

Pueblo Archaeology of the Rio Grande Drainage

by

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Approved  
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## Chapter I.

INTRODUCTION.

The Pueblo culture (in its broad sense) of the American Southwest occupied almost all of New Mexico, Arizona, and Utah, southwestern Colorado, southeastern Nevada, extreme southeastern California, the northern part of Sonora, the northwestern portion of Chihuahua, and extreme western Texas, with known dominant centers of the cultures confined to Arizona, New Mexico, southwestern Colorado, southern Utah, and northwestern Chihuahua. By the time Pueblo culture was at its zenith, highly specialized sub-cultural groups, confined for the greater part to certain drainage areas, had developed. This phenomenon suggested a simple system of nomenclature, and the sub-cultures have largely taken names from the drainages systems of which they are characteristic. Thus the dominant sub-cultural groups now recognized are known as the San Juan (with three principal foci: Mesa Verde, Chaco, and Kayenta), Little Colorado, Upper Gila, Middle Gila, Mimbres, Chihuahua (Basin), and Rio Grande.

Of late there has been a tendency to tear down the familiar boundaries of these sub-cultures. Good Chaco characteristics have been found in the Little Colorado area well to its southern extent and north well

into the sphere of Mesa Verde. From a comparative study of pottery designs the Medallion Society has presented the thesis that the Little Colorado, Upper Gila, and North Middle Gila (Salado) sub-cultures are but local manifestations of one and the same sub-culture(1). A reconnaissance party under Cummings, in 1931, found ceramically pure Mimbres sites on the Upper Gila, and Hough(2) pictures only Mimbres pottery from pit-houses near Luna, well in what has been considered the center of Upper Gila Culture.

A more radical development has been the separation of the "red-on-buff" culture of the Middle Gila from the Pueblo culture proper. The former has been named the "Hohokam culture" and raised from the class of subculture to that of a culture equal in rank to that of the Pueblo culture(3). With this development we are at a loss to say just where early Mimbres and Chihuahua culture would be classified. These are problems to be worked out. For our purposes here it seems most practical to retain the old accepted use of the term "Pueblo culture" as including the imposing archaeological material of the

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1. Some Southwestern Pottery Types, Series II, Globe, Arizona June 1931.
  2. Hough, W., Exploration of a Pit House Village at Luna, New Mexico, Proc. U.S. Nat. Muse., vol 55, Washington, 1919.
  3. Haury, Emil, Roosevelt: 9:6, A Hohokam Site of the Colonial Period, Gila Pueblo, Globe, Arizona, January 1932.  
Woodward, Arthur, The Grewe Site, Los Angeles Museum of Hist., Science, and Art, Occas. papers I, December 1931.

entire Southwest. Further, we are using the familiar designations of the sub-cultural areas, as by those terms are certain criteria most readily and surely recognized. The classification of cultural scale used herein is that of Professor Byron Cummings, based on evidences of house types, negative and positive. A general correlation of the Cummings classification with the other principal classification, that advocated by the Pecos Conference of 1927(4), based on Kidder's classification of 1924(5) and adapted principally to conditions of the San Juan and closely related fields, is as follows:

Cummings	- Kidder	- Pecos Conference
Archaic Period (Pleistocene to next-stage little known)	-	-
		- Basket-Maker I (postulated)
Cave Period	- Basket-Maker	- Basket-Maker II
Early Pueblo Period (First round pit houses, then rectangular ones)	- Post-Basket-Maker - Pre-Pueblo	- Basket-Maker III - Pueblo I
Transition (Unit-Type and Small-houses)	- Pueblo Period	- Pueblo II
Late Pueblo Period	-	- Pueblo III-Classical - Pueblo IV-Decadent - Pueblo V-Historic.

4. Kidder, A.V., Southwestern Archaeological Conference. Science, vol. 60, no. 1716, New York 1927. Recently amplified and restated in: Roberts, F.H.H., Jr., Shabik-eshchee Village: A Late Basket-Maker Site in the Chaco Canyon, New Mexico. Bull. 92, Bur. Amer. Ethn., Washington, 1929.  
Idem., Early Pueblo Ruins in the Piedra District, Southwestern Colorado, Bull. 96, Bur. Amer. Ethn., Washington 1930.
5. Kidder A.V., The Pottery of Pecos, I, New Haven, 1931.  
Idem., The Artifacts of Pecos, New Haven, 1932.
5. Kidder, A.V., Introduction to the Study of Southwestern Archaeology, New Haven, 1924.



The Cave Dweller Period is marked by excellent textile work in hair, yucca, and apocynum, presence of a hard flint corn (agriculture), the atl-atl, or spear thrower, as a weapon, and characteristic forms of artifacts. It is negatively characterized by the absence of traits of later periods: permanent homes, fired pottery, bow-and-arrow, baby-board, cotton, beans, etc. The center of Southwestern Cave Dweller culture, as apparent at present, is virtually confined to the San Juan drainage. A sandal from the Upper Gila, recent finds near El Paso and farther east in the Big Bend country of Texas, and in Coahuila, Mexico, have brought to light another Cave Dweller Culture, but its morphologic and chronologic relation to that of the San Juan is not yet demonstrated.

The Early Pueblo Period is characterized by permanent homes in the form of pit-houses, first circular, then rectangular, development of fired pottery, introduction of beans, new varieties of corn, and the bow-and-arrow. The textile work of this period in northern Arizona and the neighboring region was the finest ever produced in the aboriginal Southwest. The culture of the Early Pueblo Period which is considered a development, with some extraneous additions, of the previously described Cave Dweller culture, centers in the San Juan and Little Colorado. To the south, in the Middle Gila, the period is represented by a higher

culture: specialized and artistically superior pottery, excellent stone work, bone carving, a high development of the jeweler's craft, and a good development of agriculture.

The Transitional Period, small-houses and unit-type villages, is characterized by the development of small surface houses, development of pottery and the material culture in general. This period is represented all over the Southwest.

The early part of the Late Pueblo Period was the "Augustan Age" of the Pueblo Culture. Large communal houses came into existence; each locality became a specialized center or sub-center. The arts and crafts in general were at their zenith. This is the period probably best known. A few familiar ruins are Cliff Palace in the Mesa Verde, Colorado, Pueblo Bonito in northwestern New Mexico, Betatakin in northern Arizona, and Casa Grande in southern Arizona. After this climax the Pueblo culture suffered degeneration. Artifacts became hyper-specialized, towns less compact, and architecture slipshod and poor. Just preceding and during the first part of the last phase of the Late Pueblo Period the area of Pueblo occupation shrank to include only the Little Colorado and upper Rio Grande. Today there are some twenty-six towns occupied in those two regions.

The above has sought to present a sketch of the main phases in the Pueblo cultural scale. As a warning, it should be pointed out that though basically the scale

sequence is chronological, contemporaneity of the same phase in different localities is not necessarily to be assumed. For example there were small-houses in the north at the same time as pit-houses in the south, and Casa Grande apparently attained its classic period after the abandonment of such sites as Cliff Palace and Pueblo Bonito. In the northern cultures, the San Juan remained the center of diffusion of cultural traits from the Cave Dweller Period to the classic phase of the Late Pueblo Period, after which time the dominant centers shifted to the south and east. In the conclusion an attempt is made to give the morphologic and chronological relation of the Rio Grande sub-cultures to those of the rest of the Southwest.

