

9-1-1943

The Chihuahua Culture Area

Donald Brand

Follow this and additional works at: https://digitalrepository.unm.edu/nm_anthropologist

Recommended Citation

Brand, Donald. "The Chihuahua Culture Area." *New Mexico Anthropologist* 6, 3 (1943): 115-158. https://digitalrepository.unm.edu/nm_anthropologist/vol6/iss3/3

This Article is brought to you for free and open access by the Anthropology at UNM Digital Repository. It has been accepted for inclusion in New Mexico Anthropologist by an authorized editor of UNM Digital Repository. For more information, please contact disc@unm.edu.

THE CHIHUAHUA CULTURE AREA*

By DONALD D. BRAND

INTRODUCTION

The northwestern corner of Chihuahua possesses an especial interest for the student of the historical geography of western America as it is situated upon the most direct and most likely line of cultural contacts between south Mexico and the American South-

*NOTE: The material herewith published was based upon fieldwork by the writer during the period September 1930-July 1931 while a traveling fellow of the University of California. These notes were incorporated in an appendix to the writer's thesis *The Historical Geography of Northwestern Chihuahua* which was deposited in the University of California library in September 1933. The writer did not publish these field survey notes earlier since he hoped to accomplish further field research which would allow a more definitive presentation of the material. A brief trip into the northern periphery of the area was made in 1935; and in the summer of 1936 the writer conducted a University of New Mexico field party which carried out further reconnaissance and trenched for stratigraphic information in two sites within the Carretas drainage. Since 1936 the writer has not returned to the Chihuahua area, and any further work there is precluded until the end of the war. Although a few other individuals and institutions have worked in the Chihuahua region during the past fifteen years, there are very few publications to be added to the list presented in the writer's article "The Distribution of Pottery Types in Northwest Mexico," pp. 287-305, of the *American Anthropologist*, vol. 37, 1935. The more important publications are:

E. B. Sayles: "Some Southwestern Pottery Types, Series V," *Medallion Papers* no. XXI, Gila Pueblo-Globe, 1936. As indicated in the Foreword, the writer concurs with Sayles in the nomenclature employed where it replaces names applied by Brand in article of 1935.

E. B. Sayles: "An Archaeological Survey of Chihuahua, Mexico," *Medallion Papers* no. XXII, Gila Pueblo-Globe, 1936. This is a brief report of a reconnaissance survey of 1933 which covered some two hundred sites, many of which were not located by Brand in his four hundred sites of 1930-31 nor by the University of New Mexico party of 1936 which located about one hundred new sites.

Douglas Osborne and Alden Hayes: "Some Archaeological Notes from Southern Hidalgo County, New Mexico," *New Mexico Anthropologist*, vol. 3, no. 2, 1938. A report on some of the activities of the University of New Mexico field party of 1936.

Donald D. Brand: "Aboriginal Trade Routes for Sea Shells in the Southwest," *Yearbook of the Association of Pacific Coast Geographers*, vol. IV, 1938.

Robert Lister: "A Report on the Excavations Made at Agua Zarca and La Morita in Chihuahua," *Research*, vol. 3, no. 1, 1939. This is the only publication to date on the work of the UNM party of 1936 in Chihuahua. This article is a condensation of a portion of a Master's thesis presented by Lister (who was a student assistant on the 1936 expedition). The entire thesis, filed in the library of the University of New Mexico, synthesizes the field notes of the entire party.

A. V. Kidder: "Notes on the Archaeology of the Babicora District, Chihuahua," pp. 221-230, *So Live the Works of Men*, Albuquerque, 1939. These notes are based upon work done in 1924.

Donald D. Brand: "Notes on the Geography and Archaeology of Zape, Durango," pp. 75-105, *So Live the Works of Men*, Albuquerque, 1939. This incorporates the writer's most recent publication on the southern relationships of the Chihuahua culture region. The field work was done in 1936.

The natural landscape of the Chihuahua region has been treated by the writer in "The Natural Landscape of Northwestern Chihuahua," *University of New Mexico Bulletin* 316 (Geological Series 5:2), 1937. The maps and descriptions in this bulletin are useful in connection with places and areas mentioned in this article.

west. From the American border to Zacatecas lies an expanse whose pre-Spanish settlement history is virtually unknown and unstudied. Only by a series of studies, based on archaeologic and historical data interpreted in the light of an intimate knowledge of the terrain, can be evaluated the significance of this area to man. The writer has attempted such a study for the most northern of the cultural areas into which this "culture corridor" is divisible.

The reconstruction of the prehistoric settlement scene in Chihuahua presented itself as a threefold problem: The determination of the extent of the culture, in time and space; connections and interactions with neighbouring cultures; and the actual utilization of the settlement area. In order to cover the entire area and map its extent and divisions, only a reconnaissance survey was possible within the year (1930-31) available for field study. This reconnaissance was based on the visiting of all archaeologic sites reported or discovered, and the gathering of a representative collection of surface artifacts. These artifacts consisted principally of potsherds, manos, metates, axes, arrowheads, beads, and other items of terra cotta, stone and shell. The validity of conclusions drawn from this superficial remains is debatable, but sanction has been given to this method by the normally close correlation with the results of excavations.¹

More than 400 archaeological sites (mounds, caves, fortifications and potsherd areas) were visited within the culture area. A check was made, on the spot, of the potsherd types represented at every site; and shard collections for later study were made at nearly a hundred of the largest sites, as well as from isolated or peripheral locations. An analysis was made of the potsherds from these sites, and the dominant culture (in terms of diagnostic wares) was determined by relative percentages. These determinations were incorporated in a table, which lists the number of shards of eighteen different wares found at seventy-eight of the sites visited. Notes were taken on metates, manos, axes and other stone artifacts, but no attempt was made to collect these weighty items.

Due to the governmental prohibition of excavations, it was virtually impossible to determine the ground plan for most of the house ruins, which commonly consist of "melted down" earthen walls. The normal ruin—*montezuma* to the Mexicans—presents the appearance of a grassy mound, sometimes marked by a few mesquite shrubs, the fragments of metates, an occasional axe or maul, and several manos. Stones did not commonly enter into the construction of the house walls, and *cimientos* or *escombros* (lines of up-ended stones, representing the former walls) are not common in Chihuahua. In this regard the Chihuahua ruins are in decided contrast with those of the Mimbres, upper Yaqui and other regions to the north and west.

1. Medallion, The, "The Use of Potsherds in an Archaeological Survey of the Southwest, (Pasadena, 1928).

Sauer, C. and Brand, D., "Prehistoric Sites in Southeastern Arizona," 417-18, (Berkeley, 1930).

A reliable concept, however, can be formed of the general house structure in Northwestern Chihuahua from the many partial and destructive excavations of pothunters.

ARCHAEOLOGIC SITES BY DRAINAGE AREAS

Bavispe-San Bernardino:

The description of the Northwest Chihuahua culture area will be undertaken by drainage units. On the basis of potsherd representation the northwestern corner of the culture extends into Cochise County, Arizona, and the northeastern *municipios* of Sonora. As indicated in previous studies,² peoples of Chihuahuan culture occupied small marginal villages on the flanks of the Chiricahua and Swisshelm mountains, and extended into the northern valleys of Yaqui drainage. Ruins yielding a high percentage of Chihuahuan shards are reported from along the line of the Nacozari railroad as far south as the Cima de Nacozari. No Chihuahua ruins are known from below Rancho de Teras on the Bavispe, and the southern margin seems to swing southeastward between the Sierra de Teras and the Sierra de Bacadéhuachi to the vicinity of Huépari. A considerable number of nearly pure Chihuahua sites exist in the lower valley of the Río de San Bernardino, and up the Bavispe from Colonia Morelos to the headwaters. These ruins increase in number and size eastward into the Sierra Madre, the lines of migration apparently being from Chihuahua down the canyons of the Guadalupe, Cuchuvérachi, Pulpito, Cuesta Grande, La Cañada Grande, Tesahuínori and Dos Cabezas. Many large *montezumas* are reported for several of these arroyos, especially the Arroyo de Tesahuínori.

In the Bavispe-San Bernardino district, the ruins are commonly indicated by outcropping stones, a feature uncommon in Chihuahua, set in straight lines to form small rectangular rooms averaging eight by twelve feet in size. Many of the arroyos and slopes are terraced with rock walls or *trincheras*, probably used to retain small plots of soil for crops of maize, beans and pumpkins. No evidence for irrigation has been recorded from this district, although it would have been feasible in a number of the valleys. Several of the isolated hills and mesas have been fortified with rock parapets, and are locally known as "cerros de trincheras" but they should not be confused with the *trincheras* for agricultural purposes. The pottery found in the ruins grades from pure Chihuahuan types along the east to mixtures with raked or crudely incised wares and a triangularly gouged red ware in the north and west. In general there is very little overlapping of cultures, the raked, crudely incised and gouged red wares normally occurring together and apart from the Chihuahua sites.

2. Bourke (1886), Bandelier (1892), Lumholtz (1902), Blackiston (1908), Amsden (1928), Sauer and Brand (1930, 1931).

Animas-San Luis:

Shut off from the upper Animas drainage by a beach ridge is the verdant little San Luis basin, nestled along the Mexican border between the San Luis and Guadalupe mountains. In to this former lakebed flows Cloverdale Creek from the west out of a rather broad intra-montane valley. (Numbers in parentheses after site names are the writer's site numbers.)

Cloverdale Park (77)—

Along the left bank of the stream, about two miles east of Cloverdale Post Office, is situated the most southern site recorded for Middle Gila Polychrome. A nearby oak grove, level expanse of good soil, and an abundance of water supplied the necessities of Indian life. Surface indications are limited to several dispersed low small grass-covered mounds. The area afforded only a few shards after a thorough search, and stone artifacts were lacking. The triangularly gouged redware, which seems to center in this area, is the most common ware, and Middle Gila Polychrome is the principal painted ware.³ Trade with Little Colorado and Chihuahua peoples is indicated.

Farther up stream, about two miles, is a site on the Stewart ranch which was not revisited (Sauer and Brand, 1931, site no. 40).

Immediately northeast of the beach ridge, commencing about five miles from the Cloverdale Post Office on the San Luis road, is a large juniper-oak-yucca association invaded by sand dunes from the southwest. No definite site was located here,⁴ but numerous stone spalls and a broken mano of vesicular lava were found. A more prolonged search would probably locate potsherd sites near Juniper Springs, within this grove.

The Upper Animas valley is about thirty-three miles long, from near the San Luis beach ridge to Animas station on the El Paso and Southwestern Railroad. The upper twenty-five miles is a centrally trenched basin, with terraces that extend back onto the flanks of the Peloncillo and Animas mountains. Sites are reported to exist on several of the lower terrace spurs, principally along the west side of the valley. The valley opens out in its lower reaches to merge with the flats of the Animas *playa* north of the railroad. Broad smooth pediment slopes extend from the valley floor eastward into the Animas range. Along the Animas and the tributary creeks that have slightly incised the pediment slopes is an abundance of good agricultural land. Here are located the largest ruins of the Upper Animas:

Maddox Ranch (76)—

A large non-defensive site is situated on a low bench west of the Animas Creek on the Maddox ranch about sixteen miles

3. These results differ somewhat from an earlier hasty reconnaissance made in 1929. Sauer and Brand, 1931, list this ruin as Cloverdale Park, no. 6. Kidder excavated in the Cloverdale area in the 1930s.

4. Huntington, E., "Climatic Factor as Illustrated in Arid America," Carnegie Inst. of Washington, Pub. 192: 70-72, (1914), noted several potsherd sites for this portion of the Animas valley.

south of Ánimas station. Low gravel and adobe mounds cover about sixty acres in the front yard of the ranch house. These mounds are disposed around depressions, indicating a compound arrangement of houses. One room has been partially excavated by the owners, revealing plastered mud walls, an ash stratum just above the floor, and several juniper posts. No burials or pottery were uncovered. The room was nearly twelve feet square. From the surface have been collected many scoop and trough metates, manos and axes. Most of the metates and manos were of basalt, although quartzite items were present. The axes were of the three-quarter groove type (Gila type) usual in this portion of the Southwest. A handled tray carved from vesicular lava was unique. A surface potsherd collection gave the same results as those obtained previously (Sauer and Brand, 1931, Holmes Maddox Ranch, site no. 5). This is definitely a Middle Gila Polychrome site, with strong representations of Chihuahua and Mimbres wares. Probably a detailed excavation would reveal the presence of an older Mimbres village topped or overlapped by a Middle Gila settlement. Such is the normal result of excavations at New Mexican sites having high surface percentages of these wares. Little Colorado and El Paso Polychrome wares were traded in, the latter ware here finding one of its most western trade sites.

Double Adobe Creek (1)—

The largest and best known site in the Upper Ánimas is that on Double Adobe Creek, two miles northwest of the Double Adobe ranch house which is about nine miles, by road, southeast of the main valley road at the Maddox ranch. The site consists of *cimiento*-topped mounds, overgrown with mesquite, which extend along the right bank of the creek for three-quarters of a mile, and away from the creek for about four hundred yards. The location is non-defensive, with abundant agricultural land, and a year around supply of water in the creek. The village plan is obscure, but probably is open compound, as at the Maddox site (no 76). Hundreds of mortars, metates and manos, mostly broken or worn out, are scattered over an area of some 160 acres. These mealing tools agree in material and structure with those of the Maddox site. (As the common metate of the Chihuahua culture area is of lava or quartzite worked into a scoop or trough form, only notable exceptions will be mentioned henceforth.) Potsherds and obsidian spalls are numerous. This is one of the sites definitive of the northern border for the Chihuahua culture. The Chihuahua polychrome wares dominate the painted wares, and the associated incised and red wares are well represented. El Paso Polychrome, Middle Gila Polychrome and Mimbres Black-on-white shards make up about one-fifth of the total shards collected. Triangularly gouged ware was totally lacking.

Pigpen Creek (2)—

On the north side of Pigpen Creek, as it debouches from the Ánimas foothills north of Double Adobe Creek, is a small site of some twenty acres. It is a valley margin site, much denuded, and overgrown with mesquite. The agricultural possibilities are much the same as those of the Double Adobe Creek site (no. 1). Only a few *cimientos* were visible. Several metates and manos and a few potsherds composed the surface artifacts. Mimbres Black-on-white, unaccompanied by its companion smoothed-corrugated ware, was the leading painted ware, but the evidence

of several Chihuahua wares would suggest this as also having been a Chihuahua site. El Paso Polychrome is represented, and Chupadero Black-on-white here makes its most western appearance as trade ware within the Northwest Chihuahua culture area.

Several small potsherd sites have been reported on the Upper Pigpen, Double Adobe and other creeks that head in the Animas mountains. Pictographs are present four miles up the canyon above the Double Adobe ranch house, and a cave with *ollas* and other artifacts has been reported on the north flank of Animas peak. Right at the ranch house is a site nearly obliterated by the successive activities of an army post, a stage depot and a ranch headquarters. Mortar holes in the bedrock and a few potsherds (one Chihuahua Polychrome) are all that remain.

