

ACKNOWLEDGMENT

The writer wishes to thank Dr. Byron Cummings and Dr. John Provinse of the Archaeology Department for their many aids in the preparation of this paper; also the staff of Gila Pueblo at Globe for the many courtesies extended in the form of statistics and certain photographs. The writer is also grateful to Mr. and Mrs. Smallhouse of Redington, Arizona, for permitting excavations on their property, and to the students of the department who have so unselfishly given their time to field work in the San Pedro Valley.

All artifacts pictured in this paper are in the Arizona State Museum in Tucson.

* * *

TABLE OF CONTENTS

PART I	- INTRODUCTION	1
PART II	- THE SAN PEDRO VALLEY	8
	Geography and Topography	8
	Climate	9
	Flora and Fauna	14
	Geology	18
PART III	- EARLY DOCUMENTARY HISTORY	25
	SÒBAIPURI	25
	Introduction	25
	Geography	27
	The Region	27
	Sobaipuri Settlements	28
	History	33
	Discussion of the History	42
	LANGUAGE AND PHYSICAL TYPE	45
	CULTURE	46
	Habitations	46
	Clothing	48
	Food-stuff	49
	Food: By Hunting and Fishing	49
	Food: By Gathering	50
	Food: By the Practice of Agriculture	51
	Tools and Weapons	52
	Personal Adornment	53
	Political Organization	53
	Social Practices	55
	Religion	55

(Continued on next page)

TABLE OF CONTENTS

PART IV - ARCHAEOLOGY	56
ARCHAIC PERIOD	56
PUEBLO PERIOD	62
Culture Areas Affecting the San Pedro River Valley	65
Red-on-Buff Culture (Hohokam)	66
Gila Polychrome	70
Mimbres	74
Chihuahua	76
REDINGTON SITE	78
The Ball-court	79
Bayles Ruin: Architecture	81
Bayles Ruin: Material Culture	87
Artifacts of Stone	87
Pottery	94
Artifacts of Bone	97
Bayles Ruin: Conclusion	97
PART V - RECAPITULATION	99
BIBLIOGRAPHY	102

TABLE OF PLATES

PLATE 1 - Chronological Chart of Development of Human Culture in the Southwest	7
2 - General Views: San Pedro River Valley	10
3 - General Views: San Pedro River Valley	11
4 - Vegetation Types: San Pedro River Valley	15
5 - Geography: San Pedro River Valley - 1784	19
6 - Distribution: Sobaipuri in San Pedro River Valley - 1539	32
7 - Distribution: Sobaipuri in San Pedro River Valley - Approx. 1700	36
8 - Distribution: San Pedro Valley Sobaipuri Shortly after 1762	41
9 - Typical Archaic Type Sites Southeastern Arizona	57
10 - Archaic Milling Stones	58
11 - Types of Early Pueblo Sites	63
12 - Types of Late Pueblo Sites	64
13 - Typical Early Red-on-Buff Typical Late Red-on-Buff	67
14 - Early Gila Polychrome Late Gila Polychrome	72
15 - Mimbres Pottery Chihuahua Pottery	75

(Continued on next page)

TABLE OF PLATES

PLATE 16 - "Ball-Court" at Redington	80
17 - Unit Pit-house Contiguous Pit-house	82
18 - Typical Fire-pit	85
19 - Metates: Redington Site Manos: Redington Site	88
20 - Axe and Maul Types: Redington Site Pigment Mortar and Arrow-Shaft Polishers: Redington Site	91
21 - Stone Spades and Hoes: Redington Site Polishing Stones and Problematical Stone: Redington Site	93
22 - Bone Implements: Redington Site Plain-ware Olla: Redington Site	96

PART I

INTRODUCTION

The region under consideration in this paper is a part of the vast territory that makes up the so-called Southwestern division of North American archaeology.

In order that the reader may know the place of the San Pedro River Valley, Arizona in the development of Southwestern archaeology as a whole it might be wise to give a short resume of man's progress in the region.

The area that falls into the category of Southwestern archaeology is set off by the occurrence of certain basic complexes which tend to hold it together as a unit, or as a region which, due to its environment and original stock, produced the culture which is classified as Southwestern. Arizona and New Mexico formed the center of this development, but the distribution as a whole is extensive, including a large part of the states of Utah, Colorado, and Nevada. Eastern California, west Texas, western Oklahoma and Kansas, as well as northern Sonora and Chihuahua have made their contributions to the study of this field.

Man found himself existing at a very early time in the Southwest. New evidence is coming to light every little

while relative to the great antiquity of man in America. The most widely accepted are the finds made at Folsom, New Mexico, where a number of well chipped projectile points were found in unquestionable association with the remains of extinct species of bison.¹

At Gypsum Cave, Nevada, Dr. Harrington revealed evidence of man having existed at a time contemporaneous with the giant ground sloth.²

The finds made by Professor Cummings in the Sulphur Springs Valley, Arizona, of remains of human activity associated with fossilized remains of extinct mammals is no less important.³

Mr. Sayles of Gila Pueblo has cross-checked finds made in southeastern Arizona with those of the Edwards plateau of Texas and feels that according to stratigraphy they lie three horizons below those of Folsom, New Mexico.⁴

In those archaic times man lived in the open or in nest-like structures in the caves. The atlatl and the club were his important weapons. Physically, he was tall and long-headed, muscular and well proportioned.⁵ Until further

-
1. Cook, H. J., New Geological and Paleontological Evidence BEARING on the Antiquity of Mankind in America. Natural History, vol. XXVII, no. 3, pp. 240-247.
 2. Harrington, M. R., Gypsum Cave, Nevada, Southwest Museum Papers, No. 8.
 3. Cummings, B., Class Notes, 1932-36 inclusive.
 4. Sayles, E. B., Conference, February, 1936.
 5. Cummings, B., op.cit.

work is done, the meagre evidence relative to Archaic Man must suffice. His origin is still undetermined.

About 900 A.D., a change was beginning to take form in our Southwest. It appears that a people were crowding in from some unknown region - a people who brought in a fired pottery, a people who differed physically from their fore-runners in that they were shorter, more slightly built and had a head index which lay largely in the brachcephalic grouping. From that time onward a steady upward development in their arts continued until the "great drouth" of 1276¹ produced a cultural backset which was never overcome.

A rather definite sequence of house-types seems to have followed in order, viz. circular,² transitional,³ and rectangular pits.⁴ This cultural influx brought the surface house, very crude we must admit, but which, when once started, finally culminated with those fine monuments like Betatakin and Pueblo Bonito. Following this influx came the small house unit-types and the great pueblos such as rambling,⁵ compact,⁶ and compound,⁷ the latter being determined geographically, viz. cliff, mesa, or valley types.

-
1. Douglass, A. E., Dating Pueblo Bonito and Other Ruins of the Southwest, Pueblo Bonito Series, no. 1, p. 49.
 2. Juniper Cove, Shabikichee Village.
 3. Martinez Hill.
 4. Martinez Hill; Flagstaff; Tanque Verde.
 5. Betatakin (Rambling Cave).
 6. Kinishba.
 7. Casa Grande.

Paralleling this architectural development we see the other cultural components rising with equal rapidity.

Pottery, which in the circular-pit period was a simple black-on-gray variety, rose in complexity, adding variations from time to time until at last the original is lost in a maze of pottery types which today have the archaeological field in a hub-bub attempting to find new names for them. Pottery on the whole, however, may be classified into plain, coiled, and corrugated wares, two-color pottery and polychrome.

In 1276 came. The prayers for rain went unanswered. A merciless sun shone out of a cloudless sky withering man's feeble efforts. The ancient springs were becoming mere seeps, finally disappearing. The ghastly truth finally dawned; a great drouth was upon them! The curse of the Gods was laying waste the land of their fore-fathers.

Year after year this dreadful nightmare continued --¹ first one group would take leave of their old homes, going to seek a place upon which the Gods did not frown, where the life-giving fluid was never-failing. Others followed. This fight for a bare existence caused the people to forget many of the arts at which they had become so proficient. The great upward esthetic movement had been stalled.

1. According to Dr. A. E. Douglass, this drouth lasted for 23 years - from 1276 to 1299 A.D.

We find the Indian after 1300 A.D. living in great fortified centers. Had the drouth pushed the Apache raiders down from the north?¹ If so, the pueblo dwellers were faced with a two-fold problem. Is it any wonder that their arts had fallen so much in arrears?

For a period of several hundred years, they lived under this new stress of invasion and social chaos. Unknowingly they were being conditioned for the coming calamity. This came from the south. A strange fair-haired people, led by a black demon, entered their territory in search of gold, land, and souls. This first entrada, unsuccessful as it was, heaped upon their already bent shoulders the insult of the rape of their Gods. These incoming peoples were attempting to force upon them a belief which seemed so futile; one which was so far removed from the close contacts which they had enjoyed with those basic elements of nature.

As the years rolled on, the Spanish continued their influx. Our "Americans" were herded under martial law into villages of convenient sizes or were held within the bonds of their mesa strongholds. Secretly, the rites of their fathers were practiced, but not without punishment. The interest for existence failed them. They became a listless,

1. In looking at the table of dates in Dr. Douglass' "Dating Pueblo Bonito and Other Ruins of the Southwest", pages 51-54 inc., it is possible to see groupings as to locations at a given chronological period.

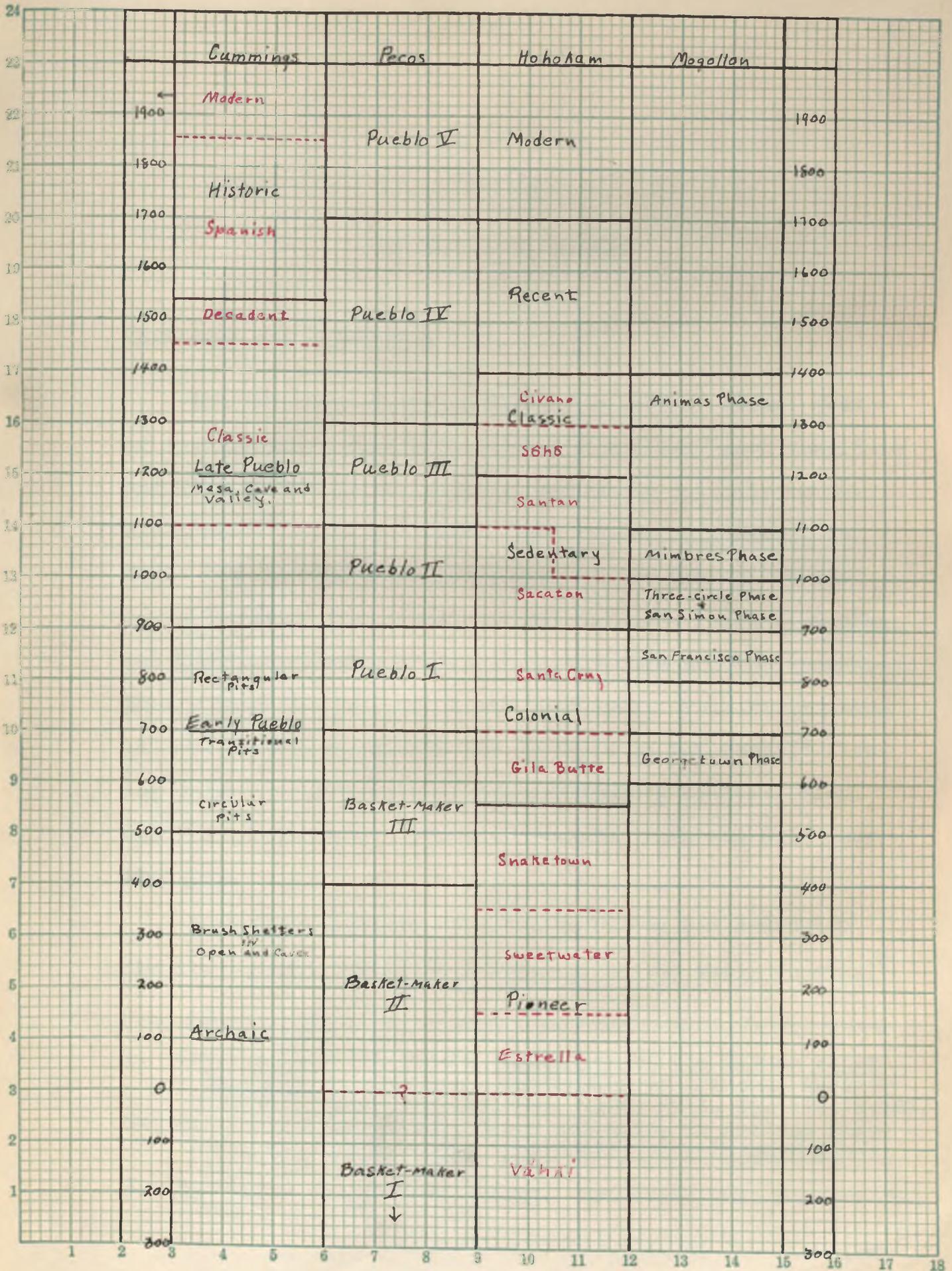
heartbroken, beaten humanity whose very social structure had disintegrated. When man, who has lived so close to God as did the Indian, is deprived of his faith, he cannot last. In a final effort these groups arose as a unit and overthrew their oppressors. But, it was too late - the damage was already done. Pride had fled.

So it has been since the beginning of time, the meek and the kind have ever fallen under the power of "civilization."

Today, when traveling through the Southwest, we are able to see vestiges of a once vast population living in the shadows of their past. They are neither red-men nor white, carrying only the name "white man's burden." Let us then endeavor to bear this burden of repentance for our wrongs to them and give to them that which they deserve as human beings.

The foregoing is but a shadow-picture of our Southwest from man's early beginnings to the present day. The area of the San Pedro River Valley, Arizona, though small, played its part in this great civilizing drama.

Plate I is a chronological chart of the development of human culture in the Southwest as a whole as seen by eminent students in the field.



PART II

THE SAN PEDRO VALLEY

Geography and Topography

The San Pedro River occupies the general desert area of southeastern Arizona between 110° and 111° west longitude and 31° and 33° north latitude, extending slightly to the south of 31° north latitude. Next to the Salt River, it forms the most important tributary of the Gila.¹ On the eastern side of the valley lie the Galiuro, Dragoon, Bisbee, and Tombstone Mountains, while to the west are the Huachucas, Whetstones, Rincons, and Santa Catalinas. This river heads in Sonora, Mexico, at the old presidio of San Pedro,² flowing slightly northwest through portions of Cochise, Pima, and Pinal Counties, ultimately emptying into the Gila near Winkelman.