## Chapter II

NATURAL GEOGRAPHY

New Mexico extends from about Longitude  $103^{\circ}13'$  on the Texas State Line and  $103^{\circ}$  on the Oklahoma State Line to about Longitude  $109^{\circ}$  on the Arizona State line, and from about latitude  $32^{\circ}$  on its southern boundary (Mexico and Texas) to  $37^{\circ}$  on the Colorado State Line. The highest parts of the state are in the north and there is a gradual mean slope toward the south. The state is traversed from north to south by the Rio Grande, which crosses the Colorado Line at an elevation of about 7900 feet and leaves the state at an elevation of about 3750 feet; and for some four-fifths of its length by the Pecos River, which crosses the Texas line at an elevation of about 2850 feet. Within the state are the headwaters on the east, of the Canadian River, and, on the west, of the San Juan, Little Colorado, and Gila Rivers.

A principal physiographic feature is the southern extension of the Rocky Mountains to about latitude 35, with continuations southward in a series of high detached ridges extending to and including the Franklin Mountains at El Paso, Texas. West of northwestern New Mexico is a part of the Colorado Plateaus. South of this section rise The Zuni, Datil, San Francisco, and other mountains, the region of the headwaters of the Little Colorado and the Gila.

East of the Rocky Mountains, which in northern New Mexico are grouped in the term Sangre de Cristo Mountains, and east of the Pecos River, which has its source in the southern Sangre de Cristos, are the western reaches of the Great Plains, with greatest area in the southern part of the state. The southwestern and south-central part of the state is in the Basin-Range Province- detached mountains and intervening basins and valleys. Along the Rio Grande Valley the change from the Rocky Mountains to the Basin-Range Province is gradual, and there is some question where the arbitrary line should be drawn. For our purposes it may be said that in the middle belt of the state, the Basin-Range Province extends north to about latitude  $35^{\circ}$ .

It is, roughly, in the middle belt of the state, in the south from the Rio Grande to the Pecos, and in the north from the Eastern Puerco and Chama to the Sangre de Cristo Mountains and the Pecos River, that the known Rio Grande culture was located, and it is this belt to which greater attention is given hereafter.

7 The Sangre de Cristo Range (local names: Truchas, Santa Fe, Pecos, and Rincon Mountains) rise to a height of 13,306 feet (Truchas Peaks), and on its lower

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7. Much of the following geological data has been taken from W.H.Darton's "Geologic Map of New Mexico", United States Geological Survey, Washington, 1928.

slopes are many small valleys. The rocks are mainly Carboniferous limestones, sandstones, and shales, pre-Cambrian granites, and various post-Carboniferous igneous rocks. Just to the west the Rio Grande has cut its valley. To the east of the Rio Grande as far south as the mouth of the Rio Chama (see map) is a plateau of Quaternary basalt, through the eastern border of which flows the Rio Grande. The drainage area of the Rio Chama in New Mexico is marked by occasional high peaks, deeply dissected mesas, and fault block ranges, in the main of Carboniferous and Cretaceous sediments. To the south is the Quaternary igneous mass of the Jemez Mountains, mainly basalts, rhyolites, and tuffs. The crater of the mass is known as the "Valle Grande", and the eastern side as the "Pajarito Plateau". On the western side, Pennsylvanian and Cretaceous sediments outcrop in the deeply cut valleys. Contiguous on the west is the fault-block Nacimiento Range, pre-Cambrian granites and Carboniferous and Cretaceous sediments. The Eastern Puerco River drains the country of wide contours to the west of the Nacimientos.

To the east of the Jemez Mountains, and on the eastern side of the Rio Grande, is the gently rolling country locally known as the "Santa Fe Plain". Quaternary basalt from the Jemez Mountains occupies its southwestern section. South of the "Santa Fe Plain" is the Galisteo Basin, enclosed on four sides but drained by the Rio Galisteo and its tributaries, which leaves the basin at its northwest corner. To the east the basin is separated from the Pecos

Valley by various outlying ridges and mesas of the Rocky Mountains and the Chupadero Mesa. The Pecos River in this northern section flows through Carboniferous sediments, a region of rolling hills, open valleys, mesas, and low ridges.

South of the Jemez Mountains, between the Rio Grande on the west and the Galisteo Basin on the east, rise the fault-block Sandia Mountains, and to the south, separated by a low ridge, the Manzano Mountains. This series of fault-block detached ridges is continued south to El Paso in, from north to south, Los Pinos, Oscuros, San Adreas, Organs, and Franklin Mountains.

South of the Galisteo Basin and separated by a low divide is the land-locked Estancia Basin, the region of the famous salt lakes of New Mexico. To the south is the sharp escarpment of the Chupadero Mesa, a mesa of Carboniferous rocks, mainly sandstones. It is covered for a large part by sand dunes. To the southward the mesa declines to the Tularosa Basin, another land-locked area. In this basin are the immense gypsum deposits known as the White Sands. To the west of the Tularosa Basin are the sharp ridges of the Oscuro, San Andreas, and Organ Mountains, and to the east the bold escarpment face of the monoclinial Sacramento Mountains, high mountains which slope gradually east to the Pecos River. To the south of the Tularosa Basin and separated by a low ridge of

sand is the Hueco Basin in Texas, bordered on the south by the Rio Grande, on the west by the Franklin Mountains, and on the east by divisions of the Diablo Plateau, the lowlying Hueco and Finley Mountains. West of the Oscuro, San Andres, and Organ Mountains is the dreaded Jornada del Muerto Basin, bordered by the Rio Grande on the south, and separated from the Rio Grande on the west by the Caballos and Fray Cristobal Mountains.

Within New Mexico are found all of the life zones of North America(1) except the Tropical and lower division of the Lower Sonoran. A description of the zones in New Mexico follow:

1- Lower Sonoran- to 4500'<sup>+</sup> principally the desert basins and river valleys in the southern part of the state: Pecos Valley, mainly below Carlsbad, the Rio Grande Valley below Socorro, most of the Tularosa and Hueco Basins. The zone of mesquite, devils-claw, yucca, and a variety of the smaller mammals.

2- Upper Sonoran- 4500'<sup>+</sup> to 7500'<sup>+</sup>. Plains and foothill country; covers some two-thirds of the state; Chupadero Mesa, Estancio and Galisteo Basins, Santa Fe Plain, Rio Grande Valley above Socorro, etc. The zone of

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1. After the classification of Merriam, C. Hart, Life Zones and Crop Zones of the United States, Bull. 10, Biological Survey, Washington, 1898. Bailey, Vernon, Life Zones and Crop Zones of New Mexico, North American Fauna no. 35, Bur. Biol. Sur., United States Department of Agriculture Washington, 1913.



pinyon, juniper, sage, grasses, etc.

3- Transition- 7500'± to 9000'±. Generally the middle slopes of the higher mountains: Sacramento Mountain mass, Manzano, Sandia, Nacimiento, Jemez, Sangre de Cristo Mountains. The zone of yellow pine and Douglas Fir, large game; short growing season.

4- Canadian- 9000'± to 11500'±. Higher slopes of mountains: Sacramento Mountain mass, Sandia, Manzano, Jemez, Sangre de Cristo Mountains. The zone spruce and fir; dense, humid forests.

5- Hudsonian- Narrow belt of scrubby timberline trees around the high peaks in the northern part of the state: Sangre de Cristo Mountains. The zone of dwarf spruces.

6- Arctic-Alpine- Above the timberline; analogous to the Arctic Tundra. High peaks of the Sangre de Cristo Mountains.

The zonal altitude limits given above are general; actually they may vary a thousand feet or more, depending on soil, exposure, and moisture. Pueblo settlements are found only in the first three zones, perhaps overlapping a bit into the fourth.