Small sites also have been reported for the western portion of the Animas valley, especially where the Peloncillo mountains break down into hills near Antelope Gap.

Playas-Nogales:

The fifty-mile long Playas depression in New Mexico continues south, over an obscure water-divide just below the International border, some twenty miles more. The American portion is divided into the basin of the Playas lake, and the Upper Playas valley which drains out through Hatchet Gap into the Hachita valley. The Lower Playas basin is dry and desolate, the barren salt crusts and muds of the *playa* being flanked by gravel terraces and slopes sparsely vegetated with creosote bush and grass. A decided contrast is presented by the Upper Playas valley whose long pediment slopes of gentle gradient support a thick grass cover throughout, while extensive mesquite thickets fringe the foothills and interrupt the sway of creosote brush over the middle slopes by tongues along the arroyos. The drainage divide which bisects the Playas valley and approximately defines the change in vegetation also serves as the boundary between the pure Mimbres culture and the Chihuahuan. Not a shard of alien ware occurs in the Mimbres sites along the *playa* margin and on the tributary arroyos, and only one Mimbres Black-on-white shard has been found in the Upper Playas sites visited.

Ringbone Ranch (12)—

A pure Mimbres ruin about eleven miles west of Hachita, by road. It is located on a creosote bush covered gravelly ridge between two washes which join a short distance below the site and flow into an arroyo that runs by the Ringbone ranch well and out into the northern end of the Playas basin. The site consists of a group of about a dozen house *cimientos* located within an area 200 yards long and forty yards wide. Individual ruins are scattered down the washes for another 200 yards. The *cimientos* are the rests of one-roomed houses averaging eight feet by twelve feet, with walls constructed of stone slabs—the typical Mimbres structure. Only shards of Mimbres Black-on-white and the associated smoothed-corrugated ware were found. This site is decidedly marginal in its subsistence possibilities.

Lane Ranch (13)—

This is the most southern pure Mimbres site on record. It is just north of a small willow and rush bordered *ciénega*

(Murphy's Water Hole) one mile west of the Lane Ranch house and approximately one mile southwest of the Playas lake. The site has been plowed repeatedly, although left fallow for some years now, and there is little left except potsherds and manos strewn over some eight or ten acres of bare ground. There are faint traces of two *cimientos*. Mesquite brush covers the unplowed periphery. Only shards of the Mimbres complex were found here. A resident of the valley reported the plowing up here of a whole *olla* of plain redware, together with a human skull. Water supply and abundant land make this a better than average peripheral site.

The Upper Playas is drained by Deer Creek from the Ánimas slopes and by a smaller creek that heads in the Álamo Hueco mountains. The intervening plain is devoid of ruins until in the vicinity of Ojo de las Cienegas, which is below the junction of the two main lines of drainage. Most of the sites occupy pediment slope or intramontane positions along arroyos.

Walnut Creek (3)—

The Walnut Creek site lies on the right bank of Walnut Creek just west of the Culberson Ranch-Tuloss Ranch-Las Cienegas road, not distant from the Walnut Creek-Deer Creek confluence. Well preserved mounds of gravel and adobe cover perhaps thirty acres of mesquite covered terrain. The site is non-defensive, with abundance of water and good agricultural land. There were many metates, manos and mortars. A pothunting party from the University of Minnesota dug in several of the rooms and obtained a number of whole Chihuahua pots. The walls revealed were of plastered adobe. A collection of surface shards yielded a large number of Chihuahuan shards, with a strong representation of Middle Gila Polychrome and a few shards of Little Colorado Black-on-red and Chupadero Black-on-white. The Chihuahuan complex amounted to more than eighty percent of the total.

Upper Deer Creek (4)—

Three miles above the Culberson ranch house, on the left bank terrace of the Upper Deer Creek, is a site covering about forty acres. Modern adobe houses have been built over some of the ruins. There is plenty of water and agricultural land in this intramontane site. Human habitation and mesquite have obscured the settlement plan. On the upstream side a line of *cimientos* forty or fifty yards long extends at right angles to the creek. Only one circular *cimiento* was outside this wall, which probably was built for defensive purposes against attacks from the west over the pass from the San Luis valley. The mounds were grouped around depressions, in open compound form. There was a considerable number of broken metates and manos. During the border hostilities (1916-1917) soldiers from nearby posts made many surface diggings and completely dug out one room, which yielded juniper posts, charred maize on the cob and some whole *ollas* of Chihuahua ware. The walls of the excavated room were of plastered adobe. Potsherds of the Chihuahuan complex comprise more than eighty percent of the collection made here. Middle Gila Polychrome and El Paso Polychrome are well represented. Two shards of Little Colorado Black-on-red ware complete the trade wares found at the site.

Lower Deer Creek (5)—

Two and a half miles below the Culberson ranch house is a very large site on the old flood plain of Deer Creek, which here turns abruptly northeastward through a short narrow canyon between a spur of the Animas mountains and a small hill of recent effusives. The site covers about forty acres on the right bank of Deer Creek, between the creek and the road to the Antelope Wells customs house. Immediately to the south rise the steep bare slopes of the Whitewater Hills (*Cerritos de Agua Blanca*), across which runs the International border. A heavy growth of mesquite and cholla cactus gives testimony to the excellence of the land. Probably the entire flat was irrigated before channel trenching cut the stream bed down some eight feet. The mounds, some of which exceed eight feet in height, are compactly grouped, mainly in compound form. Many broken and whole metates and manos were strewn over the entire area. A great amount of superficial pothunting has been done here, principally by American soldiers. Judging from the size of the mounds and the quantity of potsherds this site would best repay excavation of any in southwestern New Mexico. (This site and numbers 1, 2, 3, 4, and 12 are on Diamond A property.) As is true of the entire Upper Playas, the Chihuahua wares represent around eighty or more percent of the total potsherd collection. El Paso Polychrome and Middle Gila Polychrome are the dominant trade wares, with Chupadero Black-on-white and Little Colorado Black-on-red completing the list.

Álamo Hueco (6)—

More than 160 acres are covered by an extensive site on a rather steep pediment slope, just to the west of the Álamo Hueco ranch house, where Black Canyon and Wood Canyon merge at the western foot of the Álamo Hueco mountains. This upper pediment slope or piedmont site is heavily covered with mesquite, but is being eroded rapidly. There have been many mounds, but the village plan is completely destroyed, and only a few *cimientos* are now visible. A large adobe walled room, nearly twelve feet square, was excavated here more than twenty years ago. Some whole pottery was recovered. This site is more heterogeneous than the others of this area. Chihuahuan wares predominate, but Chupadero Black-on-white, El Paso Polychrome, Middle Gila Polychrome, Little Colorado Black-on-red, Mimbres Black-on-white, and smoothed-corrugated ware are all present. (This site and numbers 7 and 8 are on U Bar property, belonging to Mr. R. V. Moorhead, resident at Álamo Hueco.)

Whatever may have been at Ojo de las Cienegas has been completely lost since the development of artesian wells there, and the holding of Diamond A Cattle Company roundups. Potsherds are reported to have been numerous formerly. Potsherd sites are also reported for Walnut Wells, and other localities in the valley.

In the high mountains on both sides of the valley—the Animas, Álamo Hueco and Big Hatchet (Sierra de la Hacha)—are reported to be a number of cave and cliff dwellings. Caves with pottery are said to be in the Animas mountains above Deer Creek Box. A cliff house is reported near Big Hatchet Peak.

The basin of the Mexican extension of the Playas depression lies between the Sierra de Enmedio and the Sierra del Perro, and receives

drainage from the northwestern corner of Chihuahua via the Agua Blanca, San Francisco and Nogales arroyos. These streams head in the Agua Blanca, San Luis and Espuelas mountains, and are augmented by strong springs which break out along the valley margin. The upper courses of these arroyos carry water the year around, but their waters seldom get far into the main valley. Consequently, practically all of the archaeological sites are restricted to the upper pediment slopes and intramontane valleys. Only a few ruins exist in the low dry hills which extend south from the Sierra del Perro.

Ojos de San Francisco (38)—

About seven miles south of the Agua Blanca border gate the road from Culberson's ranch to Carretas crosses the Arroyo de San Francisco. Somewhat over a mile upstream is a tank (earth dammed reservoir) at the Ojos de San Francisco. Several old adobe houses are just north of the dam, and around these houses are several mounds. These mounds have been partially excavated to supply fill for the dam. The site is of little interest excepting that here was obtained a rather high percentage of Huérigos Polychrome in addition to the dominant Casas Grandes Polychrome. El Paso Polychrome and Middle Gila Polychrome represent the trade wares.

Only a few flint and chert spalls were found at the Ojo Agua Blanca. A small compound mound, about forty yards square, is on the right bank of the Arroyo del Oso, between two dirt dams about a quarter of a mile west of the Carretas road, and four miles south of the border. The mound is low, grass covered, and untouched. Two metates and a few plain and Chihuahua shards were observed.

Arroyo Nogales (33)—

Twelve miles south of the Agua Blanca border gate the Antelope Wells-Carretas ranch road crosses the broad wash of the Arroyo Nogales. A large mound lies on the left terrace bank of the arroyo, about a third of a mile upstream from the crossing, and half a mile north of the actual stream. This is a pre-eminently good agricultural site with a large flat of alluvial soil in the arroyo bottom, and a perennial supply of water nearby. The site is grass covered, eighty yards E-W by sixty yards N-S, with a number of mortars, scoop and bowl metates, and manos strewn over the surface. Here was seen a perfectly carved rectangular block of heavy vesicular lava, about ten inches long, by four high and six wide. Several of the adobe walls of the compound appear plainly at the surface. The shards are chiefly Chihuahuan, with a few El Paso Polychrome, Middle Gila Polychrome and Little Colorado Black-on-red.

About one and a half miles above this site is a small potsherd site with a few plain shards and some manos. On the same side of the arroyo (left bank) and just east of the road is a small much-denuded mound, similar in position and artifacts to site number 33. Undoubtedly there are other ruins along this arroyo.

On the northeast side of the valley there are reported to be several small cliff houses in the Sierra del Perro. None of these was encountered, but a small craggy hill or *peñasco*, with caves and one rock shelter on the sides and some crude defensive

stone walls on top, was found six miles east of La Garita del Berrendo (Mexican customs house, opposite Antelope Wells), via the Contrabanda tank and windmill. The caves held only bat guano, but in the shelter and on top were a few spalls, and shards of Chihuahua polychromes, Chupadero ware and El Paso Polychrome. There is reported a mound site on a small arroyo some twenty miles south of Antelope Wells on the road to Salta de Ojo, and one mile upstream from the road.

The only known site from the dry southern portion of the Nogales basin is on a sand dune ridge, just east of the first and largest *peñasco* north of the Río Carretas. Here, in the midst of dry *playas*, were found bowl metates, manos, spalls and shards of plain, corrugated and incised ware. The presence of only small metates and utility ware may indicate that this site was occupied temporarily, perhaps only in seasons of excessive precipitation when *charcos* could provide drinking and cooking water.

Carretas:

South of the Playas-Nogales country open up the plains of Carretas, drained by the Carretas system. Many ruins occur along the mountain margins where streams leave their mountain canyons to flow across the plains and quickly lose their waters in the porous soil. These ruins continue along the major streams even well out into the plains, but are seldom more than half a mile from the stream. The largest ruins tend to occur out in the plains, but the greatest numbers of ruins are piedmont and intramontane sites. Altogether, in numbers and size, the ruins of the Carretas basin are second only to those of the Casas Grandes valley proper.

Huérigos (32)—

A large site lies on the left bank of the Arroyo Huérigos, eight miles north of the Benton Ranch, and about twenty-three miles from Antelope Wells. The site consists of a mound about forty yards square, situated 200 yards north of the Benton Cattle Company's east-west fence; a smaller mound about a hundred yards north of the first one; and a quite large mound about eighty yards farther upstream. The largest mound is of indeterminate size as it has been scraper trenched or "fresnoed" to provide the fill for a rock-faced adobe dam across the arroyo. This dam has been broken for several years and is disintegrating rapidly. The mounds are vegetated with grass and mesquite, the two smaller ones having their surfaces untouched by the destructive scraper. The mound area is about a hundred yards west of the road, on a steep graded denudational slope from the nearby Sierra de Enmedio to the Arroyo Huérigos. Farming here was probably of the *temporal* type, dependent upon summer rains and sheet wash to provide natural irrigation. Enormous quantities of potsherds, and many metates, manos, hammerstones, axes, arrowheads and adobe walls have been exposed by the trenchings. This site would amply repay a careful excavation. It is of especial interest as the type location for Huérigos Polychrome which had its greatest development here where it bulks one-third of the painted ware, and appears in greatest absolute numbers. The Chihuahua pottery complex is completely represented here, with El Paso, Chupadero and Little Colorado wares representing trade connections. The considerable number

of Middle Gila shards is probably a result of local imitation of that ware, since there are certain differences in paste and decorative technique pointing to that conclusion.

Several mounds are located along the right bank of the arroyo about two miles above Huérigos. Seven of the mounds are located within the distance of a mile, all about a hundred to 150 yards west of the arroyo channel. They are grass clad and untouched by man. Several scoop and bowl metates and a few Chihuahuan shards appeared on the surface. Three and a half miles north of Huérigos, and less than a mile above the last of the previously mentioned mounds, is a small partially excavated mound on the left bank between the road and the arroyo. A wooden corral, broken dam, windmill and tank are nearby.

A mile and a half north of the windmill, just at the north foot of a bare granitic hillock of exfoliating boulders and south of a spring in a large canebrake, is the Chupaderos del Carrizo site. This is a large compound type ruin, scarcely off the road. It is composed of two large compounds parallel to the road for 150 yards, with four small mounds a few yards down slope toward the arroyo, and then another large compound. The surface is covered with grass and mesquite, and very few artifacts were exposed on the surface. Two very deep mortars in loose conical rocks about two feet high stand in the southeast corner of the ruin area.

Two of the larger arroyos that lead down from the Sierra Espuelas opposite the Sierra de Enmedio were examined but no mound sites were found. Several mortar holes were found in the bedrock of the canyon bottom, and manos were found on ledges in front of caves and rock shelters high up on rhyolitic crags. These caves and shelters are now the homes of mountain sheep, and numerous trails and "nests" were located.