Generally speaking, the valley of the San Pedro (or the Rio Quiburí, as it is designated in the early records)³

-
1. Catlin, Clifford Norman, Character of the Ground Water Resources of Arizona. University of Arizona, Agricultural Experiment Station, 1926, Bull. No. 114, p.183.
 2. Blake, William Phipps, "Lake Quiburis, An Ancient Pliocene Lake in Arizona" University of Arizona Monthly, Feb., 1902, vol. 4, p. 107.
 3. Bancroft, Hubert Howe, Works. San Francisco, History Co., 1889, vol. 17, p. 355.

parallels the Santa Cruz valley lying to the westward and the Sulphur Spring valley to the east. The river is approximately 170 miles in length,¹ its valley ranging in width from 10 to 20 miles.² The elevation of the San Pedro varies from 2,204 feet at Dudleyville near the mouth of the river to 4,180 feet at Hereford near the Mexican border.

Some thirty years ago agriculture was extensive in the lower part of the valley. Overgrazing had denuded the terrain of vegetation, permitting the run-off to gully deeply into the loose valley fill and in some localities to sculpture it into typical "bad land" formations. Erosion has likewise deepened the river channel so that it is no longer an easy matter to divert the water into irrigation ditches. The stream bed is now some 50 or 60 feet below the floor of the valley at Benson.³

Climate

Rainfall in the San Pedro valley is confined chiefly to two seasons per annum--the winter rains occurring in December, January, February, and March, the summer rains in July, August, and September.⁴ The winter rains are gentle,

-
1. Catlin, op. cit., p. 183.
 2. Macdougall, Daniel Trembly, Botanical Features of North American Deserts. Washington, Carnegie Institution of Washington, 1908., Pub. No. 99, p. 49.
 3. Ibid.
 4. Smith, Howard Vernon, The Climate of Arizona. Univ. of Arizona, Agri. Experiment Station, 1930, Bull. No. 130, p. 147.



GENERAL VIEWS: SAN PEDRO RIVER VALLEY, ARIZONA.



GENERAL VIEWS: SAN PEDRO RIVER VALLEY, ARIZONA.

continuing for several days, while those of summer, local in character, may form torrential downpours of short duration, generally in the mountainous areas.¹ The resulting run-off rushes into the tributaries of the river, often causing disastrous floods. Data collected by the United States Geological Survey show a minimum of 25,000 acre feet run-off (1913) and a maximum of 150,000 acre feet (1914).² Throughout much of the river's course the flow during the dry season is entirely underground.

Dissolved solids, such as potash, phosphoric acid, and nitrogen are contained in the sediments carried by the San Pedro.³ These vary from a small amount in time of flood to marked salinity in time of low water.⁴ Flood waters are distinctly black alkaline, while low waters are hard, containing sodium chloride (common salt), hydrous calcium sulphate (gypsum), and calcium and magnesium carbonates.⁵

Annual rainfall varies with the elevation above sea

-
1. U.S. Dept. of Agriculture, Weather Bureau, Climatic Summary of the United States..Section 26--Southern Arizona. Washington, Govt. Printing Office, 193-.
 2. Catlin, op.cit., p. 183.
 3. Forbes, Robert Humphrey, The River-Irrigating Waters of Arizona--Their Character and Effects. Univ. of Arizona, Agricultural Experiment Station, 1902., Bull. No. 44, p. 189.
 4. Ibid., p. 191.
 5. Ibid., p. 191.

level, and since the valley of the San Pedro ranges from over 2,000 feet to over 4,000 feet, the annual precipitation probably averages close to 12 inches.¹ Records from Dudleyville show an average of 14.6 inches per annum, while at Benson and Hereford the amount is somewhat less.²

The atmosphere is relatively dry, and there is the wide range of temperature between day and night so characteristic of arid regions.³ Over a period of 47 years, the average annual temperature at Benson was 64.3°, while at Dudleyville, where records extend back for 33 years, the annual average was 64.5°.⁴ Additional records made in the same localities show an average annual minimum temperature of 44.8° and 48.5°⁵, as opposed to an average annual maximum temperature of 80° and 80.4° at Benson and Dudleyville, respectively.⁶ Snow falls occasionally in the valley, records at Benson (elevation 3,523 feet) showing an average annual precipitation of 2.2 inches over a period of 33 years.⁷

Artesian wells, varying in depth from 500 to 900 feet, are numerous, but the flow is limited.⁸ The water, of good quality but containing black alkali, is used primarily for domestic purposes and for irrigation on small tracts of land.⁹

-
1. U. S. Dept. of Agriculture, Weather Bureau, op.cit., p.2.
 2. Ibid., p. 11.
 3. Ibid., p. 1.
 4. Ibid., p. 22.
 5. Ibid., p. 23.
 6. Ibid., p. 23.
 7. Ibid., p. 22.
 8. Catlin, op.cit., p. 183.
 9. Ibid., p. 183

Flora and Fauna

The Arizona Succulent Desert subdivision of flora in the United States includes the region occupied by the San Pedro valley.¹ Since this valley has a fair range of altitude, vegetation is somewhat varied, consisting largely of microphyllous shrubs mingled with non-succulent plants and various types of succulents.² As is the case in semi-arid regions, owing to the lack of sufficient moisture, vegetation is widely spaced, low, and displays a mingling of types which differ greatly in form, size, manner of branching, and other respects.³

The most important shrubs are the mesquite, which attains its best growth on the alluvial bottom lands, and the creosote bush or greasewood.⁴ The desert and narrow-leaf saltbush, the palo verde, and the cat'sclaw find a congenial habitat in the drier areas away from the stream.⁵ Outstanding are the various species of cacti, such as the prickly

-
1. Livingston, Burton Edward and Shreve, Forrest, The Distribution of Vegetation in the United States, as Related to Climatic Conditions. Washington, Carnegie Inst. of Washington, 1921., Pub. No. 284, p. 34.
 2. Ibid., p. 34.
 3. Shreve, Forrest, "Plant Life of the Sonoran Desert." Scientific Monthly, March, 1936, vol. 42, p. 199.
 4. Macdougall, op.cit., p. 74.
 5. Shantz, Homer Leroy, Natural Vegetation. Grassland and Desert Shrub, Washington, Govt. Printing Office, 1924. (Atlas of American Agriculture...Pt. 1. The Physical Basis of Agriculture...Section E), p. 24.



VEGETATION TYPES: SAN PEDRO RIVER VALLEY, ARIZONA.

pear, ocotillo, bisnaga, cholla, and yucca. The small agave flourishes on the mountain slopes, while cottonwoods, willows, and other moisture-loving flora grow along the banks of the river.

The seasonal rains bring annual grasses and other herbaceous plants. During the rainy months of spring and early summer, wild flowers--thistle-poppies, verbenas, and a host of additional species--spring up in profusion.

No less interesting than the flora of the San Pedro valley are the numerous species of fauna. For the most part, the valley lies within the Lower Sonoran life zone. Only in some of the high mountain ranges along its borders are the Upper Sonoran and Transition zones reached. It is in these Lower Sonoran river valleys, of which the San Pedro is a typical example, that the highest development of many of the distinctive southwestern types of desert fauna occurs.¹ Particularly abundant are the birds, many species of which are resident in the region throughout the year. A few of the better known ones are the desert quail, Mexican ground dove, saguaro screech owl, burrowing owl, road-runner, Gila woodpecker, desert songsparrow, Arizona cardinal, cactus

1. Swarth, Harry Schelwald, A Distributional List of the Birds of Arizona. Hollywood, Calif., Cooper Ornithological Club, 1914, p. 91.

wren, and the buzzard.¹ Summer visitants include the white-winged dove, Texas nighthawk, crested flycatcher, Arizona hooded oriole, western blue grosbeak, and the Sonora warbler.²

The San Pedro valley is likewise the habitat of numerous animals. Bobcats and cougars descend from the nearby mountains to prey on livestock feeding in the valley; beavers and muskrats inhabit the stream itself.³ Coyotes and foxes help to keep down the numerous jackrabbits and cottontails which have their burrows everywhere. Ground squirrels, pocket gophers, and kangaroo rats, together with badgers, bats, and several species of skunks comprise the bulk of the smaller animal inhabitants. Near the headwaters of the San Pedro the Sonora peccary, the long-nosed Nasua or coon cat, and the great spotted jaguar occur sporadically, occasionally straying over the border into the United States.⁴

Of prime importance are the poisonous reptiles which live along the river banks and farther back in the drier areas. Snakes include the western diamond back, the horned rattler or sidewinder,⁵ and the Sonoran coral snake. A few

-
1. Swarth, op.cit., p. 91.
 2. Ibid., p. 90.
 3. Bailey, Vernon, "Dwellers in the Desert." Nature Magazine, February, 1934, vol. 23, p. 64.
 4. Ibid., p. 63.
 5. Vorhies, Charles Taylor, Poisonous Animals of the Desert. University of Arizona, Agricultural Experiment Station, 1917, Bull. No. 83, p. 359.

harmless types are worthy of mention--the bull snake, the Arizona red racer, and the Mexican garter snake. Among the lizards the Gila monster is the only poisonous species encountered. Others which are harmless include the horned lizard (or horned "toad"), the western collared lizard, the whiptail lizard, and the banded Gecko. Frogs and toads dwell in the moist areas near the river.

There are numerous species of insects, all typical desert dwellers--the scorpion, centipede, tarantula, vinegarone (or mata venado), praying mantis, and wasps, bees, grasshoppers, and ants in abundance.

Geology

The San Pedro valley occupies portions of Pinal, Pima, and Cochise counties, Arizona, and reaches as far southeast as the Mexican border. A living stream extends throughout its entire length.¹ Mountains of this area are residual remnants resulting from uplift of the block fault type. Some of the blocks are, in reality, horsts, having undergone slight or no rotation.² The orogeny which produced the mountains brought the Pliocene period in this region to a close. No further elevation has occurred, although there is

-
1. Smith, George Edson Philip, Personal Interview.
 2. Bryan, Kirk, "San Pedro Valley, Arizona, and the Geographic Cycle" Geo. Soc. of America Bulletin, vol.37, p. 170.

a possibility of broad uplift over the entire area.¹

According to Bryan,² after the Pliocene disturbance a long period of erosion ensued, during which time the Tombstone pediment, a partially peneplained surface, was formed. Residual remnants resting upon this pediment are composed either of rocks more resistant to erosion or of formations at some distance from the main line of drainage. Before the Tombstone pediment was completely peneplained, incision of the streams took place, and the cycle was broken, producing the Whetstone pediment, similar to the first. This cycle was in turn interrupted by further incision of the streams, which resulted in the development of a still lower terrace--the Aravaipa. Below this are the stream valleys which are rapidly eroding the Pleistocene deposits and the unconsolidated recent valley fill. The underground water supply occurs in these Pleistocene beds, which are composed³ of coarse unsorted boulders, gravel, and clay.

The previously described orogenic movements at the close of the Pliocene disturbed the Gila conglomerate to a considerable degree, causing folding and faulting on a rather extensive scale.⁴ Gila Conglomerate is a character-

-
1. Bryan, op.cit., p. 170.
 2. Ibid., p. 170.
 3. Smith, George Edson Philip, Personal Interview.
 4. Bryan, op.cit., p. 170.

istic valley fill formation of the Gila River and its tributaries, and is the result of stream deposition under arid conditions in intermountain basins or in valleys with partial or no exterior drainage. The material comprising this formation ranges from good-sized boulders to fine sand, with a calcareous cement.¹ Close to the mountain ranges the fragments are angular and of all sizes and shapes, with no definite stratification. In the basins the material is clearly stratified, and the fragments are waterworn.²

Throughout the area the Gila Conglomerate "rests unconformably on older rocks, including the Tertiary lavas....,"³ and surrounds two types of fine-grained sediments which once occupied the centers of the original valleys. The first type is chiefly red clay, with an admixture of soft white limestone (varying in thickness from a few inches to two feet) and some sand, which occurs in the southern part of the valley. Where exposed, these beds are as much as 250 feet thick but their total thickness is probably much greater.⁴

-
1. United States Geological Survey, Report Upon Geographical and Geological Explorations West of the One Hundredth Meridian. Washington, 1875, vol. 3, p. 540.
 2. Schwennesen, A. T., Geology and Water Resources of the Gila and San Carlos Valleys in the San Carlos Indian Reservation, Arizona. Washington, 1921, U.S.G.S. Water Supply Paper 450, p. 7.
 3. Bryan, op.cit., p. 169.
 4. Gidley, James William, "Fossil Proboscidea and Edentata of the San Pedro Valley, Arizona." In United States Geological Survey Professional Papers, No. 140-B., Washington, 1926, p. 84.

The second type is composed of a sandy clay (ranging in color from yellow-buff to yellow), diatomaceous earth, sand, and large quantities of gypsum. These formations are found in the northern part of the valley and in other places, particularly in the vicinity of Ray.¹ The beds have been little affected by the post-Gila uplift, most of them retaining their horizontal position.² It is near the top of these fine-grained deposits that Pliocene vertebrate faunae occur. Fossil remains were collected from opposite sides of the valley, both apparently late Pliocene in age, but with fauna indicating slightly different periods of time. One site which yielded an abundance of specimens lies in some deeply eroded formations or "bad lands" near the Curtis Flats, approximately fourteen miles southwest of Benson and northwest of Tombstone.³ Near Benson, on the west side of the valley, twelve miles from Site 1, Bryan and Gidley uncovered the second site, a fossil bone quarry containing remains of the ancestral horse (*Pliohippus*), mastadon, and several new species of birds.

The bones are distributed throughout several small lay-

-
1. Bryan, op.cit., p. 169.
 2. Gidley, op.cit., p. 84.
 3. Gidley, James William, "Preliminary Report on Fossil Vertebrates of the San Pedro Valley, Arizona, with Descriptions of New Species of Rodentia and Lagomorpha." U.S. Geological Survey, Professional Papers, No. 131, Washington, 1923, p. 119.

ers or beds of greenish tuffaceous clay. These beds merge on one side into arkosic gravel and conglomerate characteristic of alluvial deposits, and on the other into typical lake bed material.¹ The clay deposits apparently mark the former position of fresh water springs and boggy water holes along the borders of a probable salt lake. The position and state of the bones would bear evidence to such a postulation. Deposition in this Pliocene basin probably took place slowly, the waters gradually becoming saline through evaporation.² The climate at that time must have been quite equable,³ probably warm and moist, as indicated by the presence of camels, proboscidiens, and a type of turkey related to a living species known to inhabit only the tropical lowlands. Fossilized remains of the glyptodont, true llama, and a rodent belonging to a genus which at present exists only in South America indicate a probable interchange of life forms between the two continents.⁴

Species of fauna include proboscidiens, turtles, camels, horses, glyptodonts, and birds. The fossil turtles (Kino-

-
1. Gidley, James William, "Fossil Proboscidea and Edentata of the San Pedro Valley, Arizona." U. S. Geological Survey, Professional Papers, No. 140-B, Washington, 1926, p. 84.
 2. Ibid., p. 84.
 3. Gidley, James William, "Preliminary Report on Fossil Vertebrates of the San Pedro Valley, Arizona, with Descriptions of New Species of Rodentia and Lagomorpha." U.S. Geological Survey, Professional Papers, No. 131, Washington, 1923, p. 121.
 4. Ibid., p. 120.

sternon arizonense), male and female, are a new species apparently most closely related to Kinosternon flavescens¹ (Agassiz), a living type believed to range in Arizona. They are the first extinct specimens of the family Kinosternidae thus far appearing on the North American continent.²

Waterfowl considerably outnumber the dry land species.³ Types of the former include the tree duck, grebe, small goose, gallinule, and sand piper, while the latter are represented by the quail, pigeon, small raven, junco, finch, and "an extinct species of the ocellated turkey related to a group now living only in Central America and southern Mexico."⁴

-
1. Gilmore, Charles Whitney, "A New Fossil Turtle, Kinosternon arizonense, from Arizona." U.S. National Museum, Proceedings, Washington, 1923, vol. 62, art.5, p. 1.
 2. Ibid., p. 1.
 3. Wetmore, Alexander, "Fossil Birds from Southeastern Arizona." U.S. National Museum, Proceedings, Washington, 1925, vol. 64, art. 5, p. 2.
 4. Gidley, op.cit., p. 121.