The rainfall of the state varies considerably. As a general statement, in the southwest the distribution of rainfall correlates, roughly, with the distribution of elevation and life zones. In the area we are considering in this paper the mean annual rainfall varies

from some 9 to 14 inches in the southern desert basins and river valleys, to some 18 to 25 inches in the Transition Zone. The highest station of precipitation record is that of the Anchor Mine (10,600 feet) in the northern Sangre de Cristo Mountains, and carries a mean annual value of 35.82 inches. The annual distribution is one with a summer maximum coming in the form of intense local showers of short duration(2).

Viewing the natural geography in terms of human distribution, it is seen that the aboriginal sites are found widely distributed along the river valleys, on the lower slopes of the higher mountains, and in the upland and semi-arid desert basins; in the Lower Sonoran, Upper Sonoran, and Transition, life-zones. It is not surprising to find that in general the distribution of Pueblo and European communities is in high correlation. The size of modern communities is largely controlled by transportation facilities and industrial development, and the larger settlements are now found in the lowlands, principally along river valleys. In former days the factor was less limiting, and distribution was more uniform. Arable land, enough water within a reasonable distance to supply personal needs, enough rain and a growing season long enough to permit corn to mature, and in some cases

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2. The above weather data is condensed from "Climatological Data" of the United States Weather Bureau, sections 2, 5, and 6, to and including 1920.

an easily defended natural location was all the Pueblo people asked for a village site.

## Chapter III

HISTORY AND LITERATURE

It is not my intention to enter into an exhaustive survey and evaluation of the literature of the Rio Grande. Such an attempt would in itself require a fair size book. The history of the subject is, however, truly a romance, and a résumé of the chief steps in its progress is of some value here.

Rio Grande Pueblo archaeology as an organized subject is scarcely fifty years old, but descriptions of ruins, towns now in ruins, and their people date from the earliest European exploration. The first white party to enter the country of the Rio Grande Pueblos was that of Francisco Vasquez Coronado. This expedition, one of the most pretentious ever outfitted in New Spain, entered the Southwest by way of Sonora and southern Arizona in 1540, and until 1542 explored parts of what are now Arizona, New Mexico, Texas, Oklahoma, and Kansas. In New Mexico, Coronado's men explored from the Zuni Country to the plains and from Taos to the regions of San Marcial and Roswell in the south. The principal account of the expedition was written by Pedro de Castañeda some time after the events he relates. The Coronado expedition is treated in detail, including original texts and translations,

by Winship (1).

After Coronado's return to Mexico, further exploration in New Mexico was neglected until 1580 when a party led by Chamuscado and Fray Rodriguez (2) rediscovered the Rio Grande Pueblos by a route north from Chihuahua. They were followed by a thorough reconnaissance party under Antonio de Espejo, 1582-83, (3) and later by Castaño de Sosa, 1590 (4). The colonization of New Mexico was effected by Juan de Oñate in 1598, and from this date on, excepting a brief set of years from 1680 to 1693 when the Spaniards were temporarily driven south to El Paso (the Pueblo Rebellion), New Mexico has been continuously occupied by Europeans. The Oñate documents are bulky and important. After 1598, the other principal papers of Spanish occupancy are those of Villagrà (1610), Zárate-Salmerón (1626), Benevides (1630), and Vetancourt (1697) (5).

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1. Winship, G. P., *The Coronado Expedition, 1540-1542*, 14th An. Rep. of the Bur. Amer. Ethn., pt 1, Washington, 1896.
  2. See accounts of Bustamante and Barrado. Bolton, Herbert E., *Spanish Exploration in the Southwest, 1542-1706*, New York, 1925. The Gallegos Relation, Hammond, George P., and Rey, Agapito, *The Gallegos Relation of the Rodriguez Expedition to New Mexico*, Santa Fe, 1927.
  3. Bolton, op. cit.; Hammond, George P., and Rey, Agapito, *Expedition into New Mexico made by Antonio de Espejo, 1582-83, as Revealed in the Journal of Diego Perez de Lúxan, a Member of the Party*. Quivera Society Publications, vol. 1, Los Angeles, 1929.
  4. Hull, Dorothy, *Castano de Sosa's Expedition to New Mexico in 1590*, *Old Santa Fe Magazine*, vol III, no 12, Santa Fe, 1916.
  5. Oñate: Bolton, op. cit.  
Villagrà: Republished Mexico by Gonzales Obregon in 1900. To be translated and published by the Quivera Society.  
Zárate-Salmerón: *Documentos para la Historia de Mexico*,

Perhaps the most important archaeological datum that is derived from the Spanish documents is that from the time of first Spaniards no Pueblo settlements were found farther south than San Marcial. The other material of main archaeological significance may be summarized: interesting, if often inadequate, descriptions of customs and towns. Distances and directions are often reported inaccurately, and numbers of towns and their populations are almost always exaggerated. From an analyses of documents and a study of ruins, the villages visited and described by the Spaniards may be ascertained with accuracy.

One of the first Anglo descriptions of the ruins is that of Major W. H. Emory and Party(6), published in 1848. The subjects were several large ruins of historic time which were then in the process of decay: Pecos, Abo, and Quarai. More detailed descriptions followed in the works of Cope and Loew, 1875(7), and it may be said

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3a serie, Mexico, 1856. Translation by Lummis, Charles F., Land Of Sunshine, vol. XI, 1899, vol. XII, 1900, Los Angeles.

Benevides: The Memorial of Fray Alonso de Benevides, 1630, with translation by Ayer, Mrs. Edward E., and notes by Hodge, F. W., Privately printed, Chicago, 1916.

Vetancurt: Chronica de la Provincia del Santo Evangelio; Menologio Franciscano; in Teatro Mexicano, Mexico, 1697.

6. Emory, W.H. Notes of a Military Reconnaissance from Fort Leavenworth, in Missouri, to San Diego, in California, etc. 30th Congress, 1st Session, Senate Executive Document 7 Washington, 1848.

7. Cope, E.D., Report on the Remains of Population Observed on and near the Eocene Plateau of Northwestern New Mexico. Loew, O., Report on the Ruins of New Mexico. Annual Report of the Geographical Explorations and Surveys West of the 100 Meridian. Washington, 1875.

that these two were the first men to describe New Mexico ruins as archaeological problems. In 1881 was published the first paper of A. F. Bandelier(8), and this date stands as the beginning of organized archaeology of the Rio Grande Pueblos.

Bandelier worked from a detailed knowledge of the Spanish documents, visiting nearly every part of the north section of the Rio Grande Pueblo area, identifying the pueblos of historic age, describing and classifying. He started from the modern and worked back; because of his splendid grounding in history, this was his principal approach. He dispelled much of the mysticism and "foolfarav" which had grown up around the ruins and brought their study to a sane plane. His "Final Report .."(9), published in 1890 and 1892, organized much of Southwestern archaeology for the first time. Because of his intimate knowledge of the Rio Grande culture, his chapters on that region are still guides. I doubt if anyone should object to calling him "The Father of Southwestern Archaeology".

Following Bandelier, the next important figure is that of Edgar L. Hewett, who early made a survey of the principal ruins of the Jemez Mountains(10), and later

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8. Bandelier, A.F., Historical Introduction to Studies among the Sedentary Indians of New Mexico. Report on the Ruins of the Pueblo of Pecos. Papers of the Archaeological Institute of America. American Series, No. I, Boston 1881.
  9. Idem, Final Report of Investigations among the Indians of the Southwestern United States, Parts I and II, Papers of the Archaeological Institute of America. American Series, Nos. 3 and 4. Cambridge, 1890 and 1892, respectively.
  10. Hewett, E. L., Antiquities of the Jemez Plateau, New Mexico. Bull. 32, Bur. Amer. Ethn., Washington, 1906.

carried on excavations in the same locality(11). Southwestern Archaeology owes Dr. Hewett a debt of gratitude for both publicising and protecting New Mexican ruins. He was one of the framers of the Federal bill protecting archaeological remains. Toward the last of the first decade of the present century, the School of American Archaeology, now the School of American Research, of the Archaeological Institute of America, was organized, and Hewett placed at its head, which position he holds today. This institution under Hewett has grown to a place of importance with the development of, and amalgamation with, the Museum of New Mexico and the Department of Archaeology of the University of New Mexico.