Arroyo de la Varas (39)—

Where the Arroyo de las Varas breaks out of the Sierra Pulpito there is a large ruin area on the right bank terrace edge crossed by the telegraph line and the Pulpito pass road from Ojitos to Colonia Oaxaca. The ruins commence about a tenth of a mile below the junction of the Pulpito and west Huérigos valley roads, and extend eastward about 400 yards. There is an abundance of good agricultural land on the river plain, which is about fifteen feet below the terrace ruins. These mounds are grass clad and virtually untouched. They should be excellent for excavation. The main mound is about eighteen feet high, which places it among the highest in Chihuahua, outside of the Casas Grandes. Four small rock piles with associated potsherds (trash heaps?) are just northeast of the main mound. A narrow mound ninety yards long lies just south of the high mound, and is flanked by a large mound on the west and three small ones on the east. Just south of the mound group is a large closed compound seventy yards north-south and thirty yards east-west. Many potsherds, manos, metates, and several axes were found here. Also a parrot, well carved in bone. Chihuahuan wares are practically alone at this site. Among them Huérigos ware shows considerable strength, although quite secondary to the ubiquitous and all-dominant Casas Grandes Polychrome.

Scattered along the valley of the Upper Las Varas are a dozen or more Chihuahua mound sites. They probably indicate

the line of colonization that resulted in the numerous Chihuahuan sites around Colonia Oaxaca, on the other side of the Pulpito pass.

A trifle more than three miles east of the Las Varas site (39), and 500 yards north of the telegraph road across a *ciénega* area is a group of mounds covered by a dense thicket of hackberry, shrub oak and a few sycamores. The drainage line of the Arroyo de las Varas appears indistinctly somewhat to the north. Only a few shards were noted here.

The foothill road from Arroyo de las Varas to Carretas ranch forks south from the telegraph road about a quarter of a mile east of the Las Varas mounds. Somewhat over a mile south of the road fork a small arroyo is crossed. One mile up this arroyo is situated the Tanque Montezuma—a small earth dam across the right hand branch of the arroyo, which forks half a mile below the dam. On the low ridge between the arroyos, and just northward of the tank, are several small compound mounds and a large single mound. The potsherd and mound area is grass and mesquite covered, and extends 130 yards east-west and 120 yards north-south. Some excellent *cimientos* outline portions of the walls. Only a few metates, manos and shards appear on the surface. A small mesquite covered mound is some 400 yards west, on the left bank of the north arroyo.

One mile south of the Arroyo Tanque Montezuma, the Carretas road crosses another small arroyo. Up this arroyo about a third of a mile west of the road, and just north of an earth dam across the mouth of a shallow draw, is a group of grass covered partially excavated mounds. There are three large mounds, with evidence for one compound, in an area a hundred yards east-west by fifty yards north-south. The central mound abruptly rises to a height of about fifteen feet. About 120 yards to the northwest is a small mound, less than forty yards long and twenty yards wide. A few metates and manos had been thrown aside by erstwhile excavators. The shards were Chihuahuan.

The Carretas road continues south, skirting the lip of a small earth dam two miles from the last mentioned site, and crosses a large oak bordered arroyo after another mile. Along the left bank and on the very brink of this arroyo are several large mounds. One small L shaped mound is twenty yards east of the road, and the main group of three compounds commences thirty yards on the west side of the road. There are several outstanding stone-lines or *cimientos*. All the ruins are grass covered and untouched, except by arroyo cutting. The artifacts are all typically Chihuahuan.

Three miles south of the oak-gallery arroyo the Las Varas-Carretas road swings down out of the foothills into the valley of the Upper Carretas, and joins the Ojitos-Carretas road at a stone corral (Manga Punta de Agua) opposite the north end of El Lagarto spur of the Sierra Peñuelas, which in turn is a ramification of the Sierra Tesahuinori. The Upper Carretas rises in a number of small arroyos that flow down from the Sierra Tesahuinori and its eastern and western arms. The western arm is composed of the pine-clad Sierra Oso and Sierra Hachitahueca (a corruption of the Opata *Ochetahueca*), between which lies the famous Cuesta Grande de Carretas. Back of the Carretas headwaters commences the rugged little known wilderness of the true Sierra Madre Occidental—unmapped, inhabited

by a few Apaches and outlaws, and crossed by only one permanent trail until the Aros is reached.

In the ten miles of river valley between the Carretas headquarters ranch and Manga Punta de Agua, where the river valley broadens out north of El Lagarte, there are a dozen noticable ruins. All but one of these are on the left side of the river, usually on an upper terrace spur near a lateral arroyo. All are grass covered, and only two have been excavated at all. Besides the larger ruins of evident adobe construction, there seem to have been numerous small stone and mud habitations scattered along the river margin, as indicated by small stone *cimientos*. There were some scoop metates, but bowl metates seemed to predominate in the Upper Carretas valley. Manos and metates were most frequently associated with small *cimientos* located usually at a short distance from the mounds. These may represent "outdoor" kitchens where the grinding of meal and cooking of food took place. Potsherds were noted at all the sites. The percentage distribution of wares in Carretas C (29) is typical.

Carretas C (29)—

This site is a D shaped compound, two and a half miles downstream from the Carretas ranch house and one mile east of the main road, and is situated 400 yards from the left bank of the river channel in the Alley-Sims horse pasture (rented from the Carretas ranch). It is grass covered, but has been pothunted recently. Plastered adobe walls, metates, manos, hammerstones and shards were exposed by the diggings. The position, in a secluded valley having abundant water and good land, with game and wood on the nearby forested hills, must have been nearly ideal for the builders of this small village. It is a pure Chihuahua site, showing a strong development of Huérigos Polychrome.

Below El Vado del Lagarto, at Manga Punta de Agua, the Carretas flows in a shallow channel across the open grassy Llanos de Carretas. Dotting the plain on both sides of the stream are several scores of ruins, ranging from tiny one roomed mounds up to huge compound groups that cover many acres. The average valley mound is about eighty yards long, fifty yards wide and has a bowed crest profile suggesting a terraced structure of from one to three stories. Adobe was the principal material for house construction, and stone *cimientos* are nearly lacking. The normal ruin group is composed of several small compact mounds arranged without seeming design about one or two compound mounds. These compound mounds appear to have developed by the addition of rooms, as the need arose, to form open rectangular designs similar to those arising in the game of dominos. The artifacts invariably include lava metates, manos, and mauls, as well as hammerstones, three-quarter grooved axes, a very few obsidian arrow points, pieces of turquoise, bone and shell beads and many shards. More than two dozen different ruins were investigated in the twenty-odd miles between Manga Punta de Agua and the confluence

with the Arroyo de los Alisos. The potsherds from all of these are dominantly Chihuahuan, with a strong representation of the Huérigos Polychrome. As one descends the Carretas river, an increasing number and variety of trade potsherds make their appearance in the surface collections.

Papalote Nuevo or Carretas P (40)—

Three miles below El Vado del Lagarto, a ranch road leads west from the river road and crosses the river to a tank and windmill, El Papalote Nuevo. Upon the left bank of the river, about 300 yards east of the windmill, is a large compound mound being cut into by the river. A larger complex mound and two smaller mounds extend eastward over 130 yards. This site is grass covered, and has been only slightly pothunted. Metates, manos and shards abound. Only Chihuahuan wares are represented here (the Middle Gila Polychrome found here is probably of local manufacture), with a high percentage of Huérigos Polychrome. It is an excellent site for excavation. [This site was trenched for stratigraphic information by a University of New Mexico party, summer of 1936.]

One of the most extensive sites is that crossed by the Ojitos-Las Varas telegraph road, less than a half mile east of the right bank of the Río Carretas, and close to a small grove of oak trees. This site is composed of a close association of large single mounds and compounds, about 300 yards long in a north-south direction and seventy yards wide. They are situated in the river plain and have been somewhat covered by windblown sand and silt. The mounds are grass covered and untouched. Metates, manos, and shards are abundant. This is one of the finest excavation possibilities in the Carretas country.

Carretas W (41)—

About four and a half miles from where the telegraph road crosses Arroyo Peñuelas at Tanque Peñuelas is a huge grass clad and untouched compound and mound area in the Carretas plain about 500 yards east of the river. The river road goes over the middle of the mound area. The ruins extend 320 yards NW-SE and are a hundred yards in width. Many scoop metates, manos, etc., are strewn over the area, as well as great quantities of shards. The largest mound, centrally located, is well over fifteen feet high. This is probably the largest archaeological site in the Carretas basin, and should well repay excavation. The inhabitants of the village were evidently quite prosperous and enterprising as every type of Chihuahua ware is represented, as well as Chupadero, El Paso, Mimbres, Middle Gila and Little Colorado trade wares. Factors contributing to the importance of this site may have been the central position in relation to routes leading into the Upper Carretas, Las Varas, Huérigos, Lower Carretas, Janos, Ramos and San Pedro areas.

Beginning one mile northeast of Carretas W (41), the *llano* is dotted with mounds which are all grass clad and undug. This mound area extends approximately NE-SW, parallel to and on the right side of the river and road. These mounds occupy a very slight elevation or ridge about a half mile east of the Río Carretas. Six of the largest ruins were examined in this area. No differences from the other sites of the Middle Carretas were noted.

In the stretch below the Carretas-Los Alisos confluence, as far as the canyon at Salta de Ojo, the Carretas meanders over

the plain in a shallow sandy bed bordered by considerable mesquite thickets. Only a few small sites were noted in this sector. Probably there never was much aboriginal occupation of this area due to shortage of water during most of the year.

Many ruins are scattered in intramontane sites along the upper valleys of the Peñuelas, Alisos, and Agua Zarca, and extend in diminishing numbers past the pediment margin out into the open plain. There are also a number of small sites on the shallow draws that border the Llanos de Carretas between the major tributary arroyos.

Between the Ojo Agua Blanca ranch house and the old Peñuelas adobes there are eleven ruins in less than six miles along the Arroyo Peñuelas. These ruins are small, grass covered and in general untouched. The artifacts are typically Chihuahuan.

Eight miles east of the Peñuelas and three miles west of the Agua Zarca, the Arroyo de los Alisos debouches from the Sierra Peña Blanca, a ramification of the Sierra San Pedro. Along this arroyo are numerous ruins, similar in every respect to those of the Arroyo Peñuelas. The largest mounds noted were at the mountain edge where the wet weather road crosses the arroyo, on the right bank where the telegraph road (here only a dry weather road) crosses, and on the left bank about a mile above the confluence with the Carretas.

Arroyo de los Alisos A. (27)—

On the right bank terrace of the arroyo, about 170 yards west of a wooden gate in an east-west fence and a trifle south of the wet weather Ojitos-Peñuelas road. The ruins consist of two large and two small grass covered and untouched mounds. Only Chihuahuan ware was found here.

Arroyo de los Alisos (28)—

About three-quarters of a mile by road west of the Arroyo de los Alisos crossing, where the wet weather road ascends from the river terrace across a foothill spur. Two mounds are on the south side and one mound is on the north side of the road. This site is grass covered and undug. The potsherds are dominantly Chihuahuan, with two shards of Mimbres ware and one Little Colorado piece.

The Arroyo Agua Zarca heads in a *ciénega* just across a low ridge from the San Pedro river, and flows into the Carretas plains a short distance above Los Ojitos. This small arroyo was once densely settled, as is shown by the nine ruins in a five mile stretch between the *ciénega* area and a point three miles above Los Ojitos. At present the arroyo has cut a channel five to ten feet deep back nearly to the Ojo de Agua Zarca, a short distance below the *ciénega*; but previous to the period of the channel trenching all the land of this little valley below the springs could have been irrigated with ease. This arroyo valley served as the natural outlet for the Upper San Pedro, since the Boquilla Canyon of the San Pedro above Casa de Janos is quite difficult to traverse. Two of the sites on the Agua Zarca indicate that enemies as well as friends made use of the passage way. On a foothill spur just west of the Ojo de Agua Zarca is a large mound surrounded by a circular rock wall, sixty yards in diameter. The pottery types of this ruin are the same as those of the valley below. Something over half a mile below the fenced-in Ojo de

Agua Zarca is a series of compounds that extend 300 yards completely across the valley from foothill to mesa spur. The arroyo is now bifurcated and is cutting into the ruins at both ends. The compounds are of the closed rectangular type, with the general outlines well preserved. The western end of the series is a large compact mound. Potsherds exposed by the arroyo cut were all Chihuahuan, including quite a few Huérigos pieces. Many metates and manos were present. [The University of New Mexico field party of 1936 made stratigraphic trenches at this site.]

Arroyo Agua Zarca (26)—

On the right bank of the arroyo, about three and a half miles above Los Ojitos, is a compound *montezuma* about sixty yards square. It is grass covered and undug. Two pieces of scoop metates and some shards were the only surface artifacts. Across the arroyo, 250 yards, is a very small mound. Between the ruins is an abundance of bottom land for local aboriginal needs. The shards from these ruins were pure Chihuahuan.

Several groups of mounds are situated along the margins of the *ciénega* area just south and west of Los Ojitos. There formerly were more mounds at Ojitos⁵ but a large earthen dam west of Los Ojitos ranch house was constructed some years ago from the adobe of a number of *montezumas*. Potsherds can readily be found in the walls of the dam. On top of the Cerro de los Ojitos, a conical hill of lava some 250 feet high immediately east of the springs, is a circular wall of stone. No artifacts were found on this fortified hill.

After an archaeological hiatus in the middle portion of the Carretas, the series of springs between Salta de Ojo and Ojo Caliente renew the water supply to an extent sufficient for aboriginal needs, and a few ruins exist in the Lower Carretas area. No mounds were located in this area, but a few decorated potsherds were collected near the Ojo Caliente and at La Palotada. A decorated *olla* was reported found in some sand dunes across the river and several miles to the west of Rancho Ojo Caliente.

Hachita-Los Moscos:

In exceptionally rainy years the flood waters of the Upper Playas and Hachita valleys unite east of Hatchet Gap and cross the international boundary near Cabin Wells and Los Moscos. Belonging to this drainage area are the eastern slopes of the Sierra del Perro and Álamo Hueco mountains, as well as the country south of the Cedar Grove mountains draining into Mexico between the Sierra Rica and Sierra Carrizalillo. This, with the exception of the higher mountain slopes and a few springs, is a dry area vegetated mainly with grass and creosote bush. No ruins are known from the main basin of the drainage area, nor from the eastern slopes. Only the western mountains maintain springs that would have been able to supply an aboriginal population.

5. Bandelier (1892), pp. 531-536, mentions having seen only two ruins between Bavispe and Janos. These were near El Vado del Lagarto and Los Ojitos.

Several pure Mimbres sites are reported for the eastern slopes of the Hachita mountains, especially near Old Hachita. In the Big Hatchet, Álamo Hueco and Dog mountains there are said to be a number of cliff and cave dwellings. Six caves were visited back of Pierce's Well near Emory Peak in the Álamo Huecos but only bat guano, mescal pits, mortar holes and Apache pictographs were found. About one mile east of Sycamore Well is a small cave, partially walled with caliche-cemented rock fragments, but only a few shards of coarse red and corrugated ware were found. A mound site is reported near the base of Hat mountain, several miles east of Sycamore Well and north of the Corner Ranch.