PART III

EARLY DOCUMENTARY HISTORY

SOBAIPURI

Introduction

In the mist of the past there is obscured, except for an occasional glance, a group of our Southwestern aborigines, popularly known to us as the "Sobaipuris." The rare views of these peoples are revealed only as one delves into the records of the past. These narratives are indeed sketchy and in many cases it is only by diligent search that we are able to piece together a vague and incomplete picture of them.

The sources are very scattered. Early travelers, adventurers and missionaries in the Southwest have given most of the obtainable material. Had these individuals been more interested in observing their fellow-man in place of being blinded by the visions of gold, land, and an increase of church power, more might be known of these interesting and unselfish natives. The sources that have been the most enlightening are those of de Niza, Coronado, Kino, Velarde, and other lesser narrators.

We can truthfully say that these people gave all to the pale-skinned ones who came from the South. Their words and deeds of kindness were repaid with misery, internal strife, and final extinction as an ethnic unit.

Only too well do I realize the danger in attempting to prepare a paper dealing with a people of whom so little is known. I will, in places, be called upon to form hypotheses and in others to draw parallels to known neighboring groups. It is with the hope of doing archaeological work in the region of their former homes that I am doing this work, which I feel will better enable me to interpret that which may be found.

GEOGRAPHY

The Region

The area occupied by the Sobaipuri included practically¹ the whole of both the San Pedro and Santa Cruz River valleys. These valleys have at different times been known by other names; the San Pedro as the Quiburi,² Sobaipuri³ or el Rio de San Joseph de Torrenate,⁴ and the Santa Cruz as the river of Santa Maria.⁵

The San Pedro is one of the most important tributaries of the Gila River, emptying into the latter near Winkleman, Arizona, after flowing for about one hundred seventy miles in a general northern direction. The valley proper is bordered by the Galiuro, Bisbee, Dragoon, and Tombstone mountains on the east, and the Huachucas, Whetstone, Rincon,⁶ and Santa Catalina mountains on the west.

The Santa Cruz River rises in the Canelo hills, flows southward into Mexico, around the Patagonia mountains, then swings back northward into the United States, past Calabasas, Tubac, and Tucson, becoming lost in the sands near Casa

-
1. Bolton, Kino's Historical Memoir, vol. 1, p. 122.
 2. Ibid.
 3. Coues, On the Trail of a Spanish Pioneer, vol.1, pp.85-86.
 4. Bolton, op.cit., p. 50.
 5. Ibid., p. 122.
 6. Catlin, op.cit., p. 183.

1
Grande, Arizona.

Sobaipuri Settlements

It is necessary that I divide the settlements into three groups; those which can be located with almost certain correctness; those located with doubtful accuracy, and finally those mentioned but no geographical location given.

I. Villages which can be located with almost certain correctness:

2
1). La Victoria

Position: 3 leagues north of Comarsuta.
E. bank San Pedro.

Population: 380.
Other Names: Ojio.³

4
2). Santa Cruz de Gaybanipitea

Position: A very short distance southwest
of Fairbanks, Arizona, and on the
west side of San Pedro.⁵

Population: 100.
Houses: 25.

6
3). Quiburi

Position: A league or so north of Santa Cruz.
Population: 500.
Other Names: Kihiri (?).

-
1. Catlin, op.cit., p. 184.
 2. Bolton, op.cit., p. 170, footnote 193.
 3. Hodge, Handbook of American Indians, vol. 2, p. 608.
 4. Bolton, op.cit., p. 170, footnote, 193.
 5. Lockwood, On the Trail with Kino, (map in back).
 6. Bolton, op.cit., p. 170, footnote 193.

- 4). Cusac¹
Position: 25 leagues north of Quiburi.
Population: 70.
Other Names: San Marcos.²
- 5). Jiaspi³
Position: 2 leagues north of Cusac.
Population: 125.
Number of Houses: 27.
Other Names: Rosario.⁴
- 6). Muyva⁵
Position: 1 league north of Jiaspi.
- 7). Aravovia⁶
Position: 6 leagues north of Muyva.
Population: Approximately 125.
- 8). Tutuyda⁷
Position: 3 leagues north of Aravovia.
Population: 100.
- 9). Comarsuta⁸
Position: 3 leagues north of Tutuyda.
Population: 80.
- 10). San Salvador⁹
Position: 10 leagues north of Quiburi.
Deserted in 1696.
- 11). Santa Maria Suamca
Position: Present site in northern Sonora.

1. Bolton, op.cit., p. 170, footnote 193.
2. Jesuit Map of Pimeria Alta., 1702.
3. Bolton, op.cit., p. 170, footnote, 193.
4. Ibid.
5. Ibid.
6. Ibid.
7. Ibid.
8. Ibid., p. 122.
9. Guteraz, Rudo Ensayo.

12). Guevavi¹

Position: Present site of ruins of Guevavi Mission. East by south from Calabasas.

13). Sonoita²

Position: At junction of present Tucson-Fairbanks-Patagonia highways.

14). Tumacacori³

Position: Present site of Tumacacori Mission ruins.

15). Tubac⁴

Position: Present site of Tubac, Arizona.

16). San Xavier del Bac⁵

Position: Present site of San Xavier Mission.

17). Tuquison⁶

Position: Present Tucson.
Other Names: Tusonimon (?).⁷

II. Towns located with doubtful accuracy:

1). Reyes⁸

Position: A little northwest of Quevavi.

-
1. Twitchell, Spanish Archives of New Mexico, vol. 2, p.218.
 2. Guiterez, op.cit., p. 192.
 3. Bolton, op.cit., p. 119.
 4. Coues, On Trail of a Spanish Pioneer, vol. 1, p. 69.
 5. Bolton, op.cit., p. 119.
 6. McClintock, Radio Lectures, No. 5, p. 3.
 7. Hodge, Handbook of American Indians, vol. 2, p. 608.
 8. Jesuit Map of Pimeria Alta, 1702.

2). San Angelo¹

Position: About two-thirds of the way between Tucson and Gila River.²

3 & 4). Busac and Tubo³

Position: Off road and near La Victoria.
Population: Combined - 85 men.

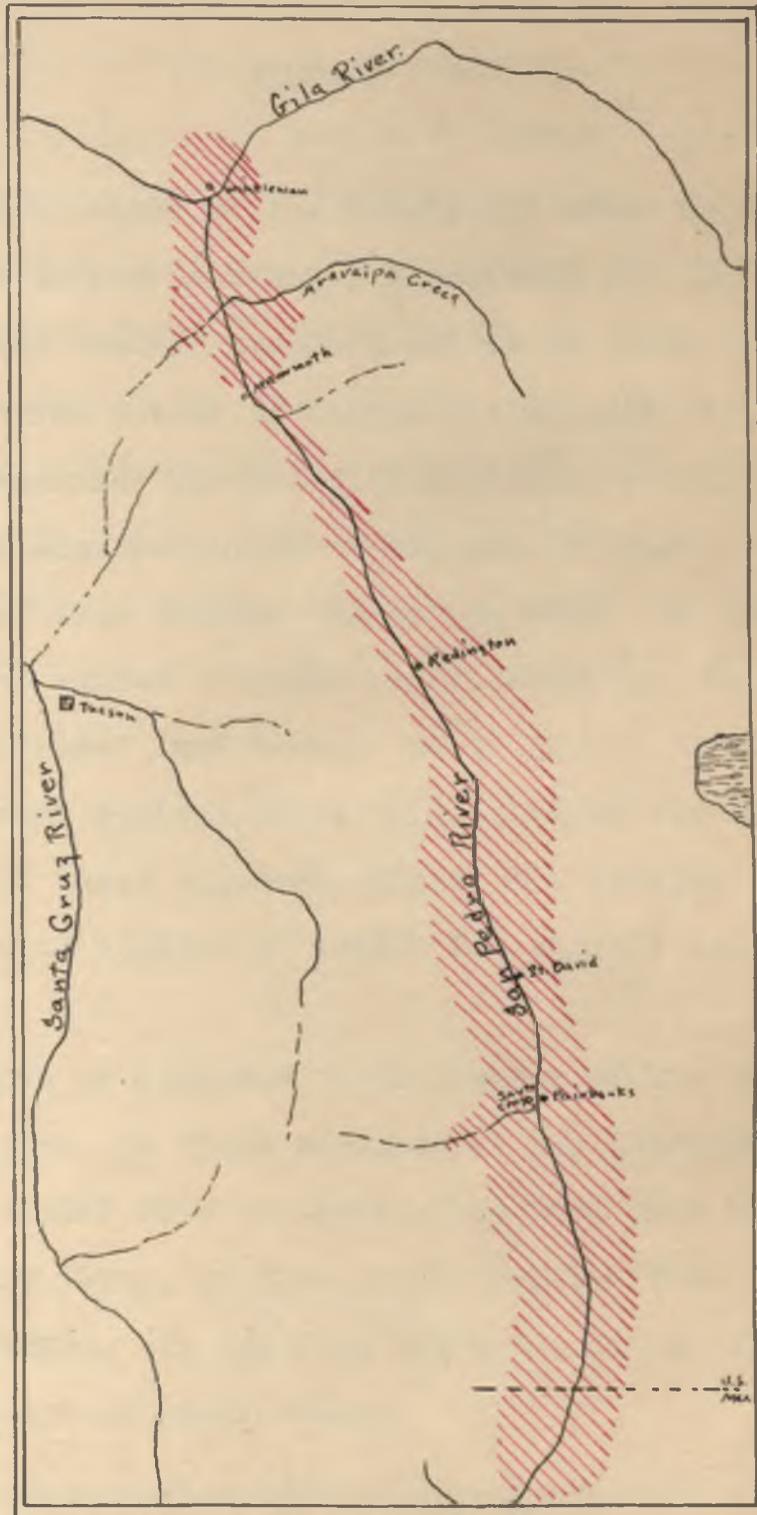
III. Towns mentioned but no location given:

Alamos, Arabiabi, Babisi, Baicodiat, Camari, Esqugbaag, Jaumaturgo, Optuabo, Quiqui-⁴borica, San Clemente, San Felipe,⁵ Turiso, La Encarnacion, and San Andres.

The two latter villages are hinted as being somewhere on the Gila River.⁶

The San Pedro valley probably supported a population of about two thousand Sobaipuris living in fourteen villages,⁷ and the Santa Cruz gave a living to about a like number. The population was likely to have surpassed that at an earlier time before strife overtook them.

-
1. Hodge, op.cit., p. 608.
 2. Jesuit Map of Pimeria Alta, 1702.
 3. Bolton, op.cit., p. 170, footnote 193.
 4. Hodge, op.cit., p. 608.
 5. Bolton, op.cit., p. 202.
 6. Ibid.
 7. Ibid., p. 170, footnote, 193.



Distribution: Sobaipuri in San Pedro River Valley-1539.

HISTORY

The earliest notice of the Sobaipuris comes to us from the pen of Fray Marcos de Niza, a Franciscan sent into this region by Viceroy Mendoza to substantiate or refute the wild tales of the "seven cities of Cibola" as related by Cabeza de Vaca, an adventurer who had with survivors of his shipwrecked Florida expedition been wandering for years in the unknown wilds of that country and to the west. De Vaca had heard stories of cities of great wealth which lay in the region of the present Zuni towns. Later he was found wandering in the present Mexican state of Sinaloa by slavers. When Mendoza heard of these supposed cities, his imagination became inflamed with visions of wealth for himself and his beloved king.

In 1539 when de Niza was in the region of the present Fairbanks, Arizona, he first encountered the Sobaipuris.¹ He immediately asked them of Cibola, and they told him that they knew of the place, in fact, that they had been there many times to trade. It was from these people of Cibola² that they got most of their finery.

1. Bandelier, Papers, Arch. Inst. Amer., vol. 5, p. 139.
2. Ibid., p. 142.

The Indians offered to accompany the friar and show the way. Dressing themselves in all of their finery, in order to make an impression on the people of Cibola,¹ they went ahead with de Niza's guide, a negro by the name of Estevan, who had been with de Vaca. Fray Marcos remained three days in the northernmost village of the Sobaipuri (La Victoria)² then pushed on to join the group at Cibola. On his arrival he found that Estevan had gotten into trouble with the natives of Hawikuh by showing too much interest in the women, and that a battle had ensued. Estevan and several hundred of the Sobaipuris had been slain. The words of de Niza will best give the details:

"They at once began to weep and lament, and the Indians who were with the Friar joined in the wail. As far as Fray Marcos, who himself was moved to tears by their sorrow, could understand, over three hundred of the Indians from the San Pedro Valley had perished at the hands of the people of Cibola. All communication between the Sobaipuris and the people of Cibola, and especially commercial intercourse, was henceforth impossible; even a return to the place hereafter forbidden."³

Thus began to form the series of events that led to their extinction.

The following year found Coronado among the Sobaipuris. He was welcomed with open arms as had been de Niza, whether

-
1. Bandelier, op.cit., p. 148.
 2. Coues, op.cit., p. 483.
 3. Bandelier, op.cit., p. 153.