The year 1915 marks an important point in New Mexican archaeology. It was this year that saw the publication of A. V. Kidder's "The Pottery of the Pajarito Plateau..."(12)- the first attempt to define New Mexican pottery types as indications of the smaller cultural phases. It

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11. Idem, Archaeology of the Rio Grande Valley (Excavations at Fuye) Reprinted from "Out West", Los Angeles, as Papers of the School of American Archaeology, No. 4, 1907.  
 Idem, The Excavations at Tyuonyi, New Mexico, in 1908. Archaeological Institute of America. Papers of the School of American Archaeology, No.5.,1909. Also in American Anthropologist, n.s., vol.II.no.3,Lancaster,1909.  
 Idem, The Excavations at El Rito de los Frijoles in 1909. Archaeological Institute of America. Papers of the School of American Archaeology, No.10,1909. Also in American Anthropologist, n.s.,vol.II, no.4, Lancaster,1909.
12. Kidder, A.V., The Pottery of the Pajarito Plateau and Some Adjacent Regions in New Mexico. Memoirs of the American Anthropological Association, vol.2, part 5, Lancaster, 1915.



should be inserted that Bandelier had noted that black-on-white pottery was associated with small ruins presumably older than large ones extending into historic times that contained glazed pottery, but Kidder's attempt was the first serious study of the problem in detail.

The next year saw another important publication, Nelson's "The Chronology of the Tano Ruins"(13). Nelson, working in historic and prehistoric sites in the Galisteo Basin, brought a most important field-technique to Southwestern archaeology. He was the first to make use of stratigraphic methods in refuse mounds. Starting with the historic, he worked back by means of stratified refuse pottery deposits, noting changes in pottery styles. He succeeded in determining a series of pottery types of time values, which, incidentally, corroborated the results Kidder had inferred the year before. Nelson's is one of the most important contributions ever made to Southwestern archaeology.

In 1915, the Phillips Academy of Andover, Massachusetts, undertook, under the direction of Dr. Kidder, the largest scaled excavation and research that the Rio Grande has experienced. This work was carried on until 1925, during which time six seasons were spent on the Pueblo of Pecos, and a little over one season on smaller ruins in the vicinity. The first important results were the corroboration and amp-

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13. Nelson, N. C., The Chronology of the Tano Ruins, New Mexico. American Anthropologist, n.s., vol.18, no.2. Lancaster, 1916.

lification of Nelson's work in stratigraphy(14). At this time Kidder established the series of pottery types for the northern Rio Grande which is in use at the present time: basic black-on-white, six stages of glazed wares, overlying dull-paint polychrome wares. The final papers of the expedition are in process of publication(15). The execution of the project has been a thoroughly admirable exhibition of archaeological procedure. Every important angle that was apparent has been considered in a thorough way by specialists most capable to do so. Both the results and the example of leadership in Dr. Kidder will be of far- and long-reaching benefit to the subject.

In 1925 Dr. Kidder invited the principal investigators in Southwestern archaeology to an informal conference at Pecos Pueblo in an attempt to clarify and reach some agreement on classifications and nomenclature. These conferences have held every two years since the first one, the scene of the last (1931) having been changed from Pecos to the Laboratory of Anthropology at Santa Fe. It was at the

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14. Kidder, M.A., and A.V., Notes on the Pottery of Pecos. American Anthropologist, n.s., vol. 19, no. 3 Lancaster, 1917.
15. The papers published to date are:
- 1- Kidder, A.V., Introduction to the Study of Southwestern Archaeology. New Haven, 1924.
  - 2- Guthe, C.E., Pueblo Pottery Making. New Haven, 1925.
  - 3- Parsons, E.C., The Pueblo of Jemez. New Haven, 1925.
  - 4- Hooton, E.A., The Indians of Pecos. New Haven, 1930.
  - 5- Kidder, A.V., and Amsden, Charles, The Pottery of Pecos, I, The Dull-Paint Wares. New Haven, 1931.
  - 6- Kidder, A.V., The Artifacts of Pecos. New Haven, 1932.

conference of 1927 that the much used "Pecos Classification" of Pueblo culture periods was formulated. This is not the place to attempt a criticism of the result; suffice it to say that at the time little was known of the southern Southwestern fields and the classification was based mainly on evidence from the San Juan and related cultures. As a result it has been found inadequate for the entire field, but is still widely used for the north.

In 1929 a new research institution was formed in Santa Fe, The Laboratory of Anthropology, and Jesse L. Nusbaum was elected its director. It is devoted to both research on its own account and to the furthering of cooperation of various institutions in the field.

In recent years the two anthropological institutions now located in the Rio Grande field, the Laboratory of Anthropology and the School of American Research (the latter which with the Museum of New Mexico and University of New Mexico form virtually one institution), have begun exhaustive surface surveys. The survey of the former institution is under H. B. Mera; of the latter, under Reginald G. Fisher. Fisher's is aimed to be "a reservoir of archaeological facts", a descriptive catalog of sites with location maps, plane-table plans if necessary, bibliography, notes on the amount of excavation and pot-hunting, ownership data, etc. Two papers have been published; one explains the plan and aims of the survey, the other is a result(16).

Mera's tends more to original research. His plan in outline is to plane-table sites, locate them in townships and drainages which are also to be eventually mapped if necessary, and make extensive sherd collections. Field and laboratory observations are made toward a view of deliniating cultural districts and stages, and recognizing new cultural criteria. To date, the publications are a few short papers on new pottery types (17). The maps and field-collections of both institutions are of access to any investigator who would like to use them.

And now we come to the development of the southern Rio Grande Pueblo field, a new field, virtually untouched. For a long time investigators in the northern field felt that to all extents and purposes the Rio Grande Pueblo field ended on the south in the environs of San Marcial. But scattered in the towns south of that point amateurs were making collections, and probably the most influential of these were Mr. and Mrs. R. B. Alves and Col. Martin L. Crimmins, of El Paso. These named people tried to interest the pro-

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16. Fisher, R.G., The Archaeological Survey of the Pueblo Plateau. Univ. of New Mexico Bull. 177. Archaeological Series, vol. 1, no. 1. Albuquerque, 1930.  
 Idem, Santa Fe Sub-Quadrangle A. Univ. of New Mexico Bull. 195. Survey Series, vol.1, no.1. Albuquerque, 1931
17. The Laboratory of Anthropology Archaeological Survey Technical Series Bulletins:  
 1- Mera, H.P., Chupadero Black-on-White. Santa Fe, 1931.  
 2- Mera, H.P., and Stallings, V.S., Jr. Lincoln Black-on-Red. Santa Fe. 1931.  
 3- Stallings, V.S., Jr., El Paso Polychrome, Santa Fe, 1931.  
 4- Mera, H.P., Wares Ancestral to Teva Polychrome. Santa Fe, 1932.

professionals and, together with other sane enthusiasts, organized the El Paso Archaeological Society. In 1925, they were finally successful, with the aid of the Peabody Museum of Harvard University, in obtaining Mr. and Mrs. C. B. Cosgrove to undertake a reconnaissance of the district and to excavate a portion of a ruin at Three Rivers, New Mexico. Unfortunately the Cosgrove's report, due to lack of funds, was not published, and Southwestern archaeologists as a whole were ignorant of the data obtained. However other investigators came in for brief stays: Chapman(1926), Harrington(1928), and Carry(1931)(18). The School of American Research and University of Kansas began joint excavation in the field and preliminary notes on the results have been published(19). In 1929 the present writer made a brief reconnaissance, described the native pottery types, and recorded intrusive ones(20). Two other papers on the pottery(one in collaboration with H. P. Mera) were written in 1931.(21).

