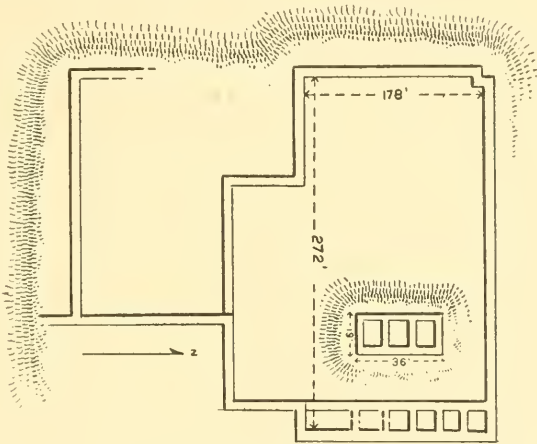


FIG. 74.—Fifteen-Mile Ruin

4.—RUIN NEAR CLARK'S RANCH

This ruin is remarkable in having indications of circular rooms that remind one of kivas or subterranean "pit dwellings." These resemble reservoirs or wells, their true nature being as yet unknown.

5.—FIFTEEN MILE RUIN

This ruin (fig. 74) is situated 15 miles up the river from Monmouth, on the opposite side of the road from a small ranch house. Not far from it there is a natural rock formation of red color that might be mistaken for a house perched on top of a much-eroded mesa. It is suggested that this building may have been at or near the site of Kino's rancheria Arivaipa, which was not more than 27 miles from the mouth of the Arivaipa Canyon.

Specimens from San Pedro Ruins

The only collection of small antiquities from the ruins along the San Pedro examined by the author are those owned by Mr. E. O. Childs, at Monmouth, who has kindly allowed the author to examine and publish an account of them. The prehistoric inhabitants of this valley cremated¹ their dead, a vessel with calcined human bones having been found by the author near one of the houses at the ruin 15 miles above Monmouth, where the majority of objects were obtained.

The most remarkable specimen in the collection (fig. 75, *a, b*) is the figure made of black stone resembling lava and representing a quadruped with curved horns like those of a mountain sheep. The most unusual feature of the specimen is a circular depression in the back, notched on the rim, as shown in the figure.²

Several clay effigy figures (fig. 75, *c, f, h*), among which are the two-figured, have been found in the San Pedro ruins. An arrow polisher and a circular stone disk recalls similar objects found in the ruins on the Gila. Perhaps the most exceptional piece of pottery consisted of a double neck of a vase, *d*, of which the bowl is missing. The pottery is a dark brown ware, smooth on the surface and decorated. The people of the San Pedro had flat shovels made of slate, not unlike those from Casa Grande, and made use of perforated stones, *g*, and ornaments, *e*, recalling those commonly excavated in the Salt River Valley ruins. The culture of the people, as shown by the small collections of known objects, did not greatly differ from that of the rest of the Gila, but environmental conditions did not lead to the erection of Casas Grandes like those near Phoenix and Tempe.

CONCLUSIONS

From the points where the Gila River and its two tributaries, the Salt and Santa Cruz, emerge from the mountains, their broad valleys become level or rolling and slightly elevated, forming low mesas. These valleys are practically deserts, on which the rainfall is not

¹ Two methods of disposal of the dead—one, house burial; the other, cremation—existed among the inhabitants of the Great Houses of the Gila-Salt region. This might mean that two distinct peoples occupied this valley or that the builders of the Casas Grandes were composite in stock. Possibly it might be interpreted as an indication that one of the components was akin to tribes near the mouth of the Gila, where cremation is still practised.

² There is a similar stone idol in the museum of the University of Arizona, at Tucson.



FIG. 75.—Prehistoric objects from San Pedro Valley

regular enough for successful agriculture without irrigation. They present a good field for the evolution of a sedentary, agricultural stage of human culture dependent on artificial irrigation. The extent of the aboriginal ditches that can be traced for miles show that the prehistoric inhabitants had discovered and applied a more extensive system of irrigation than any of their contemporaries who dwelt in other sections of what is now the United States. Here was developed a highly organized autochthonous stage of social life which we have good evidence to believe was of great antiquity.¹ The indications are that it was from this center that there radiated a form of culture which influenced the whole area now embraced in the territories of New Mexico and Arizona and the southern parts of Utah and Colorado.