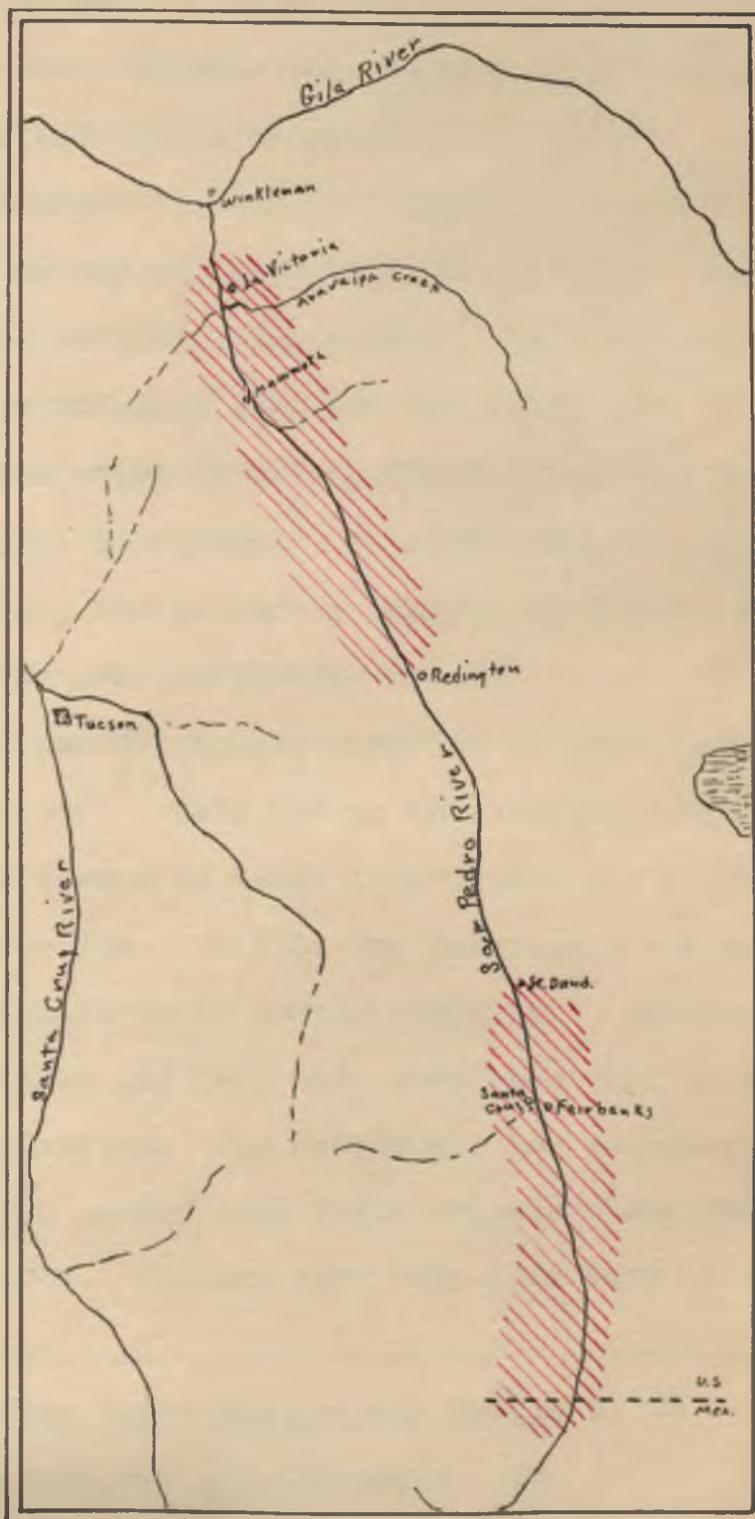
these acts were prompted by sincere hospitality or fear we cannot tell. There were no offers as before to act as guides.¹

At about this date great interest in the territory that is now New Mexico, and especially in the region of the present Santa Fe, was aroused among the king's henchmen in Mexico City. Pimeria Alta is practically forgotten. A century and a half pass without any word of the Sobaipuris coming from Spanish pens.

Tradition tells us that the Apaches were closing in tighter and tighter;² the raids were becoming more frequent and more devastating. Another catastrophe fell upon the Sobaipuris some time during this period. The Moquinos (Hopi) with whom the Sobaipuri had occasionally held trading fairs were lost to their friendship. It appears that a group of them were visiting at a village in the vicinity of the present town of Fairbanks, when for some unknown reason, a body of Sobaipuris set upon them, killing a number.³ Contacts with all of the Pueblo groups were now broken. The Sobaipuris were practically friendless, surrounded by a wilderness filled with blood-thirsty Apaches.

By autumn of 1692 Kino had extended his mission string

-
1. Winship, The Coronado Expedition, p. 356.
 2. Fewkes, Tusayan Migration Myths, A.R., B.A.E. 19, Pt. 2, p. 598.
 3. Wyllys, Padre Velarde's Relacion, p. 139.



Distribution: Sobaipuri in San Pedro Valley. Approx. 1700.

to reach the Sobaipuri.¹ Many visitas were established; missions built. Many Indians sensing Kino as a friend, flocking to him and were baptized.²

About this time a tribal split appears to have occurred. This split may or may not have been due to a difference in belief among the natives. For several years they fought among themselves and many villages were laid waste.³ Finally, through mediation of the Spaniards, the internal strife was brought to an end.⁴ This settlement was important to the Sobaipuris, but it left a feeling of uncertainty which I doubt was ever completely erased.

1698 found the Sobaipuris striking several telling blows at the Apache.⁵ This had an invigorating effect on the former, and seemed to leave them primed for a fight at the least provocation. In 1701 the Sobaipuris successfully rebuffed the Spanish in an Indian uprising.⁶ However, evidence does point to the fact that they were chafing under the Spanish domination. The Sobaipuris new earned reputations as fighters caused some false reports about them to be circulated in 1703. Charges came that they were at the

-
1. Lockwood, With Padre Kino on the Trail, p. 72.
 2. Ibid.
 3. Bolton, op.cit., p. 170, footnote, 193.
 4. Ibid.
 5. Wyllys, op.cit., p. 138.
 6. Bancroft, North American States, vol. 1, p. 504.

bottom of many of the Apache raids, which caused several of the padres to flee from northern Mexico.¹ The presence of a new Sobaipuri chief, El Turumisani, noted by Velarde in the post-Kino year 1716,² may have been responsible for the change in attitude toward the Spanish. This change in attitude is probably due to the loss of Kino's great influence over Humeric and Coro, two earlier Sobaipuri leaders, in bringing about friendly relations and peace.

By 1751 the Sobaipuris apparently were joining with the other tribes in carrying out their many raids. The following statement comes from Bancroft:

"They speak that the missions are good places for the Pimas, Papagos, Sobas, and Sobaipuris to leave the children, while the men helped the Seri and the Bajo Pimas in their depredations."³

There seems to be a certain amount of sarcasm present which tends to destroy the true implication of the statement.

The year 1762 finds the Sobaipuris a disturbing element in Spanish affairs. They had become a problem due to their apparent participation in the Pima uprising, which included practically all of the Pima stock. However, the exact status of the Sobaipuri was not known, so the Spanish governor -

1. Bancroft, op.cit., p. 503.
2. Wyllys, op.cit., p. 134.
3. Bancroft, op.cit., p. 560.

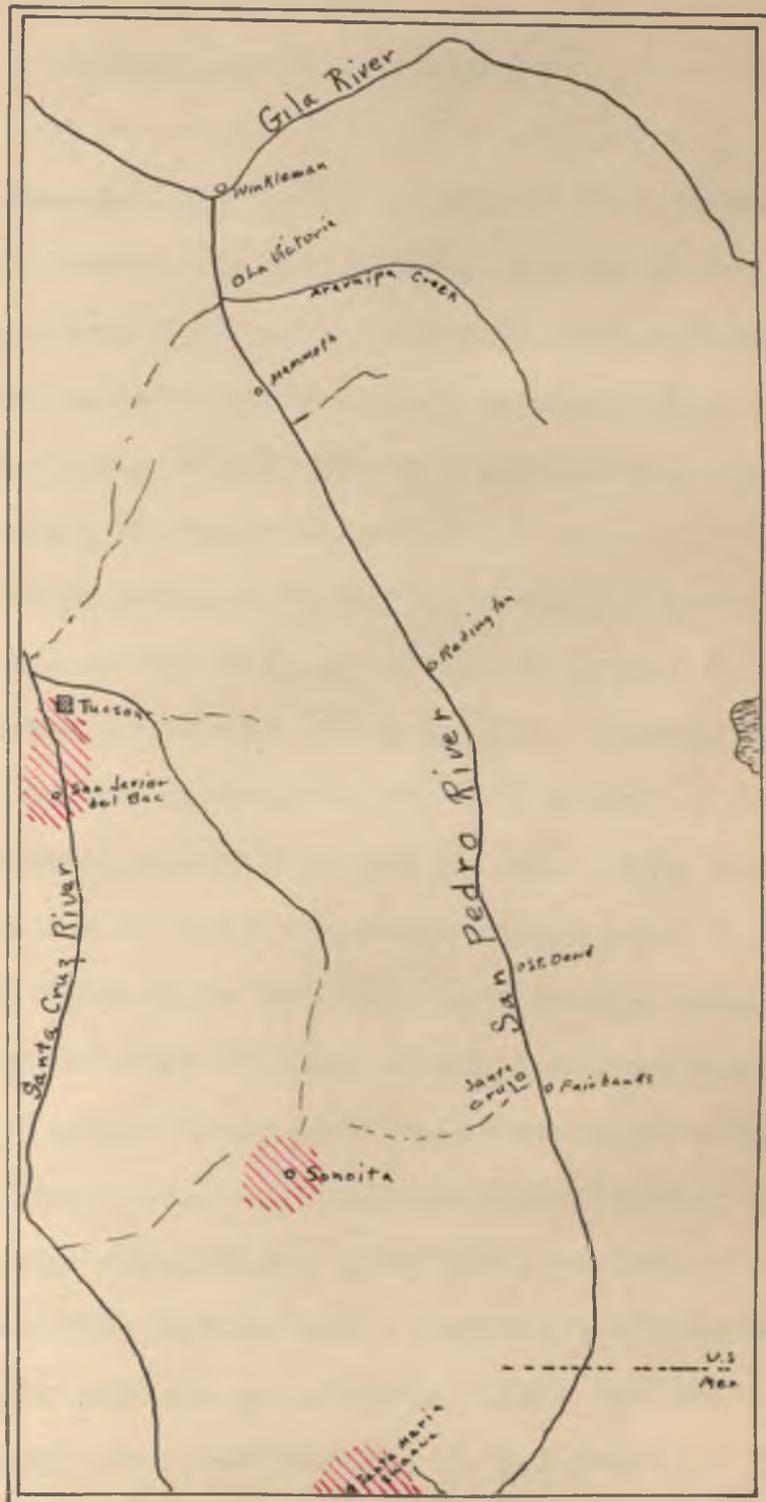
"concluded that it was not advisable to send any padres nor attempt the reduction of the Sobaipuris, fearing that any attempt to exercise any restraint would convert the people from friend to foe."¹

Some two hundred fifty Sobaipuris from various villages, who were friends of the Spaniards, had come to San Xavier and it was expected that more would come. De Cuervo thought this a good move, as it would have some effect on the rampaging Papago who, when they saw the good treatment accorded the Sobaipuris, would be more apt to settle down and cease their depredations.²

The Sobaipuris were fighting a losing battle for existence. The remaining ones to save themselves made peace with the Spanish and sought the shelter of the missions where many of their Pima-Papago linguistic relatives already were, to escape the decimating encounters with the Apache.

"Ya cansados de vivir en guerra continua, han abandonado el ano de 1762, su ameno y fertil valle, retirandose unos a Santa Maria Suaca, otros a San Javier del Bac y Tucson, y otros al pueblo de visita de Guevavi llamado Sonoitac,"³ "thus leaving the enemies a free entrance to the region of the High Pimas."⁴

-
1. Bancroft, North Mexican States, vol. 1, p. 562.
 2. Chapman, Guide, Archives Indias, p. 129.
 3. Bandelier, Papers, Arch. Inst. Amer., Series 3, p. 102.
 4. Guiteras, Rudo Ensayo, p. 192.



Distribution: San Pedro Valley Sobaipuri Shortly After 1762

DISCUSSION OF THE HISTORY

From the foregoing material I believe that it is possible to draw a number of conclusions, showing why this group of peoples became decadent and were finally absorbed by others. Here we find duplications of conditions seen elsewhere in history. Therefore, the results may have been in parallel or very close reproductions.

The disastrous results of the Sobaipuris association with the Spanish, at the time of de Niza's trip to the villages of Hawikuh, brought to an end the commercial intercourse between the Sobaipuris and the people of Zuni. As de Niza's narrative states, most of the finery that the natives had was due to trade contacts with those of Cibola. Even though the Sobaipuris had long been kindly sedentary peoples, this great loss of life at the hands of outsiders would naturally poison their very existence with a lust for blood revenge. This venomous outlook plus the loss of a source of personal decoration, upon which an Indian's personality is partially built, had a certain disintegrating effect upon their culture as a whole. This appears to be the first evidence of decay gnawing at the heart of the Sobaipuri.

After that it seems that the Apache began to crowd in

closer and closer upon the natives of the San Pedro and Santa Cruz, especially the former. The Sobaipuris were spending more time in the protection of their homes. It was less possible for them to have their fields far from the village. This would tend to destroy, to a great extent, the agriculture which they had developed, and it is possible that they became more of a gathering people. The fairs that they had had with the Moquinos (Hopi) became less frequent due to the difficulty of unmolested travel between the two points. These contacts were finally brought to an end when on one occasion at the village later known as Santa Cruz, on the San Pedro, a group of these Sobaipuris set upon their guests (the Hopi), killing a number of them. The Sobaipuris are seen to be irritable, shedding blood at the least provocation. Their past experiences had hardened them.

Next came the kindly Kino seeking to bring them into the folds of a new faith; one which he thought would free them from the shackles of infidelity and strengthen them. But he was wrong. Even though many of them flocked to him as a friend, for the time had come when their friends were few, the new faith did no more than cause a tribal split, much like we find among some of our modern pueblos. It appears that the Sobaipuris divided themselves into a southern group with headquarters at Santa Cruz, near the present

town of Fairbanks, Arizona, and a northern group holding out at La Victoria, near the junction of Araviapa Creek and the San Pedro. Due to this split, much blood was spilled. Internal strife was upon them and the foundations of their religion, which is a primitive peoples' government, were undermined. They were groping in a darkness of indecision. They had minor tilts with the Spanish soldiers and a continuation of skirmishes with the Apache. Their numbers had been decimated by this external opposition and civil war. The government was weak; their religion no longer binding on them. The culture was fast crumbling. At last a reconciliation was affected between the two groups of Sobaipuris but it was too late, and as a last attempt to rescue themselves from physical extinction they deserted the last of their old homes, going to live with the Papagos and Pimas, their linguistic brothers. Here their blood mingled with the two others. Today they are but legendary.

The world will turn when we are earth,
As tho we had not come nor gone;
There was no lack before our birth,
When we are gone there will be none.

--Omar Khayyam.

LANGUAGE AND PHYSICAL TYPE

Language

Every authority consulted relative to the language of the Sobaipuri agrees that they spoke a dialect of the major Pima tongue. Bandelier,¹ Powell,² Bancroft,³ Orozco y Berra,⁴ Villa-Senor y Sanchez,⁵ and Pfefferkorn⁶ all place the Sobaipuri as a branch of the Pima, with minor dialectic differences.

Physical Type

The physical type is unknown. It is not unlikely, however, that the Sobaipuris resembled the Papagos and the Pimas. So far as is known, no burials of a known Sobaipuri origin have been found. The early Sobaipuris probably cremated, as the region that they inhabited is known archaeologically as a cremation area. If one could definitely locate a burial plot of the Spanish phase, inhumations might be found, since cremation was a sacrilege in the eyes of the Spanish padres.