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18. Chapman, K.M., An Archaeological Site in the Jornada del Muerto, New Mexico. *El Palacio*, vol. 20, no. 6, Santa Fe, 1926.  
 Harrington, M.R., A New Archaeological Field in Texas. *Museum of the American Indian, Heye Foundation, Indian Notes*, vol. 5, no. 3, New York, 1928.  
 Carry, Henry A., An Analysis of Northwestern Chihuahua Culture. *American Anthropologist, n.s.*, vol. 33, no. 3, Menasha, Wisconsin, 1931.
19. Bradfield, Wesley, Excavation in the Sacramentos. *El Palacio*, vol. 37, nos. 1-7, Santa Fe, 1929.  
 Stubbs, Stanley, Preliminary Report of Excavations near La Luz, and Alamogordo, New Mexico. *El Palacio*, vol. 29, no. 1, Santa Fe, 1930.
20. Stallings, W.S., jr., Notes on the Pueblo Culture in South-Central New Mexico and in the vicinity of El Paso, Texas. *American Anthropologist, n.s.*, vol. 34, no. 1, Menasha, 1932.
21. Op. cit.

Amateurs have also brought to light evidences of a New Cave Dweller culture. Roberts has considered some of this material in a short paper(22). The Cosgroves have worked in the caves near El Paso and H. T. Mera and E. B. Howard (University of Pennsylvania Museum) have worked farther east, in the Big Bend region. Formal papers on this work of the latter three have not been published.

This chapter has done little more than touch the high spots in the development of Rio Grande Pueblo archaeology. Many other important pieces of work have been turned out such as that of Jeancon in the Chama and Taos regions and that of Nelson's in the description of the ruins of the Galisteo Basin(23). The mass of purely ethnological material, necessary to the proper interpretation of archaeological material, has been neglected, as has been the mass of small archaeological papers, on details and generalities, which help compose our knowledge.

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22. Roberts, F. H. H., Jr., Recent Archaeological Developments in the Vicinity of El Paso, Texas. Smith, Misc. Coll. vol. 81, no. 7, Washington, 1929.
23. Jeancon, J. A., Excavations in the Chama Valley, New Mexico. Bull. 81, Bur. Amer. Ethn., Washington, 1923. Idem, Archaeological Investigations in the Taos Valley, New Mexico, during 1920. Smith. Misc. Coll., vol 81, no. 12, Washington, 1929.
- Nelson, N. C., Pueblo Ruins of the Galisteo Basin, New Mexico. Anthro. Papers American Museum of Natural History, vol. XV, no. 1, New York, 1914.

## Chapter IV

THE EARLY PUEBLO AND TRANSITION PERIODS.

Early Pueblo Period- As stated in the introduction, no evidences of the "San Juan" Cave Dweller culture have been found in the Rio Grande, and only a very little evidence of the Early Pueblo Period has been reported. In the past, archaeological attention has been given to the more imposing remains of later times which dot the country, and the early phases of Rio Grande culture are virtually unknown. The entire evidence of the Early Pueblo Period in the Rio Grande consists of surface sherds from a limited number of sites and two pieces of pottery in the Laboratory of Anthropology from the Jemez Mountains, the exact provenience of which is not known. The location of the known sites are: one in the vicinity of Santa Fe, a small number in the Tesuque Valley (northwest of Santa Fe), and a double occupation site in the eastern foothills of the Manzano Mountains(1). Since none of the sites have been excavated, the evidence, as stated, is entirely that of surface pottery -- the crude, early both narrow and broad line black-on-white typical of the period in the San Juan.

In the "Gallinas" country of the northern

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1. I have seen the site in the Manzano Mountains. Other data from sherd collections in the Laboratory of Anthropology.

Chama drainage (plate 1), isolated pit-houses occur, but the pottery is typologically later -- crude and unslipped, but with the more complex designs of later periods. In this region are also found isolated circular semi-subterranean, semi-surface structures on small hills (plate 11). The pottery is the same type as that of the pit-houses. One example in which test-pits were sunk (plate 12) disclosed a pit three feet deep and some twelve feet across, with a buttressed wall rising about three and a half feet high above the surface. At this time it seems probable that these two types of structures in the "Gallinas" region represent late survivals of the Early Pueblo Period.

Transition Period- Small-houses are scattered abundantly all over the northern Rio Grande area. Where adobe architecture, which was most prevalent in the southern part of the area, was the style, usually only surface sherds remain. Evidences of adobe houses, where discernable, are too incomplete to give any certain information. In the northern parts, the houses consist of from three and four to twenty or thirty rooms, which were arranged in long blocs, probably not over one story high, and may or may not have contained kivas. Probably they did not; they are not evident on the surface. None of the villages of this stage have been excavated. The pottery is black-on-white and corrugated, with a small percentage of Little Colorado Black-on-Red. Since the pottery is practically the same as that



of the first part of the following period, it will be considered in more detail later.

Just whether or how this period is represented in the southern Rio Grande Pueblo area is not known. The excavations to date belong to the next period.

## Chapter V

THE EARLY PHASE OF THE LATE PUEBLO PERIOD.

Architecture- In the north, the stage of small-houses grades into the early structures of the Late Pueblo Period. The villages, usually small, but larger than the previous type, were built around a plaza and terraced to a height of at least two stories. They contain kivas, usually in the plaza. A few ruins, like the Pot Creek Ruin in the Taos Valley, are as large as the sites of later times, but these are exceptional.

Only two kivas of these early Late Pueblo Villages have been excavated: One by Kidder in the old village under the Pueblo of Pecos, and one by Jeancon in the Taos Valley(1). Kidder describes the features of the Pecos specimen as follows: central fire-pit, ventilator opening to the east, and no recesses or pilasters. Jeancon's is the same general type, but slightly more complex.

Both stone and adobe was used in this period, adobe, most commonly in the river-valleys, stone is

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1. Kidder, A. V., Introduction to the study of Southwestern Archaeology, New Haven, 1924, p.86.

Jeancon, J.A., Archaeological Investigations in the Taos Valley, New Mexico, During 1920. Smith Misc. Coll. vol. 81., no. 12, Washington, 1929.

more characteristic of the uplands. Only two excavated villages have been described: the Forked Lightning ruin near the Pueblo of Pecos, and the ruin at Llano in the Taos Valley(2).

The village excavated by Kidder, located about a half-mile southwest, of the ruins of Pecos Pueblo on the upper Pecos drainage, is apparently a very late example of the phase. No walls were evident on the surface, but after excavation, forty rooms were laid bare; thirty-five of adobe and five of rock masonry. The adobe walls were constructed horizontal courses. The ground-plan was extremely irregular, and the village evidently grew by accretion. No kivas, but two roughly square surface ceremonial rooms, with the exception of the ceremonial features, like the secular rooms, were found. These had circular fire-pits, deflectors, and eastward opening ventilating shafts.

The example of Jeancon is, apparently from surface observations of other sites, more typical of the phase. The ground plan is given in figure 1. The village is of adobe, and consists of eighteen or more rooms arranged around a plaza in which is a kiva. The southeast rooms are irregular in outline and poorly planned; the others seem to have been built with some semblance of system. There is only one story. Six of the rooms, all of those on the

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2. Kidder, A.V., Early Pecos Ruins on the Forked Lightning Ranch. Papers of School of American Research. Santa Fe, 1926.