Dog Springs (7)—

Dog Springs, at the southeast foot of the Dog mountains and a short distance within the United States, has been an area of occupancy since Mimbres times as this site shows potsherds of Mimbres and Chihuahua prehistoric cultures, large crude arrowheads of the nomadic type affected by the Apaches, and the marks of American soldiers and cattlemen. At present the site is being denuded on the upper slopes, eroded in the bottoms, and generally trampled by cattle. A growth of mesquite covers much of the potsherd area, which is to the south and east of the springs.

Sycamore Well (8)—

This site is situated on the northeast (left bank) side of a creek that rises in the southern Álamo Huecos and is now rapidly trenching an old gravel fill. It is an intramontane, non-defensive agricultural site. Although thickly vegetated with mesquite and somewhat eroded, a considerable number of metates, manos, and mortars were noted, as well as several large mounds and *cimientos*. Chihuahua wares dominate, but El Paso, Middle Gila, and Little Colorado were proportionately well represented.

Palomas-Mimbres:

The broad Florida plains of Luna county, New Mexico, are drained by Palomas Creek and the Mimbres river, which pass respectively southwest and northeast of the Florida mountains. Occasionally the Mimbres waters cross the border near Arena, headed approximately in the direction of Laguna Tildio. The Arroyo Palomas feeds the Ojos de Palomas and Laguna Palomas. Among these streams and near the arroyos that drain the marginal mountains are located practically all the ruins of this area. North of the Cedar Grove and Tres Hermanas mountains is a practically pure Mimbres culture, but presumably later peoples occupied several of the Mimbres sites.⁶ Chihuahua culture advanced a spear head of colonization north into this area, and had numerous contacts with peoples of even the Mogollon country.

6. On the basis of stratigraphic investigations at numerous sites, Mr. and Mrs. H. S. Cosgrove, *The Swarts Ruin*, (Cambridge 1932), 104-113, believe that the Mimbres culture flourished during Middle Pueblo III (950-1150 A.D.); and that sites containing considerable Middle Gila Polychrome and Chihuahua polychromes represent later settlements over abandoned Mimbres villages.

Carrizalillo Springs (11)—

Although not within the Palomas drainage, this site on a rocky bench east of Carrizalillo Springs at the southeastern foot of the Cedar Grove mountains should be mentioned here because of its pure Mimbres cultural composition. It occupies a much denuded area of perhaps ten acres, sparsely vegetated with creosote bush, and having rock walls, metates, manos and shards. It has been frequently dug into, and is the most southern Mimbres site to be even partially excavated.

76 Draw (78)—

The most northern site of dominant Chihuahua culture is that on the east side of Arroyo Palomas (also known as 76 Draw) in the sand dunes that flank an alkali flat twenty miles south of Deming, and a short distance west of the Dorothy Mines road. Mesquite growth and sand dunes have obscured much of the site, but a clear preponderance of Chihuahua wares mark it as a northern colony, separated by more than thirty miles from the nearest Chihuahua site to the south. Mimbres, El Paso and Middle Gila wares are present as would be expected from a location on an obvious trade route.

Willow Springs (14)—

Where Willow Springs Draw debouches into the plains near Gym Peak in the south Florida mountains, about nineteen miles by road north of Columbus, is a Mimbres site. An area of perhaps thirty acres presents faint traces of *cimientos*, but the surface has been considerably aggraded by sheet wash from the mountains. Scattered among the yucca, mesquite and creosote bush vegetation were a few metates and considerable pottery. Little Colorado and El Paso wares were feebly represented.

According to local reports, across the Carrizalillo draw, a half mile from site 11, there is a small site with mixed Mimbres and Chihuahua wares. There has also been reported a large site of Mimbres and Chihuahuan wares, with some Little Colorado, El Paso and Chupadero, in the sand hills twelve miles northwest of Malpais station. Customs Collector Jack Breen of Columbus obtained scoop metates, manos, frog and owl figurines of gray igneous stone, and a dove effigy from a Chihuahua *olla* at the site.

Casas Grandes:

The Casas Grandes drainage basin can be divided conveniently into eight parts for a discussion of the distribution of archaeological sites. These divisions will be considered in order from Laguna Guzmán to the headwaters. The final reservoir of the basin is the Laguna Guzmán. This lake is periodically restocked with fish, after the rare complete dessications, by movement down stream with floodwaters. Fish from the lake must have been an important item in the economy of the adjacent aborigines for along the western bluffs were found numerous artifacts including stone fishing sinkers. There seem to have been no settlements excepting temporary habitations probably occupied periodically during the fishing season, i.e., when the lake held enough water to support fish life. There are said to be *montezumas* at the Ojo Caliente, a number of miles west of the

lake; and potsherds and stone artifacts are reported from the sand dune area along the southeastern shores.

Las Viboras (47)—

A large area covered with artifacts is situated east of the Casas Grandes delta and northwest of the Cerro de las Viboras, noted for its rattlesnakes. The road to the site leads three miles from the main Casas Grandes river crossing at Las Viboras across the alluvial delta land and past two windmills to a third windmill a short distance within a *mesquital* (mesquite thicket). About half a mile southeast of the last *papalote* is a potsherd, spall, mano, metate and arrowhead site, principally to the southwest of some mesquite-topped sand dunes. No mounds or *cimientos* were located. The site is singular for its dominating percentages of Chupadero and El Paso wares, and the presence of the comparatively rare (at this distance west) Three Rivers Red-on-terra cotta. Another site is reported to be near Álamos Altos, about three miles to the south.

Along the Lower Casas Grandes river, from Las Viboras to Corte Piedra there were located no sites of any description. Potsherds, however, are reported from the Ojos Altos, a few miles east from Tres Papalotes on the Vado Fusiles-Ascensión road. Corte Piedra, at the lower end of the Boca Grande about fifteen miles west of the Pershing Highway, has traces of stone *cimientos* and also a few shards, manos and spalls. The location is an excellent one for agriculture or to defend the Boca Grande, but the meagre artifacts and the lack of fortifications indicate that it was a minor almost marginal settlement. The potsherds partake of the percentile distribution obtaining at Las Viboras (47), which would point to this site as a border location between Chupadero and Chihuahua cultures. Judging from finds in the Ascensión and El Paso areas, a considerable amount of exchange took place between these two peoples; and one of the logical trade routes would lead from the Río Grande to Ascensión via Las Viboras and the Boca Grande.

The Casas Grandes river between El Espía and Boca Grande has cut a steep banked channel in the silt. Should such a condition have prevailed in the days of the Chihuahua culture it would explain the lack of archaeologic sites in this stretch, for agriculture would hardly have been feasible in this arid area without irrigation and that would have been impossible. On the river plain just below El Espía ranch house and on down the west side for seven miles there are scattered spalls and shards. No painted ware was noted among the shards collected at random over this stretch.

On the right bank of the river, some three miles upstream and across the river from El Espía, is the Álamos Altos ranch at the foot of the Álamos hills. All along the river plain from Álamos Altos upstream to the upper terrace east of Tásate ranch are small potsherd, spall and mano sites. One of the largest is in some sand dunes east of the Álamos Altos-Ascensión road, about four miles downstream from El Tásate. The shards were dominantly Chihuahuan.

El Tásate (49)—

On the points of the gravelly valley-fill spurs that jut into the river plain about ten miles south of La Ascensión are a series of small ruins nearly obliterated on the surface. These ruins extend along the chamiso and mesquite vegetated east bank river

terrace for about two miles fronting El Tásate ranch. They are composed of small one room houses, associated in groups of two, three or four. The terrace margin road to La Ascensión cuts across many of the sites. These ruins have been pouthotted extensively, revealing adobe walls averaging six inches in thickness. A few metates and manos, and many shards have been thrown out of the excavations. The shards are mainly Chihuahuan, with Middle Gila, El Paso and Chupadero wares represented.

Between El Tásate and Rancho El Padre, three and a half miles northeast of La Ascensión, the silt-floored plain has been cut by several arms of the Casas Grandes river and by arroyos that carry off flood waters from the Laguna Federico and La Bajada flats. Cottonwoods, willows and mesquites border the watercourses and combine to give the semblance of a heavily wooded area. There are reported to be a number of mounds scattered throughout this area. One much-excavated *montezuma*, seventy yards square, was noted about half way between Rancho El Padre and El Tásate. It was composed of several adobe-walled, closely agglomerated rooms. Many shards of Chihuahuan wares covered the ground.

Several much excavated ruins are located near small arroyos or sloughs that cut the Ascensión plain northeast of La Ascensión. On Rancho Huérigos, about two miles northeast of La Ascensión, a large *montezuma* yielded whole pieces of Casas Grandes Polychrome, Villa Ahumada Polychrome and Chupadero Black-on-white pieces.

The most thickly settled portion of the Ascensión basin, in Chihuahua times, was upon the right bank flood plain of the Casas Grandes river between La Ascensión and the gorge at El Esparceño. Many large mounds dot this twelve mile stretch, especially in the first four miles below the *malpais* hills of El Esparceño. Probably a quarter of the Chihuahuan ware on display in American and French museums hails originally from these mounds. As a result of such extensive and long continued excavations, it was possible to make exceptionally large potsherd collections in this district.

La Cruz (54)—

This is a much dug compound ruin seventy yards square, immediately back of the La Cruz ranch house, and about ten miles from La Ascensión on the river road to El Esparceño. The site occupies an excellent location upon the lower slope of a small hill at the very edge of the flood plain. Many stone artifacts and quantities of potsherds cover the ground. The shards are over ninety percent Chihuahuan wares, including a strong representation of Huérigos Polychrome. The trade wares include Chupadero, El Paso, Mimbres and Middle Gila.

Montezuma Alta (75)—

A little over two miles upstream from La Cruz, within the forks of the alternative routes from El Esparceño to La Ascensión, is an extensive ruin composed of many low individual mounds strewn over the plain for 200 yards north-south and over eighty yards east-west. This site is almost paved with *tepalcates* (potsherds), and is strewn with many manos and broken metates. The pottery complex resembles that of La Cruz, with the addition of a single shard of Little Colorado Black-on-red ware.

The four mile gorge of the Río Casas Grandes above El Esparceño contains but one site—a small potsherd and mano area

about two miles above El Esparceño, on both sides of the road. Singularly enough, none of the hills that command this defile appears to have been fortified. Evidently the Janos-Ascensión country constituted the portion of the Chihuahua culture area farthest removed from border enemies.

About two miles above the gorge entrance is located the Hacienda El Marquesote, on the left side of the river about five miles from Janos. Opposite this hacienda, in a thick *mesquital* on the right bank, is a large *montezuma* locally termed El Joaquineño. A mile south of the *hacienda*, on the left side of the river and bisected by a fence line, is another much excavated mound about eighty yards long and forty yards wide. It is covered with an open mesquite growth. Both of these sites command an abundance of good agricultural land, and plenty of water.

Janos is situated on the southeastern slopes of some barren lava hills that come down almost to the edge of the Río San Pedro on whose margins the town was founded. A few miles below Janos, the Río San Pedro joins the Casas Grandes. In the fertile inter-fluvial area are scattered a number of *montezumas*. All of the ruins have been excavated extensively. This general Janos area ranks with the Ascensión region in its production of museum pieces. Included in the Janos area is a string of ruins along both banks of the Casas Grandes river from San Antonio to La Laborcita.

Janos (55)—

This site, about a mile and a half northeast of Janos on the right bank flood plain of the San Pedro, is typical of all in the Janos area. It is about fifty yards square, composed of closely agglomerated rooms with walls of gray caliche adobe. From it have been excavated, in addition to the various Chihuahua wares, several Middle Gila Polychrome bowls, a "killed" Mimbres Black-on-white bowl, several Chupadero pieces, and a unique figurine of the Villa Ahumada Polychrome representing an "indio borrego" or mountain sheep with human features. All the Chihuahua pottery types were represented among the potsherds collected here, and also Middle Gila, El Paso and Chupadero wares.

Several small mounds are scattered along the edge of the San Pedro river flood plain over the nineteen mile stretch between Janos and Rancho Punta de Agua, and also on the eastern tributaries that descend from the Sierra Carcay. The San Pedro river opens out into the plains about a mile above the Rancho Punta de Agua. In the intramontane valley between this point and La Boquilla, five miles upstream, are situated the fertile, well watered and secluded *ejidos* belonging to the agrarian colony now in possession of the Casa de Janos. The valley has a small mound one mile below the Casa de Janos school, another much dug one on the upper river terrace edge at the south end of town, and six small mounds on the upper river terrace edge along the left bank about two miles upstream from the Casa de Janos school. All of these mounds are small, of normal construction, and yield potsherds typical of the Janos area. There is no evident reason for the fame of the Casa de Janos at the expense of many more noteworthy sites in the vicinity.⁷

7. Guillemín Tarayre (1869) and Bandelier (1892) seemingly heard these sites mentioned and advertised the Casa de Janos undeservedly in their publications. Since their times it has been mentioned repeatedly, upon no good authority, and thus error accumulated.

La Boquilla de San Pedro has served effectively, ever since aboriginal days, to shunt traffic from the Upper San Pedro down the Arroyo Agua Zarca to attain the open plains. The crags of La Boquilla were reported to contain caves with "hieroglyphics," but these were not investigated. Immediately above La Boquilla the valley is dotted with *montezumas* which continue to the headwaters, according to various reports. Only the first ten miles above La Boquilla, as far as La Ciénega, were investigated during this reconnaissance. In this stretch sixteen mounds or groups of mounds were noted, distributed indifferently on either terrace of the river. The structure varied from single rooms to elaborate compounds, but all were constructed with adobe and occasional stones. The potsherds noted at the various sites were nearly all of Chihuahua wares. Only a few pieces of Little Colorado and Middle Gila were found in this valley.

La Ciénega (53)—

The largest of the ruins in this section of the Río San Pedro is that on the right back terrace about a mile below the Rancho La Ciénega. A series of compounds and single mounds extends for nearly 200 yards parallel to the steep banks of the river terrace. One large compound mound is fully sixteen feet high. Stones were freely used to reinforce a number of the walls, and their protrusions in *cimientos* outline many of the rooms. The location of this site on the high river terrace, with water and farm lands in the river plains below, is typical of the entire valley. Metates and manos were numerous over the grass covered surface of the ruins. The potsherds found at this ruin were of the Chihuahuan complex, with the exception of two Little Colorado shards.

The San Pedro served as a corridor for movement from the Llanos de Carretas to the Piedras Verdes country via the Arroyo de la Tinaja, and to the Bavispe via the Arroyo de Dos Cabezas. Minor arroyos, extending laterally from the main pathway along the San Pedro, served as distributaries. Practically all of the tributary arroyos above La Boquilla possess one or more ruins and have *trincheras* on the upper slopes. In the upper section of the San Pedro, extending for perhaps twelve miles above La Ciénega, the valley is quite narrow and pines, oaks and junipers extend down the mountain slopes to the edge of the river. A number of mounds, including one quite large group on the left bank, occupy the focal area around San Pedro de Arriba where the Trans-Sierra Madre trail from Bacerac via the Dos Cabezas Pass crosses the Río San Pedro and continues via Las Chimeneas Pass into the Tinaja and Piedras Verdes country. The western pass leading into the Bacerac-Bavispe drainage has been fortified by three rock walls about 150 feet long and averaging five feet high. All the pottery reported from this section is pure Chihuahuan in type.⁸

Above La Boquilla de Corralitos are the broad plains of the Casas Grandes valley proper. In this valley, at Casas Grandes, are the largest ruins in Chihuahua. Their size has been so striking that the entire culture has often been named after this one ruin. In addition to the "Big Houses," however, there are many notable ruins within this valley. At the lower end, around

8. Blackiston, (1908) 282-290, is the only person so far to write concerning the ruins of the Upper San Pedro. They are locally well known and formerly could be visited by wagon via the Agua Zarca-San Pedro or the Tinaja-Las Chimeneas Pass.