-
1. Bandelier, op.cit., p. 148.
 2. Powell, Linguistic Families, B.A.E., A.R. 7, p. 98.
 3. Bancroft, Native Races, vol. 1, p. 603.
 4. Orozco y Berra, Descriptive Geog. Sonora, pp. 534-535.
 5. Villa-Senor y Sanchez, Teatro, Tomo. 2, p. 396.
 6. Pfefferkorn, Mithridates, Tomo. 3, Par. 3, p. 161.

CULTURE

In view of the fact that none of the early writers made an effort to work out the culture of these people, it will be necessary for me to attempt to reconstruct it from random ethnological statements made by them. In places where a complete lack of knowledge is manifest, I will make parallels with cultures of the same environment and with the linguistic brothers of the Sobaipuris, the Papago and the Pima.

In speaking of their culture Bancroft placed the Sobaipuris among the pueblo groups.¹ This is probably due to the fact that he saw them through the Spanish meaning of the word pueblo, and any tribe which lived in a group or a village was classified in the pueblo group. At the time of his writing the factors that go to make up a true "pueblo complex" in the light of modern ethnology and archaeology were unknown.

Habitations

According to Manje the Sobaipuris lived in rather large groups or villages, each supporting some one hundred

1. Bancroft, Native Races, vol. 3, p.

persons.¹ It is possible that the villages were somewhat larger prior to the Apache aggression. It is difficult to get a true picture of a dwelling, but Manje states that "they lived in houses made of poles and reeds, in the form of a 'dome-and-gallery'.²" The materials are logical for³ the region due to the lack of large timbers for beams.

Was this "dome-and-gallery" a type of which remains are found in the San Pedro valley today? The writer has observed on the probable sites of these villages "cimientos" of stone, accompanied by the so-called "vestibules." It is possible that the poles were set into clay and stone and the tops brought together, giving the dome shape. The addition of the vestibule would give the impression that Manje received. The early Pimas built a dome house in different sizes with a ramada in front.⁴ Still the ramada may be an evolutionary offshoot of the breaking away of the vestibule from the main house structure. This type was observed in the middle region of the San Pedro.

In the upper region of the valley Kino was entertained in Coro's "earth covered house of adobe."⁵ Here it appears

-
1. Bolton, Kino's Historical Mem., vol. 1, p. 170, footnote 193.
 2. Ibid.
 3. Wyllys, Velardes Relacion of Pimeria Alta, p. 127.
 4. Palmer, Unpub. Ms. in U.A. Library. Pages not numbered.
 5. Bolton, op.cit., p. 170, footnote 193.

that the natives knew how to construct adobe houses, remains of which are found in the Santa Cruz and San Pedro valleys. At Santa Cruz (village) the Sobaipuris built Kino¹ "a house of adobe, beams, and terrado." Terrado is the Spanish word for a kind of bitumen made from ochre and glue. This may have been used as a waterproofing agent. The Apaches have a story telling of Sobaipuris who lived in stone houses in the caves of the Aravaipa Canyon.²

We can say then that the Sobaipuri lived in both the dome-shaped dwelling and in houses of adobe. The adobe may have been the covering for a wattle and daub structure, much like some found in northern Mexico today, or they may have been houses constructed wholly of adobe. It is logical that the "dome-and-gallery" type should be found near the region of the Pima dome house, and the wattle and daub near the north Mexican type.

Clothing

De Niza tells us that "the Sobaipuri women were dressed in good skirts and chemises."³ He does not name the material

-
1. Bolton, op.cit., p. 170, footnote 193.
 2. Bourke, Journal of Amer. Folklore, vol. 9, p. 114.
(I am ignoring this Apache story due to its vagueness, but investigators among them will be wise in being on guard for any statements pertinent to the Sobaipuri.)
 3. Bandelier, op.cit., p. 142.

from which they were made, but Velarde¹ and Manje² both say that the Sobaipuris raised much cotton from which they wove cotton to clothe themselves. The skirts were probably the wrap around kind, and the chemise a loose waist-like garment much like those worn by the old Pima.³ The dress of the men is not known. However, we do know that the Pima wore a⁴ G-string.

The foot-wear was not mentioned, but they most likely wore sandals of grass or bark. Hides were probably used for clothing as well as for sleeping, though no mention is made of animal skins⁵ being used for clothing.

Food-stuff

The Sobaipuri adapted themselves very well to their environment by making good use of those wild products in which the region abounded. They appear to have been hunters, fishers, gatherers, and agriculturalists.

Food: By Hunting and Fishing

De Niza tells of their having many pelts of the mountain⁶ sheep. However, at the time he confused the description of

-
1. Wyllys, op.cit., p. 129.
 2. Bolton, op.cit., p. 170, footnote 193.
 3. Palmer, op.cit.
 4. Bandelier, op.cit., p. 147.
 5. Palmer, op.cit.
 6. Bandelier, op.cit., p. 147.

the mountain sheep with that of the legendary unicorn. The student of history will recall de Niza's story of fantastic quadrupeds that roamed in the wilderness south from the region of Cibola.

Deer, rabbits, and quail abounded in the region, and when Coronado was among the Sobaipuri they forced upon him the flesh of this game as part of the commissary to be used on the march northward.¹ Velarde makes the statement that "there are catfish in the rivers and wild turkey in the mountains."² It will be interesting in the excavation of the trash heaps to see if these people were really eaters of fish or whether Velarde sighted a single little "bull-head" that had wandered too far from home.

Food: By Gathering

In speaking of Pima food-stuffs, Velarde remarks, "among the Sobaipuris there is abundance of the tree of terebrinths (jojova) with a fruit somewhat smaller than the Cacao."³ This is probably the mesquite bean, which is used even today in large quantities. He also speaks of its use in the treatment of illness. The cactus was used in

-
1. Winship, The Coronado Expedition, p. 356.
 2. Wyllys, op.cit, p. 129.
 3. Ibid., p. 128.

the preparation of a liquor called ravait.¹ Pinon nuts were noted by Coronado.² They probably made use of the fleshy part of the cactus as a baked delicacy, as did most of the natives living in the region of its growth. The gourd may have been used as a food;³ we find a wild species along the San Pedro and Santa Cruz today. It is possible that this was cultivated when they were living there, but on their abandonment of the area it continued to flourish in a wild state.

Food: By the Practice of Agriculture

Agriculture was practiced by the Sobaipuris on a comparatively large scale in both the San Pedro and Santa Cruz valleys. Irrigation was used with great success, quantities of wheat (?) and corn being raised.

"Tienen muy buenas y fertiles tierras con su acequias, son indios laboriosos en algunas partes, tienen principio de ganado mayor y menor, de sementeros y cosechas del trigo y maiz."⁴

Beans, calabashes, and melons were also tended, and cotton⁵ for the manufacture of clothes was raised successfully.

When one looks at the San Pedro today he immediately says, "The banks are too high for irrigation; the boulders too thick for planting. How did they do it?" The greatly

-
1. Russel, Pima Indians, p. 23.
 2. Winship, Coronado Expedition, p. 356.
 3. Ibid.
 4. Bandelier, op.cit., p. 103, vol. 3.
 5. Bolton, op.cit., vol. 1, preface, p. 51.

eroded state of the valley today is but a recent happening, and at one time the banks were low; the bordering ground un-eroded.

"The San Pedro River, today trenched from twenty to fifty feet beneath its flood plain, presented no difficulties for the primitive farmer. ...The San Pedro is one of the most rapidly eroding arroyos in the Southwest and the channel is sinking deeper and deeper beneath the valley¹ floor over which it once spread harmlessly."

"....the river bed has been eroded so that water cannot be taken out easily in irrigating ditches. This is due probably to the over-grazing of its watershed."²

Tools and Weapons

No reference has been found as to the tools and weapons of the Sobaipuri. We can draw upon our archaeological material, and say that they probably used the bow-and-arrow, club, spear, and the stone axe. The presence of a goodly number of arrow and spear points on the surface hints at their use. The three quarter stone axe is also found. The digging stick and the stone hoe were probably used in the preparation of the soil. These are used now, and were used in earlier times by the Pima and Papago.

-
1. Brand and Sauer, Pueblo Sites in Southeastern Arizona, p.
 2. Catlin, Character of Groundwater Resources of Arizona, p. 183.

Personal Adornment

Turquoise seems to have been one of the main articles of adornment. Coronado stated that they had much of it and describes the natives as wearing collars of turquoise. Pendants for the nose and ears were also common.¹ De Niza also noted the finery and gives a hint that they may have gotten it through trade from the people of Cibola (Zuni).²

The evidence of the custom of tattooing or body painting comes from two widely separated sources. De Niza spoke of the Sobaipuris "having their chests and arms tattooed or decorated with pigments."³ Russel recorded the following statement from an old Pima: "The Pimas have a tradition relating the circumstance of the coming of a band of Sobaipuris whom they call Rsarsavina, which means spotted, from the San Pedro Valley."⁴ This statement implies that the Sobaipuris painted or tattooed their bodies. This Sobaipuri custom may account for the origin of the appearance of the tattooing practice among the Pima and Papago.

Political Organization

The only reference found suggestive of political organ-

-
1. Winship, Coronado Expedition, p. 356.
 2. Bandelier, op.cit., vol. 5, p. 142.
 3. Winship, op.cit., p. 356.
 4. Russel, Pima Indians, p. 23.

ization is that they had chiefs, the first mention of which appears in Kino's Historical Memoir. At that time the Sobaipuris appear to have been divided by internal strife, and to have had two chiefs. As to their duties other than leaders it is difficult to say.

At this point I am going to insert several observations made by Palmer around the middle of the 1800's, which give some of the political organization of the Pimas near Sacaton, to whom the Sobaipuris seem to be most closely related.

With reference to the chiefs, Palmer says:

"The Pimas in ancient times were governed by the head chief, the position of which was hereditary in one family. They were subdivided into bands and each band ruled by a captain who was elected by popular vote. (This statement may help explain the term captain being applied to Coro.--W.A.D.) Now the chiefs also descend from father to son. If not, then the principal men of the tribe choose some men to make the choice."¹

Speaking of the Ditch Chief, Palmer states:

"They have chiefs to regulate and make ditches in each town. When a new settlement is made and new ditches are to be made, they elect a chief for that purpose. He shouts his wants and orders from a house top."

And again, relative to hunting chiefs, he remarks:

"The villages also have hunting chiefs. When a hunt is to be undertaken he calls his orders from a house top."

1. Palmer, Unpub. MS. in U.A. Library. Pages not numbered.

Social Practices

At some later date when more work has been done on the Sobaipuris, it may be possible to know something of their social practices. Research dealing with the early Pima and Papago will be valuable for comparison. However, at the present I am loathe to make any statements as to these practices as I have nothing definite with which to substantiate them.

Religion

The Sobaipuri were an agricultural people. With this in mind it might be logical to say that their religion would be much like any other agricultural group in the Southwest. There would be ceremonies dealing with the moisture element, the spirit of growth, and the spirit of the thing grown. As to their conception of life after death, we have no information. The Padres left us no word as to their beliefs.

PART IV

ARCHAEOLOGY

ARCHAIC PERIOD

For many years it has been Dr. Cummings' belief that man existed at a very early date in the Southwest. This idea was partially substantiated by finds made in Whitewater Wash, Cienega Wash, and at Hereford, Arizona, from 1926 through 1928. The evidence consists of fire-places and crude human artifacts associated with extinct mammal bones or in strata underlying the fossil bearing ones. Plate 9 shows the type of site producing this evidence. Due to the depth at which such finds are made, it is necessary that we have a region where there is extreme erosion.

The characteristics of this Archaic period in southeastern Arizona seem to give the culture a pre-agricultural phase, probably that of a "gathering" people. The crude rubbing stones shown in Plate 10 were apparently shaped by use alone, with both sides of the stone being abraded. At the time Dr. Cummings was doing his work, he did not encounter the static element used in the grinding. This problem is now apparently solved through evidence found by Mr. Sayles of Gila Pueblo at Globe, who has carried on additional work



TYPICAL ARCHAIC TYPE-SITES
SOUTHEASTERN ARIZONA.





ARCHAIC MILLING STONES.

in the region. He has found the same type of stones as did Dr. Cummings, and, in association, has found a very primitive-like metate. This differs from the common variety in that the body is unshaped. The groove in place of being pecked into the stone was produced by rubbing the short way which gives a rather oval-shaped depression.¹

In addition to this, Gila Pueblo has found artifacts having core implement characteristics - percussion being used and no evidence of pressure flaking. These consist of scrapers, knives, and choppers.²

The problem now at hand is: What is the age of this culture and what is its relationship to other cultures of the Southwest?

Dr. Antevs, the famous authority on Glacial and Recent Geology, was called in to make a study of the formations in which this cultural evidence was found. After spending some time on the question, he feels that they are at least 10,000 years of age and belong to the Pluvial period, as they are encased between two strata which were laid down during this period of moisture and deposition.³

Mr. Sayles believes that it is possible to cross-date

-
1. Personal conference with Dr. Haury of Gila Pueblo.
 2. Ibid.
 3. Antevs, Ernst, Paper before the American Association for Advancement of Science, Flagstaff, Ariz., 1936.

this Archaic of southeastern Arizona with the Edwards Plateau¹ culture of Texas.

According to stratigraphy this Edwards Plateau phase is found three horizons below the one containing Folsom type² points.

Another piece of work recently done which throws light on this early period was carried on by the Campbells of Twenty-nine Palms, California, where a branch of the Southwest Museum is located. Their paper entitled "The Pinto Basin Site" has brought up other questions which will probably lead us nearer a solution of the Archaic mystery.

It is becoming more evident every day that had the pioneers in the field of Archaic study been heeded years ago, we would be much nearer the truth. Evidence is piling up so rapidly now that it is impossible for even the "blind" to be unconscious of the very strong light.

In summary let us say that the Middle and Upper San Pedro River Valley supported a rather large population at least 10,000 years ago. This phase of culture let us characterize as pre-agricultural and non-pottery making, existing at a time before pressure flaking was known here; where

-
1. Personal conference with Dr. Haury of Gila Pueblo.
 2. Sayles, E. B., An Archaeological Survey of Texas, Table 4, p. 100.

the individuals lived by "gathering" and apparently knew only core implements. These foregoing facts, plus the lack of household structures, gives us a culture that is definitely pre-neolithic.

PUEBLO PERIOD

The Pueblo Period of Professor Cummings is defined as any village site where the structures have their floors below or on the ground level, the term coming from the Spanish "pueblo" which means "town" or "group of people." This differs from other authorities in that their "Pueblo Period" begins with surface structures.

In the San Pedro River Vally the house types are identified in the following manner: Where straight lines of stones or "cimientos"¹ are to be seen with no mound, it is reasonably safe to say that a pit-house village or an early pueblo site is present (Plate 9). When a mound is found with these lines of stone on them, or, if we find huge tumbled-down masses of boulders, it may be considered a late pueblo site or surface village. (Plate 10). It must be taken into consideration, however, that erosion may have cut down certain mounds, so it is well to check this factor early in the research.