Jeancon, J. A., loc. cit.

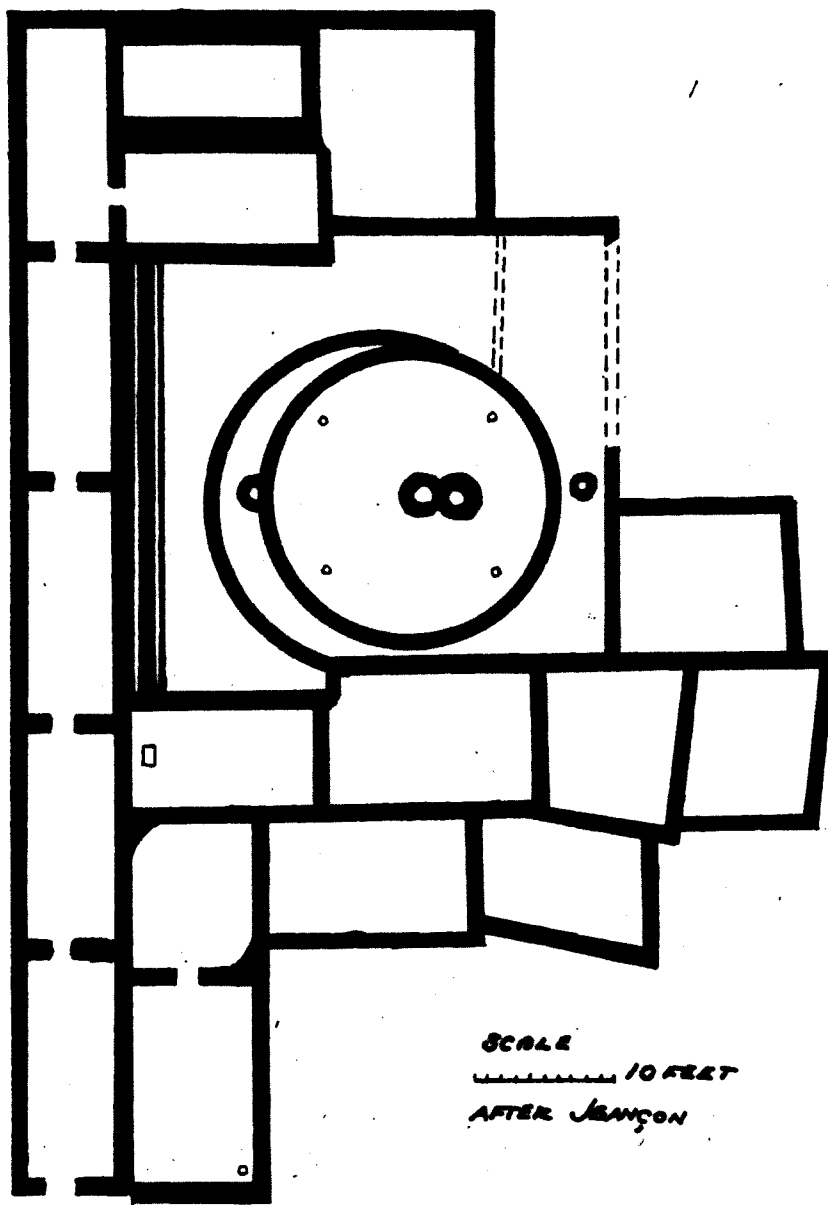


FIGURE 1 PLAN OF RUIN AT LLANO  
EARLY PHASE OF LATE PUEBLO PERIOD

west side, have simple doorways; the others were apparently entered through hatchways in the roof. The roof is supported by a post in the center of the room. The kiwa has two ventilators, one on the east and the other on the west, and a double fire-pit separated by the deflector, or altar, with the principal fire-pit about in the center of the room, and the other to the east. Four posts supported the roof. Evidently the kiwa construction was poorly planned; an arc which joined the curve of the kiwa wall was found on the west side. Apparently, either the size of the kiwa was changed before having been completed, or the different arcs in the course of construction failed to satisfactorily meet.

The ruins of this period on the Pajarito Plateau have a more uniform outline; usually well-planned blocs of rooms surround the plaza on four sides. The walls are of tuff or lava blocks laid with a little plaster and sometimes chinked with spalls. Plate 13 are views of the best-preserved ruin of this phase on the Pajarito Plateau. It is on a mesa point above Water Canyon.

In the south, in the Tularosa-Hueco Basins, Stubbs(3) excavated in two sites, one which was in the form of a "C", and another which was roughly a square with an enclosed plaza. The first was estimated to con-

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3. Stubbs, Stanley, Preliminary Report of Excavations near La Luz and Alamogordo, New Mexico, El Palacio, vol. 29, No. 1, Santa Fe, 1930.

tain between seventy-five and one hundred rooms, and the second, between fifty and sixty. Bradfield(4) excavated in a site which he found built of blocs of rooms. These blocs had long axes and were not with definite arrangement to one another.

The present writer excavated three rooms near Hotwells Ranch (Plates 14,15,16), but the plan of the ruin of which they were parts was not determined.

The details of construction in this southern section may be summarized: adobe walls averaging ten to eighteen inches in thickness and extending some seven to twelve inches below the floor level, rooms four by six feet to twenty-four by thirty feet or larger, variously arranged post-holes three to four feet deep and bedded with a single stone slab or a number of small stones, one or more fire-pits in nearly every room, and, with the exception of one room at Hotwells, entrances through the roofs. No kivas have been found.

Pottery- The pottery complex occurring in sites of this phase and the previous period in the Rio Grande is one of black-on-white and corrugated wares with a small percentage of Little Colorado Black-on-Red and Polychrome.

The black-on-white situation is complex. Investigators have been accustomed to refer to "Rio Grande Black-on-white" as a generalize type, a crude reminder of

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4. Bradfield, Wesley, Excavations in the Sacramentos, El Palacio, vol. 37, No. 1-7, Santa Fe, 1929.

San Juan wares and difficult to describe. Particularly in the northern region has this been the case. Amsden, who has done the most thorough work on northern Rio Grande black-on-whites to date(5), found it soul-racking to try and distinguish types in the ware at Pecos. He erected a number of divisions, but did not recommend them as entirely satisfactory. However, at the present time Mera believes that he can distinguish eight or more types which grade into one another, and is making an attempt to establish criteria for their recognition. He has been able to distinguish these types because of an extensive surface survey. In the southern and middle parts of the area, the black-on-white ware has been defined and established: Chupadero Black-on-White(6). The known range of towns producing this ware is approximately from the southern part of the Estancia Basin south into Chihuahua and from the Rio Grande to the Pecos River. Farther south, in the northern Sacramento Mountains and in the northern part of the Tularosa Basin, two other pottery types were developed, Three Rivers Red-on-Terracotta and Lincoln Black-on-Red(7). In this same locality and south to Villa Ahumada, a crude red-and-black-on-brown ware, El Paso Polychrome, becomes the

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5. Kidder, A.V., and Amsden, C.A., The Pottery of Pecos, vol. I, The Dull-Paint Wares, New Haven, 1931.

6. Mera, H.P., Chupadero Black-on-White. Laboratory of Anthropology Archaeological Survey Technical Series Bulletin 1, Santa Fe, 1931.

7. Both wares described in: Mera, H.P., and Stallings, W.S., Jr., Lincoln Black-on-Red. Laboratory of Anthropology Arch. Sur. Tech. Sur. Bull. 1, Santa Fe, 1931.

principal ware to exceed Chupadero Black-on-White in amount.

During the last part of this phase, in the middle belt of the area, more precisely from the regions of Albuquerque to Socorro and west to the Pecos River, Rio Grande Glaze I -red- the first of the Rio Grande glazes -- appears soon to usurp the supremacy of black-on-white. This marks the end of the early phase of the Late Pueblo Period and the beginning of the late phase.