Corralitos, are several mounds that have been extensively pot-hunted. Carey (1931, pp. 331-333) trenched the refuse heap of a mound about two miles southwest of the hacienda house, and established a tentative sequence of wares.

Corralitos (57)—

On the right bank terrace of the Casas Grandes river, less than four miles south of the Hacienda Corralitos, the road passes just west of a small mound that had been so extensively excavated that a good collection of potsherds was made. This mound was typical in structure, in position with reference to the river, and in potsherds, of the smaller ruins of the Corralitos area. The walls were constructed of pure adobe, and averaged about six inches in thickness. Several rooms were closely associated, and the compound element was lacking. Only El Paso Polychrome shards were present, in addition to the various Chihuahua wares. A few scoop metates and manos were strewn over the surface, which was grass covered with a thin sprinkling of mesquite.

A mile and a half south of the Hacienda Corralitos are the remains of the *fundición* that formerly smelted ores from lead-silver-gold mines in the mountains to the east. This *fundición* is situated at the base of a small conical lava hill which overlooks the entire northern end of the valley. Around the top are a series of rock walls or *trincheras*. No potsherds were found on the *cerro*, but such a result was to be expected as these *cerros de trincheras* in Northwestern Chihuahua were apparently used only as watch towers and as citadels in cases of extreme need.

About two miles west of the Pershing Highway and the Corralitos railroad station is a large basalt hill, capped on its upper third by long lines of *trincheras* which are best developed along the southeastern side. Only small arrowheads and spalls of flint and obsidian were found on this *cerro de trincheras*, which has been described rather fancifully by Schwatka (1893, pp. 61-64). From the top of this hill there can be seen quite distinctly the entire Casas Grandes valley and the *atlaya* or watchtower on top of the Cerro de Montezuma. There seems to be a chain of these fortified hilltops by which a smoke message or similar signal could have been conveyed from the Upper San Pedro valley to every portion of the once thickly populated valley of Casas Grandes.

Several of the fortified hills of this valley are primarily pass control sites. El Cerro Prieto de la Laguna Prieta is an isolated basalt hill that commands the Puerto de la Laguna Prieta leading into the lower Galeana valley and points eastward. There is a single crude circle of rock on its flat top.

Commanding the much traversed Boquilla de San Diego, between the San Miguel (San Diego) and Casas Grandes valleys, is the rhyolitic mass of the Cerro de la Boquilla, on the southeast side of the water gap. The entire top of this mountain is covered with *trincheras*, with several stone houses on the higher southern peak. A few shards of Casas Grandes Polychrome were found near the stone houses.

The most famous of all the fortified *cerros* is the Cerro de Montezuma which lifts its barren peak to an elevation of 1700 feet above the Casas Grandes, less than five miles distant by airline. Trails lead up from the Piedras Verdes and Casas Grandes valleys to a basalt mesa or bench at the north end of the main ridge. From the fortified *montezuma* on this bench a single trail winds up the western side to the top, some 700 feet

above the *montezuma*. Three concentric rock walls enclose the central eminence, which is crowned by the ruin of a circular tower, built of stones laid in adobe mud. The tower or *corral* is about twenty yards in diameter, with walls averaging six feet in width and five to twelve feet in height. There are traces of a walled-up square doorway leading through the tower wall on the trail side. A square edifice of slab stone laid in adobe, quartered by partition walls, is still represented in the center of the tower by a few foundations. No potsherds were found in or near this fortification. About fifty yards west of the tower an artificially enlarged blowhole goes down many yards into the mountain. There is no sign of a road ever having led up to this *atalaya*, several writers to the contrary notwithstanding.

El Pueblito del Cerro de Montezuma (19)—

Of greater interest than the *atalaya* is the fortified village on the basalt bench at the north end of the ridge. This bench is the surface of an old basaltic flow which is surrounded on three sides by cliffs of columnar basalt. The Piedras Verdes-Tinaja trail from the west, and the Casas Grandes trail from the northeast have worn deep notches into the edge of the bench. The top of the bench is about 200 yards wide by 800 yards long north-south. It is scantily vegetated with grass, agave, oak and juniper. Centrally located is a large compound mound of mixed adobe and stone, about sixty yards long and forty yards wide. It has been excavated enough to show that the main mound rises at least fifteen feet above the shelf and probably was composed of a two or three story adobe structure. The walls along the east and north were built of adobe, and the remainder were built of course laid rock slabs. About forty crudely built stone houses cover the northern end of the bench. Several small stone "guard houses" are along the shelf edge. Along the eastern side is a carefully laid stone wall, eighty-five yards long, five feet wide, and four to twelve feet high, opposite the main mound. Its purpose is problematic as this side is very steep and naturally protected; and the wall itself is unsupported. The difference in masonry technique may indicate that two peoples occupied this mesa at different periods. Many broken metates and potsherds are scattered over the entire built-over surface. There are some walled-in rock bottomed hollows which may have served as catchment basins for rain water. The shards represented here were all Chihuahuan, with the exception of one El Paso Polychrome piece. This site probably represents not an emergency wartime settlement, but a permanent central station for coordinating communication between the Casas Grandes and Piedras Verdes valleys, and for maintaining the watch tower service on the *cerro* top. Ruins of agricultural terraces on the lower western flanks of the mountain indicate a normal settlement of the site.⁹

There are numerous mounds along the Arroyo Ramos, which rises between the Sierra Pajarito and Sierra Carcay, flows past Ramos, and disappears in a *mesquital* a few miles southwest of Corralitos. The largest of these mounds are along the left bank of the arroyo and along the sierra margins of the Upper Ramos basin.

9. Many writers have described the Cerro de Montezuma and its village ruin. Chief among these are García Conde (1857), 272; Bandelier (1892), 563-569; Lumholtz (1902), 89-91; Blackiston (1906) and Noguera (1926).

Ramos (52)—

Beginning about 600 yards below the Ramos ranch house, on the left bank of the arroyo, there is a group of three medium sized and much dug mounds within heavy *mesquital*. Across the arroyo and about a half mile farther downstream is a quite large *montezuma*. These four mounds are all on the upper river terrace, not far removed from the permanent flow of water provided by the *ciénega* springs at Ramos. The walls are of plastered adobe, averaging six to eight inches in thickness. The potsherds from the individual mounds agreed perfectly in proportions of pottery types, only Chihuahuan wares being represented. Considering its pass position between the Casas Grandes and San Pedro-Carretas country, it is rather surprising that no trade wares were found here.

A few mounds are located along the east side of the Casas Grandes river, but the greatest concentration of ruins is upon the left bank flood plain from San José de Arriba to Barranco Colorado. The Casas Grandes valley and flood plain opens out about five miles below Casas Grandes to form a right angled triangle, twelve miles along the river and having a base extending about seven miles west from the river at Barranco Colorado. Within this area of about forty square miles there are more than thirty large mounds or group of mounds dotted over the river plain at distances of from a half to six or seven miles from the river. The greater portion of this area is now occupied by the agrarian Colonia Enríquez, many of whose homes are built upon or from the adobe ruins of the Chihuahua culture. The Mormon lands occupy the southern tip of the "metropolitan" mound area, and the southeastern margin is covered with a dense *mesquital*. Away from the Colonia Enríquez area, towards Ramos and Corralitos, there are practically no *montezumas* in a thickly bushed stretch that is being aggraded with wash on the upper slopes and dissected with small gullies over the river plain.

Colonia Enríquez (51)—

Twenty-two mounds dot the grassy *llano* in a five mile stretch northwest-southeast across the Colonia Enríquez *ejidos*. The dry weather Janos-Casas Grandes road runs directly through this zone. The zone of great mound concentration seems to run along the margin of river bottom *mesquital* and grassy *llano*. This may mark the limits of former annual flooding. The soil is a rich silt which could have been irrigated formerly from a less deeply grooved river by construction of brush diversion weirs and a network of canals. No trace, however, now remains of such a presumptive irrigation system over this alluvial plain. The mounds vary from six to sixteen feet in height, and average forty yards square. They are irregularly disposed and give no hint of planned settlement pattern. Distances of 150 to 1400 yards separate the individual mounds. Probably each mound represents the habitation of a family, or group of related families, which cultivated the surrounding land. The smaller mounds consist of one to three or four rooms closely agglomerated. The larger mounds tend to be compound, but whether so planned or formed by accretion can only be determined by careful excavation. These mounds have been destructively pothunted for several centuries by Apaches, Mexicans, and Americans. The room walls exposed are oriented, are of pure adobe plastered on the interior, and vary from six to eight inches in width. Most of the houses were probably one and two story edifices. Hundreds of broken

scoop metates, manos, hammerstones, lava and sandstone bowls, and three-quarter grooved axes are scattered over the mounds. The whole metates seem to have been salvaged and put into use by the modern Mexicans. Potsherds from the different mounds agreed in types represented. All the Chihuahua wares are well represented. Middle Gila and El Paso polychromes are the common trade wares.

Colonia Dublán (78)—

On the Mormon lands, opposite Colonia Dublán, there are many scattered mounds. Three-quarters of a mile west of the river and one hundred yards south of the Colonia Dublán-Ramos road is a large *montezuma* surrounded by alfalfa fields, bisected by a north-south fence, and topped by an abandoned adobe house. It conforms in every respect with the *montezumas* of Colonia Enríquez. The potsherd distribution is the same, with the exception of trade ware which is lacking.

Only a few mounds are situated along the east margin of the Casas Grandes river between La Boquilla and Corralitos. These occur mainly in the already mentioned group between La Casa de Tachín and the Hacienda Corralitos, and along an eight mile stretch from Buena Fé (four miles south of Nuevo Casas Grandes) through the Colonia Madero. The southern mounds are sparsely distributed along the terrace margin of the Casas Grandes flood plain, which is here quite narrow. The largest of these ruins is on the tip of a gravel ridge which forms the left bank of the Arroyo Seco, almost at its mouth. The site is 150 yards east-west by eighty yards north-south, and lies about 150 yards west of the railroad. It is mesquite covered, crossed by an *acequia*, and has been most destructively dug over. Many stone artifacts and much broken pottery are on the surface. The house structures are typical.

Both the Arroyo de la Mojonera and the Arroyo Seco have numerous ruins along their banks. The Arroyo Seco heads back in the Sierra San Joaquín, and after breaking through a narrow rocky gorge flows some seventeen miles through a valley 400 to 800 yards wide that it has cut in an old valley fill on agglomerate. The valley floor is from twenty to eighty feet below the mesa level, and upon the river plain a recent trench has been imposed. Most of the *montezumas* are situated upon the terrace brink, although five mounds were noted on the valley floor above La Boquilla, a rocky constriction in the arroyo about nine miles above its mouth.

Arroyo Seco (50)—

South of the arroyo, about two-thirds of a mile southeast of Rancho Segundo (three miles above La Boquilla) is a large compound ruin on the top of a ridge which forms the divide between two left bank tributaries. A compound eighty yards long and thirty yards wide is outlined by the best developed stone *cimientos* seen in Chihuahua. The construction of the houses is of adobe and stone. The site possesses excellent defense possibilities, but no fortifications were noted. At short distances are several isolated small rooms. The site is grass covered, somewhat pothunted, and is littered with potsherds and broken metates. Only Chihuahuan and a few Middle Gila potsherds were collected here. Across the arroyo, on a narrow spur, is another large ruin of similar construction but containing three compounds.

Next to the Colonia Enríquez area, in point of density of

settlement, comes the left bank stretch between Casas Grandes and La Boquilla de San Diego. The famed Casas Grandes occupy the southern outskirts of the Mexican town. Upstream from these ruins is a series of *montezumas*, spaced at intervals of a hundred yards to a little more than a mile apart over a distance of ten miles. Nearly twenty sites were examined in this area. The smaller ruins almost invariably are located on the upper terrace spurs. The larger sites of Casas Grandes, Rancho Blanco and Llano Largo are situated where the terrace slope merges with the river plain. A basalt mesa juts out just south of Rancho Las Palomas, three miles upstream from the Casas Grandes. On the mesa top are *trincheras*, metates, manos and some potsherds. No other fortified site was noted below La Boquilla, with the possible exception of Malpais (25), described later. Several small sites, with associated agricultural terraces, are located up some of the arroyos that descend from the Cerro de Montezuma.

Casas Grandes (15)—

This is the largest and best known site in Chihuahua. It has been visited and described repeatedly ever since 1565 when it was already in forgotten ruins. Obregón, García-Conde, Bartlett and Bandelier have supplied successive pictures of its appearance which indicate no great changes in its condition excepting for the removal of all timber, the wanton pulling down of some of the higher walls, and the building of squatter houses along the eastern portion. The present custodian (as of 1931) of this national monument (Señor Galaz) has strengthened some of the weaker portions with cement and masonry since 1928. The largest ruins are situated seven-tenths of a mile south of the Presidencia in Casas Grandes. They occupy a portion of the river plain and extend back onto the gravelly terrace which is the lower dissected portion of a pediment slope, thinly covered with soil, that descends from the Cerro de Montezuma. The river is distant about a half mile from the main mounds across a flood plain of fertile alluvium. Some seventeen or eighteen mounds compose the ruins spread over an area about 250 yards square. There seems to have been no regularity of village plan. The largest mounds are closely grouped along the margin of the river plain. These ruins differ from the others of Northwestern Chihuahua only in gross size, state of preservation, and in the use of large blocks of puddled adobe (possibly built up in temporary forms, according to the evidence of seams in the wall structure) to make extremely thick walls. The walls vary in thickness from sixteen inches to more than four feet. Some of the larger walls, still standing, could accommodate structures of three stories height. It is therefore probable that the original height of the largest buildings may have been four or five stories. The largest mound is at present about twenty feet high. Windows and doorways are still discernible in some of the standing walls. To the west of the main group are several small steep sided conical mounds having an abundance of stones in their composition. Speculations concerning the detailed structure and uses of the various buildings that make up the Casas Grandes are useless until some excavation has been done.

An old *acequia* can be traced for several miles across the slopes from the Ojo de Montezuma, at the foot of the Cerro del Ojo, southeastward to the Casas Grandes ruins. This spring now waters the plaza of Mexican Casas Grandes. The household water

supply canal is the only one in the area that can be identified easily. There are faint suggestions of ancient *acequias* that watered the fields of the river plain between Llano Largo and the old mission north of Casas Grandes. Obregón's mention of large wide canals excludes any suspicion that irrigation canals were a Spanish innovation.