Pottery is of aid in the determination of house type in some regions, but in southern Arizona we find so many irregularities in this correlation that it is unwise to make any definite statement without finding evidence of

1. Sauer and Brand, Pueblo Sites of Southeastern Arizona, vol. 3, no. 7, p. 456.



TYPES OF EARLY PUEBLO SITES



TYPES OF LATE PUEBLO SITES

both house and pottery types.

Culture Areas Affecting the San Pedro Valley

In developing this study the writer found it necessary to make a rather hasty survey of the valley as a whole, using what evidence pottery fragments might give plus what could be learned of the structures on the various sites. This personal survey supported by the work of others gives, in the writer's opinion, a fair picture of human culture as it developed in the area during the Pueblo Period.

The most definite factor noted on completion of site studies was that no single culture completely dominated the area as a whole. This is explainable in that the San Pedro valley, due to its natural formations, is so centrally located with reference to the other centers of development and accessible from so many angles that it may have acted as a corridor of commercial intercourse and natural movements. These facts plus the agricultural possibilities of the land gave rise to a rather complex archaeological situation along the San Pedro.

In discussing the cultures affecting the area, type-sites will be used further on with reference to specific developments.

Red-on-Buff Culture (Hohokam)

The red-on-buff or Hohokam culture seems, from the latest developments, to have had its origin in the Gila Valley. At Snaketown,¹ Gila Pueblo has discovered the earliest evidence yet brought to light relative to the beginnings of the Hohokam. The site revealed in its mound an unbroken sequence of phases, the oldest of which they feel goes back at least to the beginning of the Christian era. Even at that early date agriculture was practiced. This point is upheld by the presence of metates and milling stones.

The Snaketown site does not settle the Hohokam question by any means because the beginnings of the complex is still hidden. The Vahki phase (the oldest) shows clearly a specialized pottery type; the stone art is not exceedingly crude, nor can the figurine types be explained. For the present we must mark time relative to the origin of the red-on-buff culture, accepting it as it occurs.

From the foregoing, let us say that our earliest sites are to be found along the Middle Gila. After a time the complex spread down into the Santa Cruz valley, finally sweeping eastward across the San Pedro River valley where it became the strongest influence in the region. The surface surveys and excavations show this to be true.

1. Gila Pueblo, Snaketown paper in preparation.



TYPICAL EARLY RED-ON-BUFF.



TYPICAL LATE RED-ON-BUFF.

Early red-on-buff sites with their characteristic bell-shaped, flaring-rimmed bowls are to be found from the mouth of the San Pedro river at Winkleman, Arizona, south to the region of Charleston, Arizona, some twenty miles north of the international boundary. Other characteristics of those sites, such as the evidence of pit villages, and lack of fortifications, point to this early period. It is roughly estimated through correlation that this phase of development took place between 700 A.D. and 900 A.D.

After this time, a paucity of red-on-buff sites are to be noted; not more than four or five evidences of the late red-on-buff occupations were to be found. It is true, however, that a few sherds of red-on-buff, so typical of the late times in the Santa Cruz valley, were found but the number were in such a minority as opposed to their association with other overwhelming types that it appears that they must have been trade ware pieces.

About 900 A.D. (according to Gila Pueblo) a culture from New Mexico designated as Mogollon penetrated the San Pedro valley.¹ This phase of culture will be discussed under a separate heading.

Mogollon

For a long time it was believed that the peculiar type

1. Gladwin, Winifred and Harold S., "The Eastern Range of the Red-on-Buff Culture", Medallion No. XVI, pp.224-233.

of pottery, which so resembled red-on-buff yet which could not be placed as a true type, was of a local origin.

The characteristics of this ware was a high polish on a red-on-brown which was figured as a late development out¹ of the late red-on-buff.

Karl Trischka encountered this type of ware at a site² ten miles northeast of Bisbee, Arizona. He, too, accepted this as red-on-buff. Since this time the ware has been traced and the route into the San Pedro River valley checked.

Several years ago Gila Pueblo became interested in this problem and found the influence of this pottery the strongest in the region of Mogollon, New Mexico. This pottery type has now been established and named Mogollon red-on-³ brown.

The accompanying factors which definitely set off this ware from red-on-buff are: the pure Mogollon gives inhumation and brachycephaly as opposed to Hohokam cremation, while it is believed that the red-on-buff people were dolio-cocephalic; the presence of long inclined vestibules versus the short one-stepped vestibule of southern Arizona.

The writer does not say that the Arizona sites are pure

-
1. Gladwin, Winifred and Harold S., op.cit., pp.224-233.
 2. Trischka, Karl, Hohokam: A Chapter in the History of Red-on-Buff Culture of Arizona. Reprint from Scientific Monthly, Nov. 1933, vol. XXXVII, pp. 417-433.
 3. Gladwin, Winifred and Harold S., op.cit.

Mogollon by any means. The strength of the red-on-buff in the San Pedro would prevent this. The Fulton site ¹ shows a blending of the two.

The two cultures were contemporaneous in the San Pedro River drainage. The latter period of early red-on-buff is represented in sherds from sites of Mogollon and vice-versa. Gila Pueblo has designated the Mogollon of southeastern Arizona as "San Simon." This cross-dates with the "Three Circle" phase of New Mexico (900-1000 A.D.). ²

From locations of the sites in the San Pedro valley and the study of the topography, it seems most logical that the Mogollon culture entered the region through the San Simon valley and finally into the San Pedro by way of Texas Canyon. There is a strong centralization of this influence in the region of Benson, thence north down the river as far as the Aravaipa Canyon creek.

In conclusion we can say that the pottery carries the Mogollon influence into the San Pedro valley.

Gila Polychrome

About the middle of the thirteenth century a people apparently living north of the Gila river began producing

-
1. Fulton, Archaeological Notes on Texas Canyon, Arizona, vol. XII, nos. 1, 2,
 2. Gila Pueblo, Mogollon Paper (in press).

a type of ware which has come to be known as Gila Polychrome. Who these people were or at exactly what time this phase of culture existed is not definitely known. We do know that this ware was found as early as shortly after 1250 A.D. at Kinishba Pueblo and as late as to be associated with Jeddito¹ brown-on-yellow.

Gila Polychrome can be divided into two periods of development as follows:

Early: (Plate No. 14)

This type is generally the superior in quality of manufacture as well as in design. This early variety gives a design which is generally simple yet which in technique of application is well done. The design is practically always on the inside of the bowl only. The line work is very carefully done and much of the late sloppiness is lacking.

Late: (Plate No. 14)

In the later years of Gila Polychrome a greater complexity of design is noted. However, the technique applied is inferior to the later period. Designs are now applied to the exterior of bowls. Some of the greatest pottery monstrosities are to be found in this period. (Plate)
The reason for such a decline in workmanship is not really known.

1. Gila Pueblo, Some Southwestern Pottery Types, series 7, p. 9.



EARLY GILA POLYCHROME.



LATE GILA POLYCHROME.

It appears that Gila Polychrome developed in a rather large area, this area increasing yet more in size after the great Southwestern upset in the latter years of the 1300's. This pottery has been found, together with Four-Mile Polychrome at Kinishba. From what we know of the development of Four-Mile ware we cannot feel but that the Gila type lived to a rather ripe old age. If we consider that Four-Mile is the latest development of Little Colorado Polychromes, our belief is further strengthened.

On page 218 of Medallion Paper No. 16¹ we see a piece of Gila Polychrome compared with a bowl of Jeddito Black-on-yellow. It is interesting to note the similarity of the broken line element.

The house types associated with Gila Polychrome in its own region are late pueblo, but in its southern extension we find the ware occurring in pit-villages as well as in large surface pueblos.² Some workers in the field feel that it was these peoples who brought the compound into southern Arizona.

A component part of the Gila culture which would come in with them would be burials and not cremation. This point has often caused the writer to wonder why more of these

-
1. Gladwin, Winifred and Harold S., The Eastern Range of the Red-on-Buff Culture, Medallion, No. 16, p. 218.
 2. University Ruin, Redington, etc.

burials are not recovered. Could it be that the Gila Polychrome movement was cultural and not physical?

The San Pedro River valley gives both early and late Gila Polychrome. This ware in many cases is found on very early sites (early red-on-buff or Mogollon) but this is probably nothing more than a reoccupation of the site at a much later date.

Brand and Sauer¹ give as the southern frontier of Gila Polychrome a region northeast of the main part of the valley. The writer wishes to extend, through sherd evidence, this frontier to a point somewhere between Benson and Fairbanks, Arizona. This may still be further extended at a later date due to the large amount of Gila Polychrome, which is found even in Chihuahua sites.²

Mimbres

Another influence felt in the San Pedro River valley came from western New Mexico; the Mimbres. The beginnings of this culture are like others of the Southwest - unknown, but we have fairly good foundation for belief by cross-finds that there were two phases of this development. The oldest

-
1. Brand and Sauer, Pueblo Sites in Southeastern Arizona, Univ. of Cal. Pub. in Geog., vol. 3, p. 442.
 2. Pottery collections in Arizona State Museum at Tucson, Arizona.



MIMBRES POTTERY.



CHIHUAHUA POTTERY.

is known as "boldface" or Mangus,¹ and the latest as the characteristic Mimbres, a type using the zoomorphic and anthropomorphic design.

This earlier type has been found associated with sherds of the San Simon red-on-brown, which has been dated as having its development between 1000 and 1100 A.D. This was replaced by the pure Mimbres between 1100 and 1200 A.D. From this evidence then, it appears that the Mimbres culture existed for a comparatively short period of 200 years. We must be conservative, however, because there has not been enough work done in the region to warrant any dogmatic statements relative to its life span.

In the San Pedro River valley sherds of Mimbres ware have been found associated with red-on-buff. It is only in the southern section of the valley that this is true. There is a possibility that the short existence of the Mimbres culture is responsible for its rarity in the valley.

Chihuahua

The Chihuahua culture had its highest development in the region of the Casas Grandes in northwestern Chihuahua. This influence spreads as far south as the Babicora region.

1. Gladwin, Winifred and Harold S., A Method for the Designation of Cultures and their Variations., Medallion No. 15, p. 32.

and as far west as the Sierra Madre range. This Chihuahua ware has been found north of the international boundary line, as far east as the El Paso region and the San Pedro River valley to the west. Logically, the further one retreats from its focus, the rarer becomes the evidence of its influence.

We know very little regarding the true age of the Chihuahua but we do know that it is later than the Mimbres black-on-white.¹ It has been found contemporaneous with early and late Gila Polychrome, which throws it well into the Decadent Period of development in the Southwest. Kidder mentions finding a sherd of Chihuahua ware in the Glaze 1 horizon at Pecos.²

There have been sporadic finds of these sherds as far north as Redington, Arizona, in the San Pedro River valley. At Gila Pueblo there is a complete anthropomorphic vessel coming from the region of Mammoth which appears to have been brought in from the Chihuahua area. Brand and Sauer give the northern influence where it had any concentration as dying out in the region of Fort Huachuca.³ The writer can find no grounds to extend or contract their boundary.

-
1. Kidder, A.V., An Introduction to the Study of Southwestern Archaeology, p. 103.
 1. Cosgrove, H.S. and C.B., The Swarts Ruin, A Typical Mimbres Site in Southwestern New Mexico, p. 110.
 2. Kidder, A.V. and Shepard, A.O., Pottery of Pecos, vol. 11, p. 367.
 3. Sauer, C. and Brand, D., Pueblo Sites of Southeastern Arizona, vol. 3, no. 7, p. 442.

REDINGTON SITE

The Redington site covers an area of a good many acres on the Mesa east of the San Pedro River and a short distance north of the Redington schoolhouse.

This site may be said to be made up of two separate groups of ruins, one belonging to the period of the early development of red-on-buff and the other to a much later period where Gila polychrome is the dominant decorated ware.

The early site is characterized by the presence of conical heaps of stone, 6 to 10 feet in height and from 20 to 30 feet across. These stone piles are apparently not the remains of fallen homes, but it is evident that they were made by man and not nature. It is highly probable that they were connected in some way with the "ball-court" structure which was found by the University and which will be described later.

The ruin of greatest interest to us (Bayles Ruin) lay a quarter of a mile further north. This site consisted of a great number of outlines of stone, which were in some cases single rooms and in others were groups of rooms having a common wall. This site during its period of occupancy probably had a rather extensive water supply which permitted them to carry on their agricultural pursuits. The river

bottom land under the mesa is fertile and today produces fine crops of alfalfa.

The Ball-court (Plate 16)

At the present time the Southwestern archaeological field is developing a rather unique complex - "ball-courts." For a time it looked as if we were to be spared, but not - a structure which from all appearances checks with others found at Snaketown, Arizona, Casa Grande, and Flagstaff was found near the Redington schoolhouse in the fall of 1935 by the University of Arizona Archaeological Department.

The structure in question has suffered much erosion and appears more like a stone heap. The sides are curved and are over a hundred feet in length. At the west end is a low conical mound to correspond with the platform of other "courts." The width of the "bowl" from the crests of the sides is approximately sixty feet. The inner slopes are regular and of medium grade. The bottom is slightly rounded but this is probably due to deposits from the erosion of the sides. The writer would judge that it is about ten feet from the crests to the center of the depression, which is greater than the distance from the crest to the ground level on the outside. The sites being in a highly erosional area may account for the lack of evidence of plastered walls or floor.



"BALL-COURT" AT REDINGTON.

The writer cannot help but postulate as to whether the "ball-court" was really a gaming center or whether it was used as a general meeting place in which dances could be held or where the religious life of the community was carried out. We must not be in too big a hurry to settle these questions of usage until more work is done and more real evidence as to their use and connection with Mexico and Central America is found.

The pottery associated with this structure at Redington was red-on-buff. Directly west of the "court" are the stone heaps which were mentioned before. Their significance was not determined. No remains of house-types were found, but the writer feels that with further work they are to be uncovered. This site should be studied carefully because it will give much information relative to the southward movement of the red-on-buff complex in the San Pedro River Valley.

Bayles Ruin - Architecture:

The first thing that attracted particular notice in the houses at this site was their size. The rectangular pit shown in Plate 17 (upper) was 21 feet long by 16 feet wide and 14 inches deep. The lower picture in the same plate shows another room at the same site which was a little smaller but of greater depth. These two pictures represent



UNIT PIT-HOUSE



CONTIGUOUS PIT-HOUSE

the two types of houses found here. The former is one of the single or unit-type pit-houses, having no other room in connection, while the latter is part of what appears to be of a long row of these partially subterranean structures. Whether the depth of these houses in their originals differed as to type is difficult to say because of the possibility of erosion having been more active on the south and east side of the ruin where the shallower evidence was found.