The intrusive wares of this period in the north are Mimbres Mesa Verde, and Chaco Black-on-Whites, and Little Colorado Black-on-Red and Polychrome. In the south, Mimbres Black-on-White is native in a few sites along the Rio Grande, and intrusive elsewhere in the region. The other intrusives in the south are Little Colorado Black-on-Red and Polychrome, Chihuahua Polychrome, and Indented and Incised, Middle Gila Polychrome, and a ware similar to early Zuñi Glaze. These intrusives are quite abundant at most southern sites, Chihuahua Polychrome ranking the list in abundance.

Other Material Culture- The stone and bone work of the northern part of the area is little known. What is known shows them to be poor. Both flanged and flat metates occur. Axes and mauls are crudely chipped and smoothed, and are grooved completely around. The finely-polished "screw-groove" axe may have had its beginning during this period, but it has only been found, as far as I know, in



later sites. Chipped projectile points and knives are average. Bone awls and various implements of antler were made. Beads and pendants are mainly in stone, but there is some shell. Sherds are marked with impressions of coiled-basketry.

In the south the stone-work was superior. Metates are flat and grooved. Crude and well-finished axes, three-quarter- and full-grooved, are found. Arrow-shaft straightners are abundant, and are often works of art, with raised grooves and raised or incised zoomorphic or geometric designs. Excellent small arrow-points are found. Beads of stone and shell are abundant, and beautiful pendants in life-forms are characteristic. For food supply Stubbs (8) found evidence of corn, mesquite beans, squash, melons, pecans, pinyon nuts, deer, rabbits, birds, bird's-eggs, and mescal.

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8. Stubbs, loc. cit.

## Chapter VI.

THE LATE PHASE OF THE LATE PUEBLO PERIOD.

By the end of the early phase of the Late Pueblo Period, the region south of San Marcial was abandoned by Pueblo people, and Rio Grande culture was, from then on, confined to the northern area. In the north the scene of widely scattered small villages changed to one of a smaller number of large villages. By the arrival of Coronado in 1540 the population was on the decrease, and since shortly before that date the number of towns has dwindled from several hundred to sixteen. The last town to fall into disuse was Pecos, which was finally abandoned in 1838.

Architecture- From the preceding phase the towns increased considerably in size. Some ruins, like the North House at Pecos (figure 2) and Tyuonyi in the Frijoles Canyon of the Pajarito Plateau, are great quadrangular or circular blocs of rooms around a plaza in which are several kivas. The majority of the towns of this phase are less compact: long room-blocs joined to one another at varying angles to form poorly shaped plazas. These sites usually have one or more main plazas enclosed on four sides, and several other plazas enclosed on two or more sides. Blocs of rooms were added as needed, and new plazas in time thus formed. Kivas occur both in and out of the plazas. In sites that were occupied for centuries, the ruins often cover a large area:



FIGURE. 2

PLAN OF THE PECOS RUINS

new blocs were built, while others were falling in ruins. It is estimated that the actual space occupied by the rooms at San Cristobal is some 20,000 square feet.

Both stone and adobe were used, adobe mainly along the Rio Grande and Chama River. Quite often both adobe and stone walls were built in one site (plate 17).

Beginning about 1617 the Spaniards began building massive mission churches (plate 19) in the principal Pueblos, but this added cultural influence did not alter the arrangement of the native buildings. Sometime in the early Eighteenth Century, probably because of Hispanic protection, the uncompact towns of small, scattered house groups composed of a few rooms, the type typical of the Pueblos today, was developed. Taos, on the northern border, and Pecos on the eastern, both exposed to attacks of the Plains tribes, retained a more compact, communal character.

Typical details of architecture in the secular rooms of the late phase are the storage bins in the corners of rooms (plate 22). Small holes, six inches or more in diameter, through walls of adjoining rooms, are common. Entrance was usually through hatchways in the roof, and doorways normally open only between rooms, and not to the outside.

On the Galisteo Basin and south to Tabira (Gran Quivéca) on the Chupadera Mesa, the walls are of well shaped, and well laid limestone blocks covered with plaster.

At Pecos and Unshagi the masonry is poor: stone of different sizes laid with much adobe mortar. On the Pajarito Plateau, tuff is used and the walls are of good masonry. Adobe walls are of a mixture of argillaceous earth, ashes, and water, formed into roughly shaped balls and blocks, and packed together while still moist.

In the Pajarito Plateau, minor villages were built along the base of canyon walls, and rooms were dug out in the soft tuff in the rear (plates 23, 24, 25).

The average kiva of the late phase is about twenty feet in diameter, but larger ones are common. One measured fifty-two feet across. The characteristic features are practically the same as those of the preceding phase: Single or double fire-pits, the latter separated by a thick deflector, or altar (plate 20), eastward opening ventilators through the walls near the floor, and no pilasters or banquettes. The sipapu is present in some and absent in others.

Ceremonial rooms in the secular room groups, with fire-pits, deflector, and ventilator, are common (plate 21).

Pottery- In the following discussion of pottery, the terms north and south are again used, and it is to be pointed out that this is for easy reference to general regions in the northern Rio Grande area, north and south of the Pajarito Plateau, and that the term "south" does not here refer to the region below San Marcial which

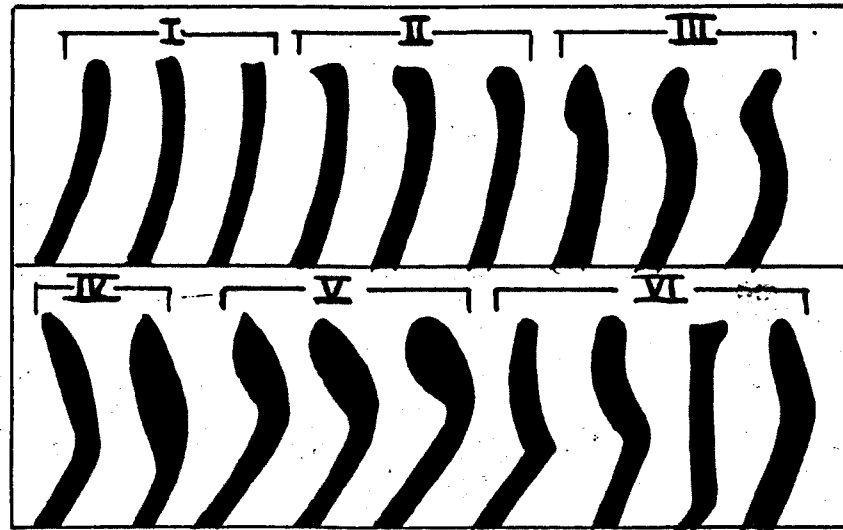
had been abandoned at the close of the previous phase.

In the south the glaze wares were developed; in the north the "Biscuit" wares, with the Pajarito Plateau as a point of fusion. The wares overlap in varying quantities. On the western side of the Jemez Mountains black-on-white continued to be made until approximately 1700. From San Marcial north to the Manzano Mountains, Chupadero Black-on-White was continued along with the glazes. Elsewhere black-on-white died out with the appearance and development of Glaze I.

The glaze wares were apparently developed due to a stimulus of Little Colorado Polychrome, but the designs were derived and developed principally from the black-on-white wares. Kidder has defined six glaze types at Pecos(1), and these types are more or less constant over the entire area. The available material is all practically sherds, and the identification of types is based mainly on the shapes of bowl rims (Figure 3). Glaze I red has a black glaze design on a red slip; Glaze I yellow, a black glaze on a yellow slip, with the occasional use of flat red "fill" in glaze outlined designs. Glaze II shows a further development of the polychrome combinations, both on red and yellow slips, as does Glaze III. Glaze IV, V, and VI degenerate and become increasingly poor and messy.