At present the surface of the Casas Grandes provides poor pickings, excepting after a heavy rain, since the local Mexican children glean the site almost daily. No stone artifacts of any sort were noted, but a large collection of potsherds was made easily. The shards represent all the Chihuahuan wares, incised and indented redware being especially prevalent. Middle Gila and El Paso were the only trade wares. Lumholtz (p. 88), Bandelier (p. 553), and Bartlett (plate p. 362) have perpetuated the mistaken idea that the Mexican type of legged metate was made and used at Casas Grandes. According to local reports and personal observations, no legged metate has ever been found in connection with a Chihuahuan ruin. Probably modern Mexican metates, manufactured in the south and sold widely, gave rise to this bit of widely purveyed misinformation.

Rancho Blanco (23)—

The Rancho Blanco ruins are on a low bench, about fifteen feet above the river plain, just north of the Rancho Blanco ranch house and two and a half miles from Casas Grandes. The site covers an area 150 yards by fifty yards, and is composed of several much-dug compounds with a sparse mesquite vegetation. Several scoop metates, many manos and a lava bowl were noted here. The site had only Chihuahua shards.

Llano Largo (24)

This site is located on a low spur just above the river plain, in Colonia Llano Largo, about seven miles south of Casas Grandes. A Mexican farmer has utilized the foundations of an old ruin in constructing his house. Many metates, manos and shards cover this site, which provided Chupadero, El Paso, Middle Gila and Little Colorado shards in addition to the dominant Chihuahua complex.

Malpais (25)—

A large dispersed group of ruins occupies the *malpais* (lava) spur between Colonia Llano Largo and Colonia Anchondo. A large central compound is flanked by several smaller structures. The ruins along the south margin of the site are connected by a *malpais* stone wall. This site may have been a secondary defense against aggression downstream through La Boquilla de San Diego. The buildings were constructed of adobe and stone. This site was especially rich in stone artifacts worked from the local *malpais*. The Chihuahua wares were represented here, and one shard of Three Rivers Red-on-terra cotta and a shard of Middle Gila Polychrome constituted the trade ware.

Several drainage systems converge near the Hacienda San Diego, which is situated in the San Miguel river valley between that river and the Piedras Verdes. The Tinaja flows into the Piedras Verdes about three miles above San Diego. This basin is sporadically dotted with ruins, most of which are along the right bank of the lower Piedras Verdes and upon the lower slopes that descend from the Sierra de la Breña to the Piedras Verdes and San Miguel rivers. The largest sites are

situated in a four mile stretch southeast of Colonia Juárez, along the right bank terrace of the Río Piedras Verdes. This area (old Colonia Juárez—now occupied by Colonia Cuauhtemoc) has been much excavated, by Lumholtz for the American Museum of Natural History, and by Mormons and Mexicans since then. The ruins are compound structures, built of adobe. Nearly two dozen mounds are scattered along the Arroyo Alamitos, which enters the Piedras Verdes below Colonia Cuauhtemoc. South of the Arroyo Alamitos, and extending for an undetermined distance over the grassy plains, are many little ruins. These small ruins are usually close to *trincheras* across the shallow arroyos and washes that descend the slopes from the Sierra de la Breña. Back of the *trincheras* are small garden plots, the principal agricultural land of these "up-slope" people. The wanderings of the Río San Miguel within its sandy bed and its considerable depth below the tillable river plain has undoubtedly conditioned the archaeological poverty of the stretch between the San Miguel gorge, south of El Rucio, and Pearson (Mata Ortiz). Only three ruins were noted in this ten mile stretch. Just east of the Arroyo de la Tinaja mouth is a large *malpais* hill crowned with *trincheras*.

Lower Piedras Verdes (64)—

On the south edge of the Piedras Verdes river plain, a mile and a half from Hacienda San Diego on the road to Colonia Juárez, is a compound mound about sixty yards square. It has been pothunted extensively. A number of metates, manos and axes litter the grass vegetated surface. Potsherds collected here were pure Chihuahuan.

The Arroyo de la Tinaja heads in the Sierra de Carcay across a ridge from the Río San Pedro. Just to the north of the Tinaja are the headwaters of the Tapiécitas. These two streams meet about eight miles above the Piedras Verdes confluence. Their basins are open and grass covered in the lower stretches but commencing about ten miles above the junction the Tinaja and the Tapiécitas flow through steep walled canyons vegetated with oak, piñon and juniper. These valleys, especially that of the Tinaja, have served as corridors for communication between the western Sierra Madre country and the Casas Grandes-San Miguel region. This fact alone explains the unusually large number of ruins and the defensive items that characterize this area. Nearly forty sites were located on the Tapiécitas in a stretch of fourteen miles above its junction with the Tinaja. Most of these sites are small and low, and are situated on the terrace immediately back from and above the arroyo flood plain. An equal distance along the Tinaja only held about half the number of ruins but the proportion of large ones was higher. Several of the higher hills and peaks between the Tinaja and Tapiécitas are fortified, especially the Picacho de Torreon which has an elaborate series of *trincheras* on its western slopes.¹⁰

Upper Tapiécitas (62)—

Two miles above Hacienda Tapiécitas is a ruin on the left bank of the arroyo. It has been ploughed over repeatedly so that nothing could be determined relative to the house structure. The potsherd collection made here is notable for the crude execution

10. Schwatka (1892), 53-57, and Blackiston (1908), 282-286, have described the more outstanding ruins of this area.

of the Chihuahuan wares, and the great number of crudely incised and raked wares—reminiscent of shards from the Sonoran country to the west. Two Mimbres shards were found here, marking the extreme southwestern distribution of this trade ware.

Hacienda Tapiecitas (61)—

A huge site extends along the left bank of the arroyo for 500 yards below the hacienda buildings. There were at least six compounds and several individual structures in this site, which is the Casas Grandes' closest rival in the size of the walls exposed in the larger compounds. These walls were made of large puddled adobe blocks, similar to the fashion of construction for the Casas Grandes. The central compound had been at least three stories high. There was a singular paucity of shards here. Those obtained were all Chihuahuan.

Upper Tinaja (63)—

Six miles above the Tinaja-Tapiecitas junction a series of large compound mounds extend 300 yards along the left bank terrace of the Arroyo Tinaja. The site has been extensively pothunted. Many scoop metates, both whole and broken, litter the ground. The ruins are composed of adobe and stone. The potsherds here were all Chihuahuan, a condition typical of the Tinaja drainage sites.

Lower Tinaja A (20)—

This and the next site mentioned are typical of the many ruins which are situated along the banks of the Lower Tinaja. Tinaja A is three-quarters of a mile below the Casas Grandes-Colonia Juárez ford of the arroyo. It covers an area about a hundred yards square, on the left bank, and is composed of one large mound and several minor ruins. Many metates, manos and mauls. Near here was observed a beautifully squared and grooved block of lava, about twenty by twenty by thirty inches in size. It was evidently the beginning of a scoop metate of deep bin form. The potsherds are pure Chihuahuan.

Lower Tinaja B (21)—

This site is nearly two miles downstream from Tinaja A, on a right bank terrace promontory just within the Colonia Cuauhtemoc *ejidos*. It is composed of one large compact mound containing twenty rooms, and another little three room mound about a hundred yards to the northwest. The rooms have been excavated and used as temporary habitation by several Mexican families. The rooms average six feet by twelve feet, with plastered interiors, single doorways about sixteen inches wide, alcoves or niches, and adobe walls about a foot thick. Six burials were reported dug out from this mound. All were interred with *ollas* at their heads. The pottery is entirely Chihuahuan.

The Piedras Verdes, above Colonia Juárez, traverses the top of the Sierra Madre Plateau from which it descends through a deep gorge. The interbedded igneous flows that border the Piedras Verdes and its tributaries have weathered differentially to produce hundreds of caves and ledges, these usually being in rhyolitic tuff. The Chihuahuan peoples occupied many of these caves and rock shelters, within which they constructed dwellings of from one to forty rooms. Their agricultural land was in the arroyo bottoms and along the slopes across which they constructed hundreds of retaining walls. Where the valley bottoms

were large enough, settlements were made on benches and spurs above the high water level. In many localities, notably Cave Valley and Strawberry Valley, valley mounds and cliff houses are closely associated. There is no difference in artifacts between these two settlement forms. The logical conclusion is that population pressure or a desire for well sheltered habitation sent the cave dwellers to their abodes on the canyon sides. Cave dwellings are far less exposed to the rigorous climatic conditions of the mountain winters than are the valley sites. There cannot reasonably be postulated a retreat in the face of enemy attacks in order to explain the colonization of the Piedras Verdes area, for the cliff and cave dwellings here are not impregnable as are those of the Aros and Bavispe regions farther south and west. It should be kept in mind also, that a few acres of land in the well watered mountain country supported the Chihuahuan family just as well as a thousand acres in the plains could have done. The Indian farmer raised crops only for the normal needs of his family, and large acreages of agricultural land were not an essential in the economic life of his day.

The number of archaeologic sites in the Piedras Verdes country probably will not be known for years. Nearly every arroyo, large or small, had its valley bottom and cliff sides settlements. The best known ruins are those of Cave Valley (Lumholtz, 1892, pp. 60-83; Blackiston, 1905, pp. 355-361, and 1906, pp. 5-11; Hewett, 1908, pp. 73-75, and 1923, "Anahuac and Azatlan") and tributary arroyos. No attempt was made in the reconnaissance to discover any new cave dwellings, only those mounds and caves close to the principal roads and trails being visited. In a small arroyo that flows into Arch Flat from the southeast, eight miles down Rock Canyon (Arroyo el Ollo) from the top of the pass over the Sierra de la Breña, there is a fifteen room cliff dwelling, visible from the road. The rooms are one story and well preserved. Several mounds, similar to those of the basin country to the east, are in the valley bottom of this arroyo, which joins Strawberry Creek (Arroyo de la Fresa) less than a mile below Arch Flat. A number of mound and cave ruins are located in the latter arroyo, which flows into the Piedras Verdes near Cave Valley.

Cave Valley (60)—

Cave Valley has been publicized considerably, principally through the large Olla Cave on the west side of the valley, about seven miles below Colonia Pacheco. There are over forty cave dwellings and twelve mound groups in the immediate vicinity of Cave Valley. Most of the cave houses occupy the western cliffs of the valley. On the eastern side there were only a few inhabited caves, most of them having been used as burial grounds. There is an indubitable connection between the use of west facing caves as cemeteries and the customary burying of corpses facing towards the west. The Olla Cave, famed for a large mud, willow, and grass granary *olla* at its mouth, is not singular in this respect. Nearly every sizeable center of cave dwelling population in the mountain country had one or more similar *ollas*. Potsherds were collected at the largest valley mound, about one mile below the Olla Cave. This mound occupies a spur on the left bank of the river. It had been much excavated (Lumholtz and others) but a Gila type axe and a number of shards—all Chihuahuan—were collected. Occasional pottery fragments were noted in a number of the caves. Most of the potsherds were Casas Grandes Polychrome, redware, and blackware.

García (59)—

The number of ruins in the Piedras Verdes region decreases rapidly upstream above Cave Valley. No ruins of any description were located in the Pacheco-Corrales basin, but a number are reported for Hop Valley, and several were observed along Arroyo García. Within the Colonia García basin there are several stone and adobe mounds, principally along the northern end of the valley. One group of mounds extends for half a mile along the west bank of García creek, beginning at the northern outskirts of town where the Pacheco road enters the valley. The largest mound is surrounded by a rock wall. Numerous *manos* and *metates* were observed. The potsherds, though plentiful, were badly weathered and only a few decorated shards could be identified. All of these were of Chihuahuan wares. Northwest of García about a mile and a half is a group of stone houses, and two stone and adobe mounds. No potsherds were found near this group.

The Piedras Verdes takes its source in Meadow Valley, southeast of García. On the pine clad gravelly spurs that border the meadow along the southeast are several circular and oblong stone walls. These may represent much reduced ruins of a type more common in the Upper Bavispe country, just a few miles south across a low water divide.

The Río San Miguel above El Ancon del Rucio passes through an eighteen mile rocky gorge in descending from the Sierra Madre plateau. Within this canyon there are reported to be many caves, a number of which contain communal dwellings similar to those of the Piedras Verdes region. The upper waters of the San Miguel flow in many arroyos across the grassy Llano de Cristo above Hacienda San Miguel de Babícora. There are several adobe and stone ruins on the mesa spurs that extend into the valley, and along the arroyo margins. A small grass-clad mound with *cimientos* and a few shards was noted a mile and a half north of Hacienda San Miguel de Babícora, about fifty yards south of the road to San José. Several plowed-over single and compound mounds are on the left bank of the Río San Miguel, to the north of the road from San Miguel to Colonia Zaragoza.

San Miguel de Babícora (67)—

About a mile south of the Hacienda San Miguel is a compound mound on the rim of an agglomerate mesa spur. This mound is about sixty yards square, grass covered and much pot-hunted. Where revealed the walls are entirely of adobe. Only Chihuahuan ware shards were found at this site, as was true for the smaller sites of the region. The Casas Grandes Polychrome here was inferior in technique to that of the basin ruins to the north. This condition obtained throughout most of the Babícora-Upper San Miguel country.

Upper Bavispe:

The Bavispe river rises in Mound Valley (Valle de las Montezumas) where its most important headwater, the Gavilán, takes its source. Numerous other arroyos head in the Chuhichupa country and there unite to form the Upper Bavispe, which leaves the Sierra Madre via a nearly impassable box canyon said to be thirty miles long. Over this pine and grass clad "top of the mountain" country there are scattered many ruins of stone houses. These ruins usually appear

as weathered heaps of lava rock with a few pine trees growing out of the debris. Closer inspection reveals remnants of rubble walls, the outlines of single rooms arranged in clusters. These house groups are frequently surrounded by a parapet or protective wall. The associated potsherds are almost invariably much weathered. No painted ware was noted from any ruin of this type, which seemed to predominate in the country between Chuhichupa and García. Lumholtz (1902, pp. 44-45) describes similar ruins from points farther west. Several cliff dwellings similar to those of the Piedras Verdes have been reported for the Gavilán, Trout, Bonito, and other tributaries of the Bavispe. There is said to be a forty room cave dwelling some twenty odd miles west of Pacheco in one of these canyons. Most of the few sites in the Chuhichupa basin have been plowed over and eroded to such an extent that no reconstruction of room plan is possible. Potsherds are rare, and these seldom preserve any decoration.