Walls:

The masonry for both types is largely the same, being made up of stones ranging from small to rather massive, set into an abundance of mortar; the face then being, in the majority of cases, plastered over and smoothed down. The large number of stones scattered about these structures leads one to believe that the walls ran up rather high above the surface. Apparently, the same type of masonry was carried on up. This is substantiated by the lack of holes in the top of the walls or on the outside for a "wattle and daub" type.

Fire-pits:

This feature was found to be identical in both types of structure save in one room where a basin-like type fire-pit was revealed by the writer. Plate 18 shows the typical fire-pit, constructed of four stones so as to form a square

pit, ranging from six to ten inches across. The depth rarely exceeds six inches. The bottoms in some cases are formed by a flat stone or by the use of several large sherds. There were no ashes in any of the pits but the stones showed evidence of intense heat. It is possible that these were largely for warmth and that the majority of cooking was carried on out of doors. Furthermore, the desertion of the village may have taken place during the spring or summer when no house fires were necessary. These pits were always located just within the house and in line with the entrance, never more than three feet removed.

Door-ways:

There was no particular direction to which these doorways had to face, the north and the east being the common ones. It is highly probable that the doors were made to face toward the center of the village. They were very narrow, hardly ever exceeding fourteen inches. To enter the house it was necessary to step down a single step to the floor. The height of this step being from six to eight inches, this may give a lead to the depth these structures were excavated into the ground, proving they were very shallow pits.

Superstructure:

From the location of post holes in the floor and from imprints gotten from roof material, it is possible to form



TYPICAL FIRE-PIT.

a hypothetical reconstruction of the roof. The roof was probably flat. This idea is based upon the fact that the distribution of the post holes about the room, and all of them being about the same size, would bespeak a rather evenly distributed load. The entrance without a vestibule, and the entrance as shallow as it is, would need a rather high entrance which would call for a high wall. Were the wall slanting and coming near the ground, it would force one to continually stumble into the fireplace while getting the upper part of the body through the door. The environmental factor would probably dictate a flat roof and high walls to combat the summer heat which is great in the summer time in the San Pedro River valley.

From imprints a stringer beam ran down the center of the room as well as on the sides where they would be supported by a crotched post. Across these would be placed the secondary beams of much smaller diameter. At right angles to these were placed what appears to have been tulle reeds over which was plastered several inches of clay. In the destruction of some of these structures by fire, the roof was baked to a brick-like hardness and retained beautifully the imprints, as well as the charcoal, in places.

Bayles Ruin - Material Culture

ARTIFACTS OF STONE

Metates:

The word metate as it is used in archaeology is taken from the Aztec word metlatl and identifies the static element of the milling stones used by the Southwestern and Mexican aborigines.

In the Southwest it has been found that the Indian used and uses the metate in the grinding of cereals, seeds, and many times in the preparation of clay for the manufacture of pottery.

The Redington site produced a goodly number of these artifacts, which on the whole are very massive. This bespeaks the fact that we had a sedentary people living there.

The trough type was the only kind found and these were either made from shaped (Plate 19) or unshaped boulders (Plate). Very few would weigh less than one hundred twenty-five pounds. The size of the one shown in Plate 19 is twenty-two by seventeen inches. The walls of the troughs are abrupt and not curved.

The materials used were gneiss for the finer grained type as opposed to vesicular basalt for the primary grinding.

Metates were found on the floor level and at no definite location in the room.



METATES: REDINGTON SITE.



MANOS: REDINGTON SITE.

Manos:

The term mano (Spanish for hand) has been applied to the movable stone used in conjunction with the static metate.

Great quantities of these were found at this site to correspond to the large number of metates used.

Three types are identified and may be classed as:

A. Square:

This type is generally rather large (size of figure 1, Plate 19 - 10.5" x 5" x 2"). In use its massiveness was partially overcome by having finger grips on the side to keep it from slipping from the hand.

B. Flat (Plate 19):

The flat type was in preponderance. This differs from the square variety in that the body is much thinner and the ends may be more curved. In both square and flat types only one grinding face was used.

C. Single-hand Stone (Plate 19):

These are a rarer type by far and appear that either face was used. They were smaller than the foregoing and could be manipulated easily with one hand.

The materials used in making manos were sandstone,

gneiss, and granite.

Stone Axes:

Stone axes were rare at Redington - only two specimens were found, and both differing. The workmanship was poor. Whether these were reject pieces and had been discarded, it is hard to say. Polishing had not been carried out on the blades and the pecked surface remained.

Technically the axes were of the three-quarter groove variety so common to this southern region, but on the fourth quarter of each could be felt, although hard to see, a very shadow of a fourth groove. This cannot be explained.

Plate 20, figure 2, shows a single bladed type. The body is long and the hammer end short and blunt. The grooves are shallow and the general appearance of the axe is wedge-like.

Plate 20, figure 1, illustrates the other type found - the double bladed variety. This artifact is on the whole thin and the grooves are much deeper.

Maul (Plate 20, figure 3):

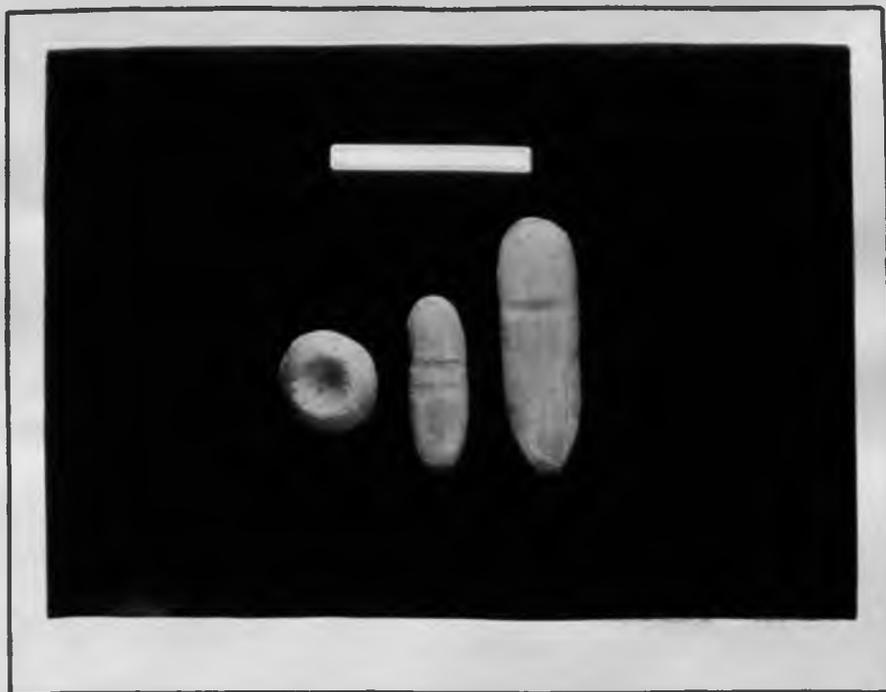
The single maul found is very crude. A natural formed stone was used and the constriction accentuated by very shallow grooving. The larger end showed the pounding surface.

Paint Mortar (Plate 20):

Only one example of this was found. It had been



AXE AND MAUL TYPES: REDINGTON SITE.



PIGMENT MORTAR AND ARROW-SHAFT POLISHERS: REDINGTON SITE.

pecked from a gneiss. The orifice was shallow. Dimensions were: diameter 3", thickness 1.5".

Arrow-polishers (Plate 20):

Two examples of these were found, both being of a schistose stone. The bodies were long and rather flat. The grooves were shallow in both the single and double grooved varieties. Dimensions of (a) are 5" x 2" x .5".

Spades and Hoes:

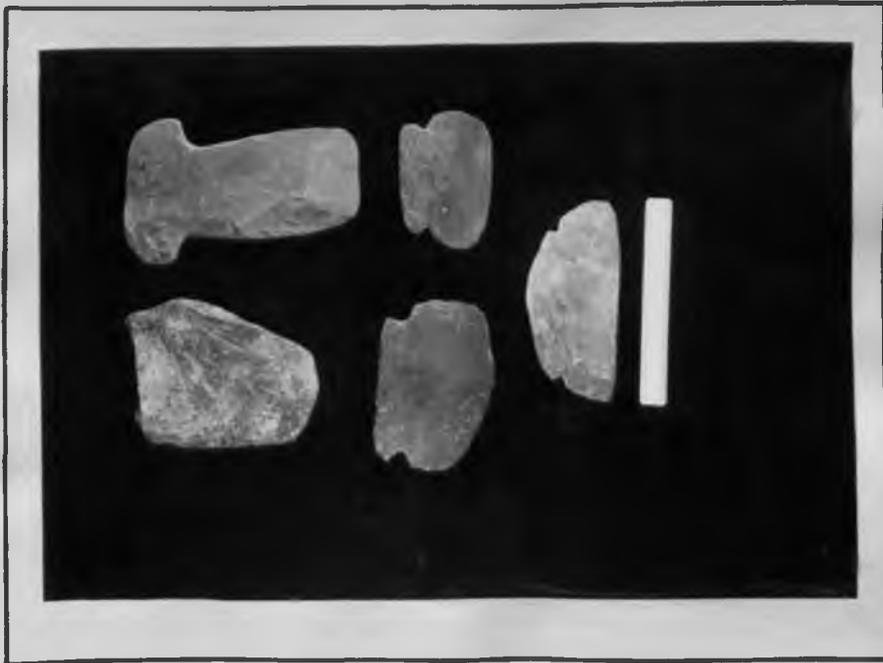
This type of artifact was very common at the Redington site, which helps to prove the agricultural status of its occupants.

Plate No. 21 shows a good example of the spade used there. Thin laminate stone was used. The upper part was shaped by percussion while the cutting edge was produced by abrasion. Length of (a) 7".

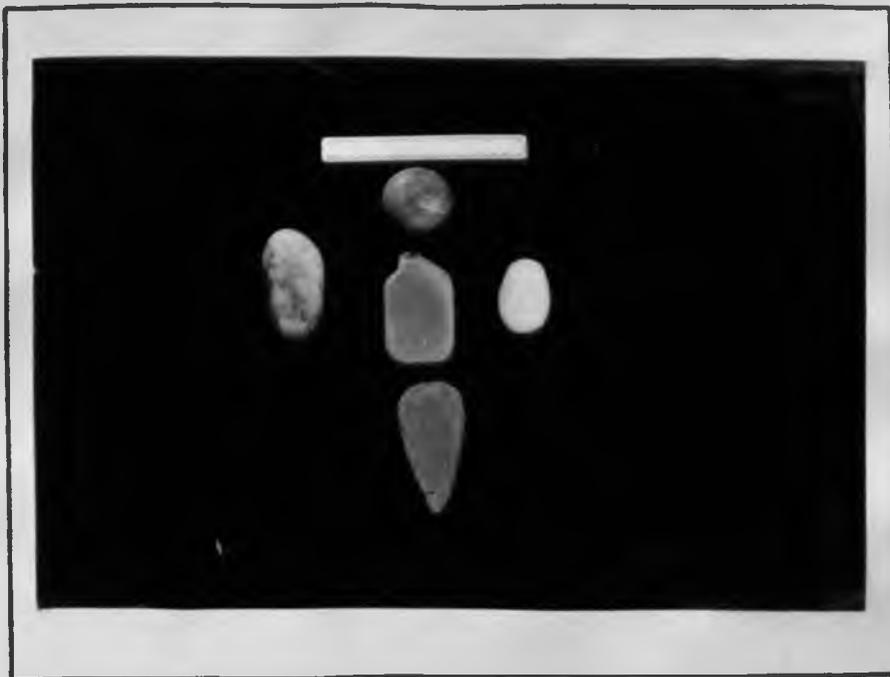
The stone hoes varied greatly in shape and size. All apparently were of schist and had been rubbed down to a rather sharp broad blade. These blades were either straight or curved, the edge either smooth or saw-toothed. The greater number were furnished with notches by which to haft them or for wrapping with a soft material to insure a better grip (Plate 21).

Rubbing and Polishing Stones (Plate 21)

A number of small smooth stones came to light in the excavation, which were probably used in the smoothing of



STONE SPADES AND HOES: REDINGTON SITE.



POLISHING STONES AND PROBLEMATICAL STONE: REDINGTON SITE.

pottery or in the working of skins.

Chipped Points:

Only two arrow-points were found and both of these were of the common square-shouldered variety made from obsidian. Their size ran from one-half inch to one inch and a quarter.

Several knives made from a large flake of stone with secondary chipping were found.

On the whole chipped implements were rare as well as not so well made as in other regions.

Stone Fetish:

In one room the writer and Mr. Hale uncovered a small stone bear. This artifact can be set up on the bottom and it appears that the bear is standing on its hind legs. The stone is a very hard reddish-brown sandstone and the workmanship was done by abrading.

Problematic Object (Plate 21):

An object shaped much like a spear-point but made of a slatey stone, and having the edges cut with notches to form a saw-like blade was found in Room 1.

POTTERY

The paucity of pottery recovered at this site leads one to believe that the art was either on the decline or that its occupants had left, taking all of the good pieces

with them.

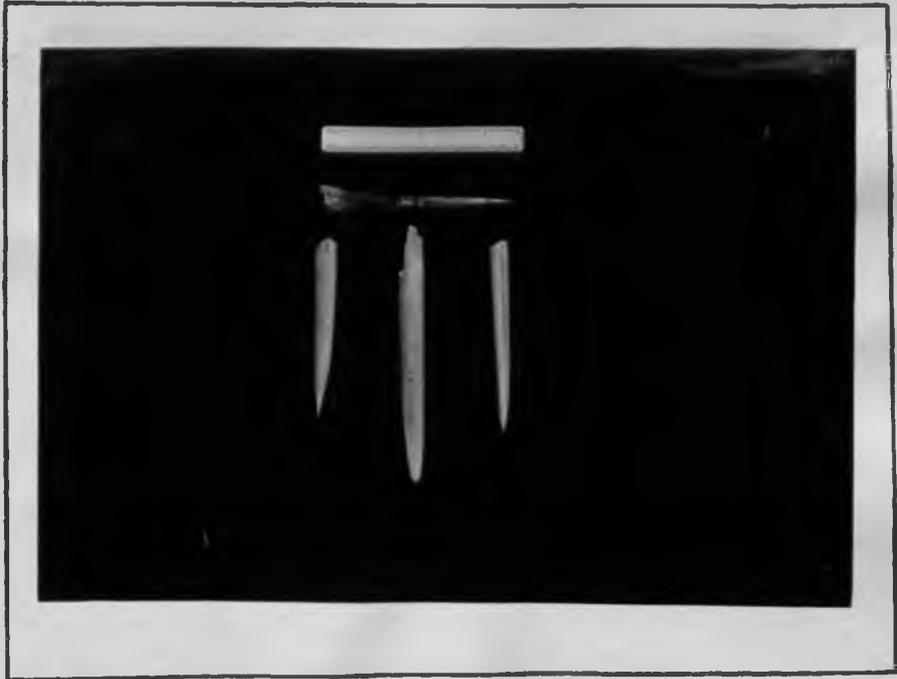
The dominant ware removed from the rooms was a plain reddish-brown variety occurring largely as ollas. The exterior finish shows rather a careless smoothing. From all evidence a slip had been applied. The interiors had been burnished by smoothing and then in the firing, carbon had been allowed to penetrate the pores.