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1. Kidder, M.A. and A.V. notes on the Pottery of Pecos, American Anthropologist, n.s., vol. 19. no.3, Lancaster 1917.



AFTER KIDDER.

FIGURE 3 BOWL - RIM SECTIONS OF THE GLAZES AT PECOS

In the north, during glaze times, "Biscuit" wares(2) were developed and an incised ware(3) became popular. The Biscuit wares are characterized by a flat black paint on a grey slip, and light grey paste with a large percentage of tuff temper. Bowls are the only forms of the early phase, Biscuit A, and they have a slip only on the interior, the forms of the later phase, Biscuit B, are both bowls and ollas, the former with a slip on both the interior and exterior.

About 1700 the dull-paint polychrome wares came into existence, and the glaze and Biscuit wares died out. These new wares are two, Teva Polychrome and Tsia Polychrome (4). Teva Polychrome was apparently derived from Biscuit through short transitional stages(4), and Tsia Polychrome is perhaps a development from Glaze VI. Teva Polychrome was the most popular of the two, and is still made in the Pueblos of Tesuque, Santo Domingo, Cochiti, and San Ildefonso. Tsia Polychrome is today made only in the Pueblo of Tsia. The color combination of Teva Polychrome is black on a white slip on a red base; of Tsia Polychrome, black and red on an orange or yellow base.

Intrusive wares associated with the glaze and biscuit wares are from the Little Colorado.

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2. Named by Kidder, 1915, op.cit. Pecos material fully described by Kidder; Kidder, A.V. and Amsden, C.A. The Pottery of Pecos, Volume I, New Haven, 1931.
  3. Pitsuvi'i Incised. Mera, Wares Ancestral to Teva Polychrome. Lab. of Anthro. Arch. Sur. Tech. Ser. Bull. 4, 1932
  4. Mera, Ibid.



These are a Fourmile type polychrome, and early Hopi wares, Jeddito Black-on-Yellow and Sikyatki Polychrome.

Other Material Culture- By the time of the Late phase in the Rio Grande, the material culture had become very complex. Kidder has recently made a start toward a classification of objects other than pottery and house-types(5). The typical material of the region may be briefly described as follows. There is an abundance and variety of stone projectile points, knives, and scrapers. Metates are flat; mauls are full-grooved; and the typical axes, for which fibrolite was the favorite material, are spirally-grooved. Pipes are of stone and clay, the latter the far more abundant and the most artistic, they are ornately decorated in relief and in carving. Of bone and antler, there are usual types of awls, needles, and flakers. Kidder found a great number of flageolets made from bones of turkeys, eagles, and other large birds. Twilled and coiled basketry is present. Jewelry consists of beads and pendants of stone, shell, and bone.

Since 1600 or so the presence of European culture has practically extinguished the Pueblo stone industry and has altered considerably, of course, the other crafts. Slowly but surely the material culture and social culture of the native Pueblos are dying.

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5. Kidder, A.V. The Artifacts of Pecos, New Haven. 1932.

## Chapter VII.

CONCLUSIONS.

The Pueblo culture of the Rio Grande Sub-area north of San Marcial is basically derived from the San Juan. The earliest definite remains are a few early Pueblo Sites located in the northwestern section, and peripheral to the culture center in the San Juan<sup>N</sup>. The evidence is surface pottery definitely of the San Juan Early Pueblo Culture. During the Transition Period the small-houses spread over the entire northern section. Presumably they were developed from the previous period, probably influenced by cultural vares from the San Juan. The pottery was black-on-white, reminiscent of San Juan vares but indentifiable with none of them. Upper Gila character is also suggested.

The Transition stage grades into the Early Phase of the Late Pueblo Period, and Kivas are first noted. The known forms are similar to some Chaco kivas, except in regard to direction of ventilator. The Rio Grande specimens open to the east; the Chaco specimens, to the south.

South of San Marcial nothing is known of the periods before the Early Phase of the Late Pueblo Period, and the region was abandoned at the close of the phase. The culture is probably distinct from that in the north, but due

to lack of excavation in the "borderland" it is impossible to draw fast conclusions. No kivas are known, but they may be present. The pottery complex is hybrid of northern Rio Grande forms, possibly affected by Chaco and the Upper Gila, and wares typical only to the region.

The Early Phase of the Late Pueblo Period in the Rio Grande, both north, and south, was contemporaneous with the Great Periods of; first, Mimbres, Chaco, and Mesa Verde; and later, Chihuahua and the Middle Gila. This Phase is given the very approximate dates of A.D.1000<sup>±</sup> to 1400<sup>±</sup>(1).

The late Phase saw the development, culmination, and decline of a highly specialized culture. It was during this time that the Rio Grande Culture attained cultural-dominance. It was the last period to attain this place, the rest of the Southwest, with the exception of the Little Colorado, had been deserted, and their Pueblo cultures had died out.

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1. Estimated after Douglas, A.E., The Secret of the Southwest Solved by Talkative Tree-Rings. National Geographic Magazine. vol.56, no.6. Washington, Dec. 1929.

PLATES

PLATE 1



The Fault-Block Ranges in the "Gallinas Country",  
Northern Chama Drainage.

PLATE 2



Pajarito Plateau: View North from the Late Pueblo  
Ruin of Tsankawi.

PLATE 3



Pajarito Plateau: Medio Día Canyon from the South.

PLATE 4



Edge of the Pajarito Plateau at the Mouth of  
Bland Canyon.



PLATE 5



The Eastern Foothill Country of the Sandia Mountains.

PLATE 6



The Forested Eastern Slope of the Sandia Mountains.

PLATE 7



A Typical Landscape in the Galisteo Basin.

PLATE 8



A Salt Lake of the Estancia Basin

PLATE 9



An Aspect of the Hueco Basin

PLATE 10



A Different Aspect of the Hueco Basin. Hueco  
Mountains in the Background.

PLATE 11



A Circular Semi-subterranean, Semi-surface House  
in the "Gallinas Country" of the Chama Drainage.

PLATE 12



Cross-Section of the Surface Buttress Wall of the Site Shown in Plate 11.



PLATE 13



A Site of the Early Phase of the Late Pueblo Period-  
Pajarito Plateau.

PLATE 14



A Site of the Early Phase of the Late Pueblo Period-  
Hotwells Ranch, Hueco Basin.

PLATE 15



Room Details, Hotwells Ranch, Hueco Basin.

PLATE 16



Room Details, Hotwells Ranch, Hueco Basin.

PLATE 17



Pueblo of San Cristóbal. The Ruins of the Chapel,  
Built Sometime near 1640, Is on the Opposite Side  
of the Creek.

PLATE 18



Old Kotyiti. Built post-1680; Destroyed 1693.

PLATE 19



The Mission San Diego de los Jemez, Built 1623  $\pm$ .  
A Pagan Kiva in the Foreground.



Kiva at Unshagi. Arrangement of Fire-Pits and Altar.



PLATE 21



Ceremonial Room, Unshagi. Note the Fire-Pit, Deflector, and Ventilator.

PLATE 22



Unshagi. Grain Bin in Secular Room.

PLATE 23



North Wall of Frijoles Canyon, Pajarito Plateau,  
with Cavate Dwellings in the Base of the Sheer  
Wall.

PLATE 24



Cavate Dwellings, Frijoles Canyon.

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PLATE 25



Reconstructions of the Houses that Fronted the  
Cavate Dwellings. Work of Kenneth Chapman.





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DRAINAGE MAP  
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SCALE