San Juan de Dios (58)—

The Rancho San Juan de Dios is situated on the arroyo of that name, twenty-nine miles from García and twenty-two miles from Chuhichupa. Immediately northwest of the ranch house on a rocky pine covered spur are several mounds of dirt and stone. There are no traces of walls, but manos, scoop metates, and shards abound. Several large pine trees grow out of the mounds. Some of the trees are nearly a hundred feet high and two feet in diameter. The pottery is mainly plain yellowish ware, of a medium coarse paste. Redware, corrugated ware, blackware, and several indented rims link this site with the Chihuahua culture. Some crudely raked ware indicates influence from Sonora.

Mound Valley—

This valley deserves special mention because of a widespread misconception concerning it. Because of numerous mounds, perhaps 500 or a 1,000 spread over a grassy park and meadow area about a mile square, the Mexicans have named this the Valle de las Montezumas, or Mound Valley. Several travelers (Lumholtz, 1892, p. 100; and others) have left the impression that these were artificial mounds. A careful survey of the area yielded not a single artifact of human provenience. The origin of these mounds is problematic, but they may more plausibly be referred to burrowing animals than to man.

Aros:

Only a small portion of the Aros drainage was investigated during this reconnaissance.¹¹ The deep canyons of the Chuhichupa, the Garabato, Chico, and Guaynópita certainly contain cliff dwellings of the Chihuahua culture, but the country farther to the southwest is unknown. Chihuahua cliff dwellings, however, have been reported from the Rio Sátechí (Castillo) country near the Sonora-Chihuahua

11. The University of New Mexico field party of 1936 made a rather extensive survey of the upper Chico drainage. Notes of this survey are on file at the University of New Mexico.

border. Only a few potsherds sites with plain shards were noted in the Temósachic-Yepomera portion of the Papigóchic. Despite the labeling of some Chihuahua pottery in the Southwest Museum (Wiswal loan collection) as being Temósachic ware, it is the firm belief of the writer that no Chihuahua pottery was ever made or dug up closer to Temósachic than in the Babícora basin to the north.

Pine Compound (70)—

The Garabato tributary of the Río Chico heads in the country immediately west of the Babícora basin. In the grassy open valleys drained by affluents of the Garabato are many ruins of stone and adobe. Seven of these small mounds were noted in a nine mile stretch between the Babícora-Garabato water divide and the Garabato, in the valley of a small eastern tributary. These mounds average thirty yards square, are grass covered and usually support one or more pine trees. There is a large group of stone and adobe mounds between the branches of an arroyo that drains into the Garabato a few miles below Farnsworth's lumber camp. The road from Las Varas to the lumber camp passes to the north of this site, at a point about eight miles west of Las Varas. The site comprises several small stone and adobe mounds, numerous unrelated *cimientos*, and a large open compound seventy yards long and thirty-five yards wide. Stone and adobe walls were identified in the compound, which yielded several scoop metates, manos, *molcajetes* (mortars) and some potsherds. The pottery was all of Chihuahua type.

Garabato (69)—

A large community of cliff dwellings occupies the right wall of the Garabato canyon less than two miles below the Farnsworth lumber camp. The dwellings consist of several agglomerations of rooms, varying in number from two to more than thirty, located several hundred feet above the canyon bottom. In no respect were these dwellings different from those seen in Cave Valley, Arch Flat, and elsewhere to the north. The pottery, represented by a few shards, was pure Chihuahuan. These sites are truly defensive retreats, lacking in nearby agricultural land, and requiring expenditure of considerable daily energy in the provisioning of wood, water, etc.

Babícora:

The grassy plains of the Babícora basin are crossed by several streams that drain into the Laguna Babícora. Along these streams and on the wooded ridges and spurs marginal to the plains are located numerous stone and adobe ruins. These ruins are most numerous along the upper Arroyo de las Varas, near San José Babícora along the Arroyo Babícora, and along the Arroyo Chávez east of Laguna Babícora. The valley ruins tend to be constructed of pure adobe, but the ridge and margin sites contain many *cimientos* and walls of mixed stone and adobe. Of the three settlement centers in the basin, that of Las Varas was most populous. More than twenty mounds occur in a six mile stretch between the Hearst headquarters ranch at Las Varas and a point about two miles below Rancho San Marcos. Most of these mounds are on the higher left bank, at distances up to

half a mile from the arroyo. Carey (1931) has excavated and reported on several of the ruins from this arroyo, as well as others in the Babicora drainage¹² All of the ruins in the Babicora basin yield Chihuahua wares. These ruins extend into the pine belt on the south, almost to the water divide with the Arroyo Yepomera, but none seems to transgress this physical border.

Laguna Babicora (68)—

Between Los Ojos on the Laguna Babicora shore and Rancho Santa Eloisa on the Arroyo de las Varas the road crosses a rocky ridge, about four miles from Los Ojos. In a saddle on the ridge are several mounds, compounds, *cimientos* and rock houses. These ruins yielded a fair sampling of Chihuahua wares.

Santa María:

Chihuahua culture and trade wares from beyond the international border attained their most southern extension up the corridor of the Santa María valley. An interesting increase in the number and abundance of trade wares, as well as of Chihuahua wares, can be traced downstream from San Jerónimo (74), in the extreme south, to Arroyo Cuatro Amigos (22) in the vicinity of one of the Río Grande-Casas Grandes trade routes. Already, in the Santa María river valley the peoples of the Chihuahua culture were getting into a region rather marginal, because of deficient water supply, for a moderately advanced culture based on agriculture and large permanent settlements. Only the localities most favored with fertile soil and available water, Valle de San Buenaventura and the Lower Santa María, were well inhabited in prehistoric times.

San Jerónimo (74)—

The most southern site yielding decorated pottery of the Chihuahua culture is that near Rancho San Jerónimo, some sixteen miles down the Santa María (Río Bachíniva) from Bachíniva. This site occupies a small ridge in the center of a plowed maize field about 400 yards northeast of the river and a half mile southwest of the main valley road from Bachíniva to Nami-quipa. The river at present flows close to the hills on the southwestern side of the valley, but an old drainage line is discernible along the center of the valley. A number of *labores* (cultivated fields) now occupy the former stream bed. Along the margins of this former drainage line are several small obscure mounds similar to the one near San Jerónimo. This area had been under modern cultivation for so long a period that most of the inhabitants of the valley were unaware of the existence of *montezumas* in their fields. The San Jerónimo site, the largest and best preserved one observed, consists of two or three slight undulations on the top of a small plowed ridge. No stone artifacts nor any *cimientos* or outlines of adobe walls are visible on the surface. Only a few shards mixed with the clods of the field mark this definitely as a *montezuma*. In addition to Chihuahua wares, there were found at the site two shards of unmistakable Mimbres

12. Kidder (1939) records the results of excavations in 1924 on Arroyo de las Varas, as well as investigations in Garrabato Canyon.

Black-on-white. This is the farthest known southern limit for the New Mexican ware.

Probably there are small ruins, similar to that of San Jerónimo, in the valley between Hacienda Santa Ana de Babicora and Las Cruces but none was located. The inhabitants of the area profess total ignorance of any local ruins, although most of them know of *montezumas* in El Valle de San Buenaventura or at least in the Casas Grandes valley. Whatever prehistoric settlements may have occupied this sector of the Santa María river are now completely obscured and forgotten.

San Buenaventura (66)—

The Valle de San Buenaventura possesses fertile lands, a perennial water supply, and a warmer climate than the upstream valleys. This is one of the oldest and most continuously inhabited European settlements in Northwestern Chihuahua. The town of San Buenaventura is situated on the right bank river plain. Undoubtedly several prehistoric ruins have been removed during the more than two hundred years of Spanish and Mexican occupation. Remnants of a large *montezuma* were located a mile and a half north of the San Buenaventura plaza, just west of the main street or road. This mound is surrounded by houses, including a school, whose walls contain numerous shards. Several manos and broken metates are on the mound. The shards found here are similar to those from San Jernónimo, with the substitution of Little Colorado for Mimbres trade ware. *Montezumas* were reported in the *mesquital* west of the river, but these could not be located.

No ruins were observed between El Valle de San Buenaventura and Galeana, although a few were reported to be west of Galeana across the river, and on the Arroyo de San Joaquín some ten miles to the southwest.¹³ A number of small sites are situated along the river below Galeana.

Espindoleño (65)—

From Ojo Caliente (thirteen miles below Galeana, on the right bank of the Santa María) to El Apache (twelve miles farther downstream in the east bend of the Middle Santa María), there are a number of small stone and adobe ruins, principally along the right bank terrace. Two small mounds are in the *mesquital* on the terrace edge between the houses of Ojo Caliente and the river plain. Just southeast of the Espindoleño ranch house is another small adobe and stone mound, nearly obliterated. It yielded a few shards, and had many *molcajetes* but no metates on the surface. Three-quarters of a mile below Espindoleño is a large ruin in a *mesquital* on a *malpais* spur east of the road. It consists of several mounds which have been pothunted, and show adobe and mixed stone and adobe walls. Only a few shards were obtained here. A quarter of a mile southeast of Colonia El Apache, on a left bank mesa spur, is a small mound of closely associated rooms. It had been dug but was poor in potsherds. The gorge below El Apache was not investigated, but no *montezumas* are reported for the stretch as far as the Hacienda San Luis. The inhabitants of the Ojo Caliente-El Apache region were evidently a poor group occupying a land that was valuable mainly as a passageway. This significance of the region is indi-

13. Sayles (1936) records information obtained in 1933 from surface collections and trenches in the Galeana area.

cated by the presence of Middle Gila and El Paso trade ware, in addition to Chihuahua wares.

A number of large ruins were reported in the mesquite covered alluvial valley of the Santa María. Several of these were visited although some of the largest ones, said to be just west of the river opposite Loma Parapetos (a fortified *malpais* hill), could not be located.

Cerro del Presidio (45)—

A site on both sides of the road in the valley plain, about fifteen miles north of Hacienda San Luis and nearly opposite the Cerro del Presidio. This ruin is on a somewhat denuded flat, scantily vegetated with grass and mesquite. Many manos, four mortars but no metates were observed. Potsherds and spalls were abundant. One piece of molybdenum was obtained here. In addition to the Chihuahua wares, there were shards of El Paso, Middle Gila, Little Colorado, and Chupadero wares.

Arroyo de los Cuatros Amigos (22)—

This site is four miles northwest of the Rancho del Presidio, and a half mile west of the main San Luis-Vado de Santa María road, on the east bank of the Arroyo de los Cuatros Amigos. Artifacts cover an area 500 yards by 350 yards, just east of the narrow mesquite gallery along the arroyo. A scanty mesquite and chamiso growth covers the site, which has been badly eroded. No walls are visible, but many metates, mortars, manos, flint, and obsidian spalls, bone and turquoise beads, arrowheads, and potsherds are scattered over the site. Excavations made by pot-hunters reveal no walls, but traces of several fire pits and burned floors are present. The buildings here probably were of mud and wattle over slight pits. An active trade was carried on by this settlement, if one may believe the testimony of many Chupadero, El Paso, Little Colorado, and Middle Gila shards.

Vado de Santa María (46)—

There is a very large site at the Vado de Santa María, which extends 800 yards from a *malpais* ridge to the west bank of the river, and perhaps a mile upstream from the stone house at the Vado. The road to Sabinal passes across the site. The northern portion is mesquite covered sand dunes against a lava spur. The southern part is greatly cut up with washes, between which are mesquite covered silt mounds. There were arrowheads, manos, and a few metates, and faint indications of *cimientos*. This is a nearly pure Casas Grandes site.

Below the Vado de Santa María is the Laguna Santa María basin, walled in by steep *malpais* ridges. The only ruin noted in this basin was on a lava spur on the west side of the lake, near the Ojo de Santa María. Evidently a constant supply of water was the limiting factor for settlement in this desert basin with an ephemeral lake. The site consisted of a few manos, shards, and spalls scattered through creosote bush and mesquite, near some small stone house foundations. The shards were dominantly Casas Grandes Polychrome, with some El Paso and corrugated wares.

An almost uninhabitable desert area lies between Laguna Palomas and the Río Grande. No springs are known for this exceedingly dry land of sparsely vegetated sand dunes and gravelly mesas. Indian settlements, however, were located at two spots within this region—

Laguna Tildio and Mount Riley. The existence of these communities, where now no water is naturally available, can be explained—in the case of Laguna Tildio—by postulating a seasonal flow of the Mimbres river into the Tildio basin.

Laguna Tildio (48)—

Some weathered shards, broken metates manos and arrowheads are scattered throughout the sand dunes and badlands at the northeastern margin of the Laguna Tildio sink. The greatest concentration of artifacts is one mile northeast of the Palomas Cattle Company's most eastern tank at the end of the canal from the Ojos de Palomas. El Paso and Chihuahua shards are equally represented at this site. Chupadero ware also is present.

Mount Riley (34)—

This site is one mile east of Mount Riley station, south of the railroad, and extends for about 800 yards along a wash—from the railroad in to some sand dunes. Pieces of metates and manos, and many shards cover this entire area. The point of major concentration of artifacts is opposite the railroad bridge. The site is a mixture of El Paso and Chupadero wares, with a sparse representation of Chihuahua and Middle Gila pottery. The wash which passes through the site carries water, in the rainy season only, into the ephemeral Laguna Durazno south of the International border. Lacking wells, the Indians must have depended upon *charcos* for their domestic water supply. As this is one of the driest regions in this part of the continent, *temporal* farming is a remote possibility for explaining the presence of this settlement. No house foundations were located here, which may indicate that it was a camp site frequented by traders, travelers, and hunters.

A large area of uncertain drainage and desert climate lies south of the area just previously discussed. The settlement possibilities, however, are immeasurably better as many limestone springs create a number of oases. Shards, arrowheads, and spalls were found at practically every spring in this region. The larger springs, or groups of springs, usually support a scanty tree growth in addition to mesquite. At these springs manos, metates and mortars also make their appearance. Only four sites were located that possessed decorated pottery. It is quite probable that these represent nearly all of the sites occupied by sedentary peoples. The other sites, having mortars, plain shards, spalls, and nomadic type arrowheads, probably were occupied at a later date by Apaches and other nomads. This region was infamous as an Apache stronghold for several generations prior to 1884.

El Subteraneo (18)—

The Arroyo del Apache which flows northward into the Santo Domingo basin, is crossed by the San Luis-Carrizal road at a point eleven miles west of the Ojo de Santo Domingo. Potsherds, spalls, and manos are scattered along both banks of this arroyo for a half mile south from the road. There are two mounds visible along the left bank, one about 200 yards south of the *manga* (stone corral) near the solitary poplar tree which is watered by a high water table subterranean flow of water in the arroyo,

and the other one an equal distance to the north. The mounds are badly eroded and scarcely discernible. One Mimbres shard was found here, in addition to a number of Chihuahuan potsherds.

Ojo del Carbonero (30)—

The Ojo del Carbonero is a strongly flowing spring whose waters are now used to irrigate the newly established Colonia El Poblado del Presón. About 800 yards northwest of the *ojo* is a potsherd and spall area that covers about a hundred acres of *mesquiteal*. This site is about five miles west of the Ojo de Santo Domingo. No foundations or walls appear upon the surface. Chihuahuan wares dominate, but there are strong elements of El Paso Polychrome and Carmen Red-on-gray wares. No evidence for ancient canals could be located here.