These plain-ware ollas are globular in shape with a definitely out-turned lip. The piece pictured in Plate 22 is 14 inches in diameter by 12 inches in height.

An interesting point relative to these large jars is that they had been buried, generally in the corner of a room flush with the lip and a large flat stone used as a cover. These were without doubt storage jars and had been placed so as to conserve space in the room.

There were no complete pieces of decorated ware recovered at the Redington site. The floors of the rooms gave quite a few decorated sherds, but never more than a quarter of a complete vessel could be assembled from them. Gila polychrome was in the majority. The decorations were very similar to late types found at Christmas, Arizona, and at the University ruin near Tucson.

This ware showed the best workmanship of any from the site - a fine hard slip of good white overlaid with the design in a flat black. The shoulders of this pottery were



BONE IMPLEMENTS: REDINGTON SITE.



PLAIN-WARE OLLA: REDINGTON SITE.

rather broad and abrupt with a short neck.

Sherds of red-on-buff were rare, not more than a small handful being gotten from the entire excavation. These few were, however, of the late variety, a type which is found at other sites in association with Late Gila Polychrome.

On the surface at the Redington site a goodly number of corrugated red-ware sherds were to be found, but as none of these came to light in the "dig", it is impossible to say whether they were of the same age or that it was the remains of a reoccupied site.

ARTIFACTS OF BONE

Plate 22 shows the total of bone implements found at the Redington site. Three bone daggers, all of which were broken, were taken from the floor levels of the rooms. These are all of the split-bone variety. One bone punch, also broken but all of the pieces present, was found by the writer. Length of punch was six inches. In the case of bone artifacts, as with other material culture, it appears that the broken material was all that was left behind on desertion of the site.

Bayles Ruin - Conclusion

From knowledge gained in the excavation of the Bayles Ruin we can say that it belongs to the Rectangular Pit

period of development, a period which in southern Arizona carried over to a comparatively late date. It was hoped by the writer that in these late period ruins in the San Pedro River Valley that he would be able to make some discovery pertinent to the Sobaipuri Indians, but there was nothing.

The dwellers have had two types of homes, those of single dwellings and those of a contiguous nature. They practiced extensive agriculture as is evidenced by the large number of implements, both for cultivation and milling. A plain type of pottery was undoubtedly of their manufacture, but the decorated ware must have been trade stuff. The paucity of fine wares was evident. On the whole their arts seemed crude, but we must not be too harsh because it appears that they migrated. In this case they would take their finer artifacts with them, leaving only the broken imperfect ones such as we found in the "dig."

It is reasonably safe to say, as evidenced by datable sherds that these people lived here around 1300 A.D.

We are unable to say what physical type they were as no burials whatsoever came to light.

PART V

RECAPITULATION

The original idea back of this piece of work was to see if any connection could be made between the now extinct Sobaipuri Indians and the people who manufactured pottery and lived in the San Pedro River Valley in prehistoric times. This attack became more difficult as work progressed and the paper began to take on the form of a developmental study of human culture for the region, and in which form the writer has presented it.

The Spanish narrators failed to tell us whether the Sobaipuri made pottery or not, even though they did mention other material culture. This one point alone would be enough to cause the original plan to collapse due to the small amount of material available relative to the Sobaipuri.

Even though this idea failed, the research was worthwhile because it has brought together for the first time any mass of data on these people, and allowed a cultural history to be compiled on man's development in the area.

Let us then outline man's fight upward in the region as was revealed by this research. The earliest evidence shows that a Paleolithic culture was existent in the upper part of

the San Pedro River Valley, Arizona, in the Archaic period, at least 10,000 years ago. These natives were in a "gathering" stage and used only the crudest of implements. Whether a culture earlier and more crude existed in the valley is not known; only time and much patient work will reward us with the answer.

Following this we have a long period of "darkness" about which nothing is known until we enter well into the Christian Era, where we find existing in a rather high stage of Neolithic culture a people who have come to be known as the Hohokam. They were, from the earliest evidence so far found, living in the Gila Valley. Later they expanded and pushed into the San Pedro Valley, probably about 500 A.D., living there for 800 or 900 years where their culture evolved as it was contacted by other incoming groups. We find that their culture was influenced somewhat by the Mogollon of New Mexico between the years 900 and 1000 A.D., and later by the Mimbres, also of New Mexico, between the years 1000 and 1200 A.D. This influence in most cases was that which would be derived from pottery and contact through trade.

After 1200 A.D. the influence from a people in the Upper Gila drainage was being felt in the San Pedro. A new pottery was coming south, one which is today called Gila Polychrome. Some time later the makers of this pottery

began to press southward themselves, bringing with them such traits as inhumation and large surface homes. For several hundred years some of this group lived in the lower San Pedro, apparently alongside its natives who lived in pit-houses.

The question now arises - were these pit-house dwellers the Sobaipuri, and were the Sobaipuri the remnants of the early stock in the valley? It seems that there must be some connection somewhere between these people and the Sobaipuri because in 1539 when the Spaniards first came to the San Pedro Valley, they found them living sedentary lives and saying they had lived there for a long time, in fact long enough to populate the whole valley.

The writer sincerely hopes that this paper, although sketchy, may be the nucleus for further work relative to the ancestry of the Sobaipuri.

BIBLIOGRAPHY

Bailey, Vernon

Dwellers in the Desert, Nature Magazine,
vol. 23, Feb. 1934.

Bancroft, Hubert H.

North American States, 2 vol., San
Francisco, 1889.

New Mexico and Arizona, San Francisco,
1889.

Native Races, 5 vol., San Francisco, 1889.

Bandelier, Adolph

Final Report of Investigations of Indians
in Southwest United States, Papers of
Arch. Inst. of Amer., Amer. Series III,
Cambridge, 1892.

Contribution to History of Southwest Part
of the United States, Papers of the Arch.
Inst. of Amer., Amer. Series, vol. 5,
Cambridge, 1895.

Blake, William Phipps

Lake Quiburis, an Ancient Pliocene Lake
in Arizona, Univ. of Ariz. Monthly, vol.
4, no. 4, Feb. 1902.

Bogert, Charles M.

Saurians of the Southwest, Nature Magazine
vol. 16, Dec. 1930.

Bolton, H. E.

Kino's Historical Memoir of Pimeria Alta,
Arthur H. Clark Pub. Co., Cleveland, 1919.

Arizona and California Expeditions, 5 vol.
Univ. of Cal. Press, Berkeley, 1930.

Guide to the Materials for History of the
United States in the Principal Archives
of Mexico, Carnegie Inst. of Washington,
no. 163, 1913.

- Bolton, H. E. Spanish Borderlands, Yale University Press, New Haven, 1921.
- Brand, Donald and Sauer, Carl Pueblo Sites in Southeastern Arizona, Univ. of Cal. publication in Geog., vol. 3, no. 7, Berkeley, 1930.
- Bryan, Kirk San Pedro Valley Arizona, and the Geographic Cycle, Geological Society of America Bulletin, vol. 37.
- Campbell, Elizabeth Crozier and William H. The Pinto Basin Site, Southwest Museum Papers, No. 9, Los Angeles, 1935.
- Catlin, Clifford Norman Character of the Ground Water Resources of Arizona, Univ. of Ariz. College of Agri. Experiment Station Bulletin 114, Tucson, 1926.
- Chapman, C. E. Catalogue of Materials in Archives General de los Indias, Univ. of Cal. Press, Berkeley, 1919.
- Coves, Elliott On the Trail of the Spanish Pioneer, 2 vol., Harpers, New York, 1900.
- Culin, Stewart Games of the North American Indians, Annual Report, Bureau of American Ethnology, Govt. Printing Office, Washington, 1907.
- Darton, Nelson Horatio A Resume of Arizona Geology, Univ. of Arizona Bulletin, Geological Series, No. 3, 1925.
- Douglass, A. E. Dating Pueblo Bonito and Other Ruins of the Southwest, Pueblo Bonito Series, no. 1, National Geographic Society, Washington, 1935.

Fewkes, J. Walter

Tusayan Migration Myths, 19th Annual Report, Bureau of American Ethnology, Part 2, Washington, 1900.

Additional Designs on Prehistoric Mimbres Pottery, Smithsonian Miscel. Collection, vol. 76, no. 8, Govt. Printing Office, Washington, 1924.

Casa Grande Ruins, 28th Annual Report, Bureau of American Ethnology, Govt. Printing Office, Washington, 1916.

Antiquities of Upper Verde River, 28th Annual Report, Bureau of American Ethnology, Govt. Printing Office, Wash. 1916.

Finney, Fredrick Norton and Finny, L. L.

Arizona Reptiles, The Arizona Daily Star, Tucson, 1931.

Forbes, Robert Humphrey

The River Irrigation Waters of Arizona-Their Characters and Effects, Univ. of Arizona, Agri. Experiment Station Bulletin No. 44, Tucson, 1902.

Fulton, William Shirley

Archaeological Notes on Texas Canyon, Arizona, Contributions from the Museum of the American Indian, Heye Foundation, vol. 12, Nos. 1 and 2, New York, 1934.

Gidley, James William

Fossil Proboscidea and Edentata of the San Pedro Valley, Arizona, U.S. Geological Survey, Professional Papers, no. 140-b, Govt. Printing Office, Washington, 1926.

Preliminary Report on Fossil Vertebrates of the San Pedro Valley, Arizona with Descriptions of New Species of Rodentia and Lagomorpha, Geological Survey, Professional Papers, no. 131, Govt. Printing Office, Washington, 1923.

Gilmore, Charles Whitney

A New Fossil Turtle, Kinosternon
Arizonense from Arizona, U. S. Nat.
Museum Proceedings, vol. 62, art. 5,
Govt. Printing Office, Washington,
1923.

Gladwin, Winifred and Harold S.

The Eastern Range of the Red-on-Buff
Culture, The Medallion, Gila Pueblo,
Globe, 1935.

A Method for the Designation of Cul-
tures and their Variations, The Medal-
lion, Gila Pueblo, Globe, 1934.

Guiteras, Eusebio

El Rudo Ensayo de Sonora, in records
of Amer. Catholic Hist. Society,
vol. 5, 1894.

Harrington, M. R.

Gypsum Cave, Nevada, Southwest Museum
Papers, No. 8, Los Angeles, 1933.

Hodge, F. W.

Handbook of North American Indians,
2. vol., Bureau of American Ethnology
Bulletin No. 30, Govt. Printing Of-
fice, Washington, 1906.

Hough, Walter

Antiquities of the Gila Salt Valleys,
Bureau of American Ethnology Bulletin
No. 35, Govt. Printing Office, Wash-
ington, 1907.

Inglehardt, Friar Z.

The Franciscans in Arizona, Harbor
Springs, Mich.

Kidder, A. V. and Shepard, Anna.

Pottery of Pecos, Papers of the
Southwest Expedition No. 7, Yale
University Press, New Haven, 1936.

- Livingston, Burton and Shreve, Forrest
The Distribution of Vegetation in the United States, as Related to Climatic Conditions, Carnegie Inst. of Washington, pub. No. 284, Washington, 1921.
- Lockwood, F.
With Kino on the Trail, Social Science Bulletin, No. 5, University of Arizona, Tucson, 1934.
- Medallion, The
The Western Range of the Red-on-Buff Culture, Gila Pueblo, Globe, Arizona, (Undated).
The Red-on-Buff Culture of the Papagueria, Gila Pueblo, Globe, Arizona, (Undated).
- Macdougall, Daniel Trembly
Botanical Features of North American Deserts, Carnegie Inst. of Washington, Pub. No. 99, Washington, 1908.
- McClintock, J. H.
Radio Lectures, given from Phoenix, Arizona, during 1930.
- Palmer, Edward
Unpublished Manuscript in the University of Arizona Library. Written between 1850-80.
- Powell, J. W.
Indian Linguistic Families North of Mexico, 7th Annual Report, Bureau of American Ethnology, Govt. Printing Office, Washington, 1891.
- Roberts, Frank H.H.
A Survey of Southwestern Archaeology, Reprinted from Amer. Anth., vol. 37, no. 1, Jan. Mar., 1935.
- Russel, Frank
The Pima Indians, 26th Annual Report, Bureau of American Ethnology, Govt. Printing Office, Washington, 1908.

Sauer, Carl

A Spanish Expedition into the Arizona Apacheria, Arizona Historical Review, vol. 6, no. 1., Pub. by University of Arizona and Arizona Historical Society, Jan. 1935.

Sayles, E. B.

An Archaeological Survey of Texas, The Medallion, Gila Pueblo, Globe, Arizona, 1935.

Schwennesen, A. T.

Geology and Water Resources of the Gila and the San Carlos Valleys and the San Carlos Indian Reservation, U.S.G.S. Water Supply Paper 450, Govt. Printing Office, Washington, 1921.

Shantz, Homer Leroy

Natural Vegetation. Grassland and Desert Shrub., Atlas of American Agriculture, Washington, 1924.

Shreve, Forrest

Plant Life of the Sonoran Desert, Scientific Monthly, vol. 42, Mar. 1936.

Smith, George Edson Phillip

Personal Interview, Feb. 8, 1936.

Smith, Howard Vernon

The Climate of Arizona, Univ. of Ariz. Agricultural Experiment Station Bulletin 130., Tucson, 1930.

Swarth, Harry Schelwald

A Distribution List of the Birds of Arizona, Cooper Ornithological Club, Hollywood, Calif., 1914.

Thomas, Cyrus

Indian Languages of Mexico and Central America, Bureau of American Ethnology, Bulletin 44, Govt. Printing Office, Washington, 1911.

Trischka, Karl

Hohokam: A Chapter in the History of Red-on-buff Culture of Arizona, Reprinted from Scientific Monthly, vol. 37, Nov. 1933.

- U. S. Dept. of Agriculture Weather Bureau
Climatic Summary of the United States
Sec. 26, Southern Arizona, Govt.
Printing Office, Washington, 1930.
- U. S. Geological Survey
Report upon Geographical and Geol-
ogical Explorations and Surveys West
of the 100th Meridian, vol. 3.,
Govt. Printing Office, Washington,
1875.
- Vorhies, Charles Taylor
Poisonous Animals of the Desert,
Univ. of Arizona, Agri. Experiment
Station Bulletin 83, Tucson, 1917.
- Wetmore, Alexander
Fossil Birds from Arizona, U. S.
National Museum Proceedings, vol. 64,
art. 5, Govt. Printing Office, Wash-
ington, 1925.
- Winship, G. P.
Coronado Expedition, 14th Annual
Report, Bureau of American Ethnology,
Govt. Printing Office, Washington,
1896.
- Wyllys, R. K.
Velardes Relacion of Pimeria Alta,
New Mexico Hist. Review, Santa Fe,
April, 1931.