In order successfully to bring an area of the size of the Gila and Salt River valleys under cultivation, the construction of large irrigation ditches was necessary, but these great canals could not be dug by individuals, and were possible only through cooperation of many workers. There must have been an intelligent leader to carry this work to completion. This cooperation of many under one head meant a high social organization. The natural result would be a sociological condition higher than any that existed among bands of hunters, fishermen, or even agriculturists depending on natural rain-falls.

A people accustomed to building irrigation canals naturally became accustomed to cooperation and combined to construct other public works, as houses for defense, for ceremony, or for storage purposes. Hence there occur with these extensive irrigation ditches great houses, and wherever the population was the densest, there are great buildings and canals, the most numerous and largest.² Such Casas Grandes as the Gila compounds are to be expected among people in this high social condition resulting from cooperation.

There seems no valid objection to the theory that these settlements were built by ancestors of the present house-building Indians of the Southwest. It can hardly be supposed that the builders of these Casas Grandes disappeared from their native land without descendants, even if they lost the habit of constructing massive houses and

¹ A somewhat similar culture arose independently in the valley of the Casas Grandes in Chihuahua, which in certain arts, as ceramics, reached a higher stage of development, perhaps being unmolested for a longer period.

² The existence of artificial reservoirs, or *vashki*, in the deserts, miles from any compound, implies an aboriginal population in their neighborhood living in huts, or jacales, the walls of which can no longer be traced.

compounds. The ancient mode of life and difference in their style of building from that of Pueblos and Pimas are adduced to support the theory that the latter are not descendants of the inhabitants of the Casas Grandes. It is held that when the ancients left their houses they migrated to other lands, where we should now look for their descendants. This supposed disappearance of the ancients was a favorite theory with some early writers, like Clavijero, who identified the ancients of the Gila Valley as Aztecs and regarded these buildings as marking one of the halting places of the Mexicans in their southern migrations. Some authors have gone so far as to regard the Gila Valley as a cradle of Aztec culture.¹

Other writers have held that the descendants of the original peoples migrated into the northern mountains and later built the cliff houses and pueblos of northern Arizona and New Mexico. It is probable that certain clans were driven away from their homes and forced into other regions by the changed conditions as inroads of hostiles. This theory is in fact supported by legends still told by the Hopi and other pueblo people. It is logical to suppose that other clans of prehistoric builders remained in the valley and continued to live in houses similar to those their ancestors inhabited, even after they had lost the custom of building the massive walled structures that distinguish the ancient phase of their culture. The survivors of those who remained are the modern Pimas Kwahadts and Papagos, whose legends distinctly state that the ancients (*hohokam*) built Casa Grande.

The abandonment of the custom of building Casas Grandes dates back to prehistoric times, and none of the great buildings in the Gila were constructed subsequent to the arrival of the Spaniards. Casa Grande was a ruin when Kino discovered it, and the great buildings along the Salt River appeared to have been abandoned before Casa Grande was deserted, for old Pima legends state that the Great Houses of the Salt River were the oldest in the valley. The war between nomads and the house-builders of the Gila, who overthrew the Casas Grandes, had practically ceased before the advent of the Spaniards, although in 1694 the Sobypuri along the San Pedro were holding back the Apaches,² a hostile encroachment from the east.

¹ No doubt some of the people did migrate southward, but the acceptance of this conclusion does not mean that they later became Aztecs. There is little in common between objects found in the valley of Mexico and that of the Gila.

² There is nothing to show that these people overthrew the inhabitants of the Casas Grandes, and it is much more likely that the earliest foes of the people of the Great Houses came from the west, from the Gulf of California.

A few years later the Sobypuri were forced westward and the Pimas, who were probably the offspring of an earlier union of hostiles and the house-builders they conquered, retreated to Casa Blanca and Sacaton, leaving the Apaches to raid the whole of the eastern part of the Gila Valley, including the San Pedro.

The author would state in conclusion that he believes the abandonment of the Casas Grandes was brought about by an invasion of nomads from farther down the river, in prehistoric times. The aborigines who inhabited the valley of the Gila when the Spaniards first entered it were a mixed race, with blood of conquered and conqueror. These people—Pimas, Papagos, and others—practically inhabited fragile walled houses built in two forms—some rectangular, others circular—the former of which were practically the same as those of their ancestors who built the Casas Grandes. The circular dwellings may have been introduced by the alien prehistoric hostiles from the west. As the Great Houses on the Salt and Santa Cruz seem to have been destroyed before those on the Gila, the conclusion would be that the prehistoric enemies came from the west and south. The advent of the Apaches and their struggles with the mixed race that replaced the builders of the Casas Grandes is a subsequent practically historical event.