Ojos Calientes de Santo Domingo (31)—

The Ojos Calientes de Santo Domingo occupy the top of a low limestone hill, surrounded by *playas*. Along the southern margin of the hill there is a large area of sand dunes and drifting sand. The site consists of potsherds, arrowheads, spalls, beads, and manos strewn over an area in the sand dunes about a half mile long and 400 yards wide. There are no mounds or outlines of walls—merely water and wind accumulated piles of artifacts on the surface. The metates were all of the bowl type. This site afforded an unusual number of arrowheads and turquoise beads. It probably was a sedentary site on a turquoise trade route, centered at this spot because of the thermal springs which must have attracted the Indians for miles around. The northeastern wares (El Paso and Chupadero) are dominant.

Salinas de la Unión (43)—

Las Salinas de la Unión are in a basin or embayment in a large *barreal* (clay flat) which is cut into two lobes by a sand ridge. There are many remnants of stone shelters, and an abundance of pottery shards and arrow spalls throughout the dune ridge, especially on the western side. Metates, manos, and arrowheads are also numerous. The salt from these *salinas* must have been the incentive for settlement here, as agricultural land and water supply are deficient. The comparative abundance of Casas Grandes Polychrome ware so far east points to this site as a Chihuahuan colony for the exploitation of the salt springs. El Paso and Chupadero wares, normally well represented in this region, are nearly lacking. This is to be expected, as the Chupadero and El Paso peoples, who centered their cultures north of El Paso, had a nearer source for salt in the Salt Lake southwest of the Guadalupe Mountains in Texas.

Río Carmen:

The basin of the Carmen river marks the eastern-most advance of Chihuahuan culture. In the northern portion there was a mixture of cultural influences from the west and from the northeast. This convergence of cultures was expressed in ceramics more than in settlement patterns. Most of the Carmen country is either a bleak upland steppe such as in parts south of Hacienda San Lorenzo, or an arid desert basin such as prevails around Laguna Patos. Pre-historic settlements were restricted, in general, to a few localities along the river margin and at the largest springs.

Ojo del Coyote (42)—

The Ojo del Coyote is a cold slightly sulfurish spring which flows from under the roots of a poplar that crowns a sand dune just east of the road from Villa Ahumada to Ciudad Juárez. The site consists of manos, spalls, arrowheads and shards scattered around the spring and among sand dunes eastward towards the railroad. No foundations of any sort were located. The painted shards were mainly of Villa Ahumada and El Paso wares. Similar potsherds are found scattered all along the margin of Laguna Patos, from the vicinity of Ojo del Coyote to Ojo de San José and southward.

Ojo del Mesquite (17)—

East of the Laguna Patos are a number of springs among the sand dunes. Every spring visited had formerly been a center of habitation. The Ojo del Mesquite is about seven miles north east of Villa Ahumada, surrounded by mesquite vegetated sand dunes. On the west slope of the sandhill that holds the spring are faint traces of an adobe *montezuma*. All around are potsherds, manos, and fragments of human bones. The site was poor in Chihuahua wares but had many El Paso and Mimbres shards, as well as a local red-on-gray or light buff ware (Carmen Red-on-gray) characterized by medium coarse paste and crudely executed linear designs.

Ojo del Palo Blanco (44)—

This site is about 800 yards southwest of the Ojo del Mesquite, in a similar sand dune situation. Many manos, arrowheads, spalls and shards cover the area for several hundred yards around the spring. A fairly complete representation of Chihuahua wares was obtained here, but El Paso and Mimbres continued to predominate, in addition to the local (Carmen) ware already recorded from Ojo del Mesquite. The strong representation of Mimbres ware at the spring sites around Laguna Patos is of interest. The presence of smoothed corrugated ware, normally associated with Mimbres Black-on-white in New Mexico, lends strength to the idea that Mimbres culture may have had a far southern colony here.

Loma de Montezuma (16)—

The Loma de Montezuma is a large mound about two miles southwest of Villa Ahumada in a *mesquital* to the west of the Río Carmen. Excellent farm land surrounds the site and extends southwest toward the springs that may have been used for irrigation. The mound is 160 yards long north-south and seventy yards wide east-west, with sand dunes just to the north and east. It is composed of "melted down" adobe walls which make a mass about twenty feet high at the central point. The mound tapers and lowers at the ends, and seems to have consisted of a row of joined buildings, with the highest nearly in the center. There have been a few surface diggings that have turned up great quantities of potsherds, some human bones, and a number of turquoise beads and pendants. In every respect this is the most important archaeological site east of Casas Grandes, and would well repay excavation. The Chihuahuan complex is well represented here, but shares honors with El Paso ware. Most of the trade wares are represented in quantity. The huge quantity of El Paso Polychrome ware found here stamps this site as having been occupied by peoples of that culture, probably jointly with peoples of Chi-

huahuan affinities. At this site there was found the greatest development of a Chihuahuan black-on-red-on-white slip polychrome which has been termed Villa Ahumada ware. No reason can be adduced for the prevalence of this ware here, since little or nothing is known of its stratigraphic relationships with the other Chihuahuan wares.

Several small potsherd, mano and spall sites are located along the banks of the Río Carmen throughout its middle course. *Montezumas* are reported at Ojo de la Magdalena, east of the railroad. At the famous Ojos Calientes de Santa Rosa (Ojos Calientes de Carrizal) mortar holes, pestles, and plain shards were found, but no decorated wares. Sand dunes near Cascajal and La Providencia yielded many stone artifacts, and some potsherds, including the Carmen Red-on-gray ware found in the Laguna Patos region. This ware seems to have a local extension within the Carmen basin. As it is almost invariably found with Mimbres ware, and is nearly lacking at the Loma de Montezuma site, we may tentatively consider it as an early ware developed prior to the intrusion of Chihuahuan culture from the west. Seven miles above La Providencia there is a large flat, on the west bank upper river terrace, dotted with small heaps of rock and sprinkled with plain and corrugated potsherds.

El Carmen (56)—

There is a large compound ruin in the lower end of the Hacienda El Carmen valley, two and a half miles north of the hacienda on a gravel covered mesa spur just above the river plain. This ruin, sometimes locally called La Montezuma de la Punta del Alambre, is more than a hundred yards wide east-west and 150 yards long north-south. The main Carrizal-El Carmen road crosses the ruin, which is somewhat mesquite covered. There are visible the *cimientos* of three stone and adobe compounds, strewn with shards, manos, and scoop and bowl metates. The potsherds collected were mainly of the local Río Carmen Red-on-gray ware, but Chihuahuan, El Paso, Mimbres, and other trade wares were represented. The presence of Three Rivers Red-on-terra cotta and Lincoln Black-on-red shards bolsters the supposition that the local Río Carmen ware was a comparatively early development.

Las Montezumas (73)

A group of compound mounds, ninety yards long and forty wide, occurs two and a half miles upstream from Hacienda del Carmen in a wheat field on the right bank flood plain of the river. This site is situated at the lower end of a gorge which separates the Upper and Middle Carmen river. The mounds are of adobe, covered thickly with mesquite. Metates, manos, and shards are numerous. This is a nearly pure Chihuahuan site, and constitutes the strongest representation of that culture on the Río Carmen above the Loma de Montezuma. Some smaller mounds are a few miles upstream at Las Galeras.

Santa Clara (71)—

Only one ruin was located in the Upper Carmen valley, above the Hacienda San Lorenzo. This is a low small grass covered mound of gravel and adobe, situated on the left bank flood plain a short distance from the river. It is just east of the Santa Clara-Santa Catalina road, less than six miles south of Santa Clara. Only a few shards were found, all of them being crude examples

of Chihuahuan wares. There probably are a few other sites in the valley, but certainly no large ones in this marginal area.

Northeastern Area:

Several sites (35, 36, 37, 72) were visited within a radius of seventy miles north and northeast from El Paso. There was a well developed trade of Chihuahuan wares into the El Paso area, but no site could be considered to fall within the Northwestern Chihuahuan culture area.

NOTE: Many of the names for ceramic types used above probably are unfamiliar to the reader. Terminology for Chihuahuan ceramics developed primarily in the published writings of Lumholtz (1902), Kidder (1916, 1924), Chapman (1923), Amsden (1928), Carey (1931), Brand (1935), and Sayles (1936). Brand (manuscript 1933, publication 1935) used many of the older names especially Kidder's, and named a few new types. Sayles (1936), on the basis of both shards and whole pieces, named a few new types and broke down several of the old types into specialized named types. The pertinent literature for synonymy includes:

Donald D. Brand: "The Distribution of Pottery Types in Northwest Mexico," *American Anthropologist*, n. s., vol. 37, pp. 287-305, 1935.

E. B. Sayles: "Some Southwestern Pottery Types, Series V," *Medallion Papers* no. XXI, 1936.

Florence M. Hawley: "Field Manual of Prehistoric Southwestern Pottery Types," *University of New Mexico Bulletin* no. 291, 1936.

Harold Sellers Colton and Lyndon Lane Hargrave: "Handbook of Northern Arizona Pottery Wares," *Museum of Northern Arizona Bulletin* no. 11, 1937.

The pottery types mentioned in this paper, together with synonyms, additions and alterations, are listed below. In parentheses are given the names (and dates of publications) of the individuals who first named or accurately described the types. The terms "Chihuahua" or "Chihuahuan ware" or "wares," "types," and "complex (as used in the above paper) refer to all pottery types presumably indigenous within the Chihuahuan culture area. This excludes the presumptive trade or peripheral wares.

I. Chihuahuan wares or complex:

A. Chihuahua Polychrome Wares

1. Casas Grandes or Chihuahua Polychrome (Lumholtz, 1902; Kidder 1916, 1924; Chapman 1923; Carey 1931; Brand 1935). This has been broken down by Sayles (1936) into:
 - a. Dublán Polychrome (in part Casas Grandes Duochrome)
 - b. Corralitos Polychrome Incised (in part Kidder's Chihuahua Redware)
 - c. Ramos Polychrome (also known as Classic Casas Grandes Polychrome, and as Chihuahuan Painted Ware)
2. Babícora Polychrome (Carey 1931; Brand 1935; Sayles 1936; Brand's Inferior Casas Grandes Polychrome, and Amsden's Peripheral Casas Grandes Polychrome in part)
3. Huérigos Polychrome (Brand 1935; in part Amsden's Peripheral Casas Grandes)
4. Carretas Polychrome (Sayles 1936; in part Amsden's 1928 and Sauer and Brand's 1930 and 1931 Peripheral Casas

Grandes, and Brand's 1935 Huérigos Polychrome; synonymous with Gladwin's Nacozari Polychrome)

5. Villa Ahumada Polychrome (Brand 1935; Sayles 1936; synonymous with Gladwin's Galeana Polychrome)

B. Chihuahua Duochrome Wares

1. Medanos Red-on-brown (Sayles 1936)
2. Madera Black-on-red (Sayles 1936; synonymous with Chihuahua Black-on-red of Kidder, Brand, and others)
3. An unnamed (Casas Grandes) duochrome variant of the normally trichrome Casas Grandes Polychrome

C. Chihuahua Monochrome Wares

1. Playas Red (Sayles 1936; synonymous with Kidder's Chihuahua Redware, and with Brand's Casas Grandes Redware)
2. Ramos Black (Sayles 1936; synonymous with Kidder's Chihuahua Polished Blackware, and Brand's Casas Grandes Blackware)
3. On red, brown, buff, or black ware there often occur such texturing features as incisions, indentations, and corrugations. Kidder 1916 and 1924, Brand 1935, and others discussed such variants but only Sayles has given a name to any of these variants—Playas Red Incised.

II. Peripheral Wares:

1. Carmen Red-on-gray (Brand 1935; Hawley 1936)
2. Conchos Red-on-brown (Sayles 1936)
3. Cloverdale Gouged Redware (described by Sauer and Brand 1930 and Brand 1935 as Triangularly Gouged Redware; Hawley 1936)
4. Sonora plain, raked, and crudely incised monochrome wares, chiefly gray, buff, brown, red and black. These wares have been imperfectly described by Bandelier 1892, Amsden 1928, Sauer and Brand 1931, and Brand 1935, and in part by Haury 1936 and Fulton and Tuthill 1940.

III. Trade Wares:

A. From the north and northeast:

1. Mimbres Black-on-white. This ware has in recent years been broken down into a number of types by Cosgrove & Cosgrove 1932, Gladwin 1934, Haury 1936, and others.
2. Mimbres Smoothed-Corrugated (Synonymous with Mimbres Corrugated of Cosgroves 1932 and Mangus Corrugated of Gladwin 1934)
3. El Paso Polychrome (Alves 1931, Stallings 1931, Cosgrove & Cosgrove 1932)
4. Chupadero Black-on-white (Mera 1931, Stallings 1932, Cosgrove & Cosgrove 1932)
5. Three Rivers Red-on-terra cotta (Cosgrove manuscript of 1925, Stubbs 1930, Alves 1931, Mera & Stallings 1931; synonyms include Alamogordo-, Tularosa- and La Luz-Red-on-terra cotta)

6. Lincoln Black-on-red (Mera & Stallings 1931; synonymous with Rio Grande Black-on-red)
- B. From the north and northwest:
1. Tularosa Black-on-white, (Kidder 1924, Hawley 1929, Gladwin 1931, Hawley 1936; also known incorrectly as Roosevelt Black-on-white, and as Upper Gila Black-on-White)
 2. Middle Gila Polychrome (Kidder 1924, Schmidt 1928, Hawley 1929; also known as Central Gila Polychrome and Lower Gila Polychrome). Broken down by Gladwin (1930) into Salado ware comprising:
 - a. Pinto Polychrome (Early Middle Gila Polychrome)
 - b. Gila Polychrome (Late Middle Gila Polychrome)
 - c. Tonto Polychrome (Latest Middle Gila Polychrome)
 3. Little Colorado Black-on-red (Kidder 1924, Gladwin 1931, Haury 1931, Mera 1934, Hawley 1934). This general term up until ten or fifteen years ago was used for a ceramic complex which has been broken down into many types, of which the following probably were represented in Chihuahua:
 - a. Showlow Black-on-red
 - b. Wingate Black-on-red
 - c. St. Johns Polychrome (in part)
 4. Little Colorado Polychrome (Hough 1903; Fewkes 1904; Spier 1917 & 1919; Kidder 1924; Hough 1930; Gladwin 1931; Haury & Hargrave 1931; Mera 1934; Haury 1934; Kidder & Shepard 1936). This term also was used for a ceramic complex which during the past fifteen years has been broken down into many types, of which the following probably were represented in Chihuahua:
 - a. St. Johns Polychrome
 - b. Pinedale Polychrome
 - c. Four Mile Polychrome
 - d. Cibicue Polychrome
 - e. Heshotauthla Polychrome