

A HISTORY
OF
CHACO CANYON
NATIONAL MONUMENT

by
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1956

DSC ARCHEOLOGY

ON MICROFILM

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Forward

Part of the fascination of the Chaco Canyon is its isolation and solitude. Yet, an amazing number of people have spent considerable time in the Chaco, and each has an almost inexhaustible supply of stories about their period there. Our attempts here are limited to recording, summing up, and in some cases analyzing the more significant events that took place in the history of the canyon. Much of the research history is still in manuscript form, and a great deal of the administrative history is buried in the files of the area. A brief start was made by D. D. Brand,¹ and this paper gives due credit to this beginning as the foundation for this history. Mention should also be made of the debt to H. Gordon Vivian and the late Dr. Paul Reiter, both of whom, through conversations over the past 20 years or so, have given the author an insight into Chaco Canyon's past, both recent and ancient, that consciously or unconsciously flavors the report. Many of the field reports repose in Mr. Vivian's files and he kindly allowed us to extract much material from them. More recently L. T. McKinney has also been of help in interpreting past events in the Chaco.

The section on the establishment of the monument is unduly short due to the fact that most of the documents concerning this period rest in the National Archives, relatively inaccessible to this author. What material was garnered from this repository comes through the kindness of A. H. Schroeder. The history of research section may, on the other hand, seem too long, but it is felt that it is a most definite and important part of

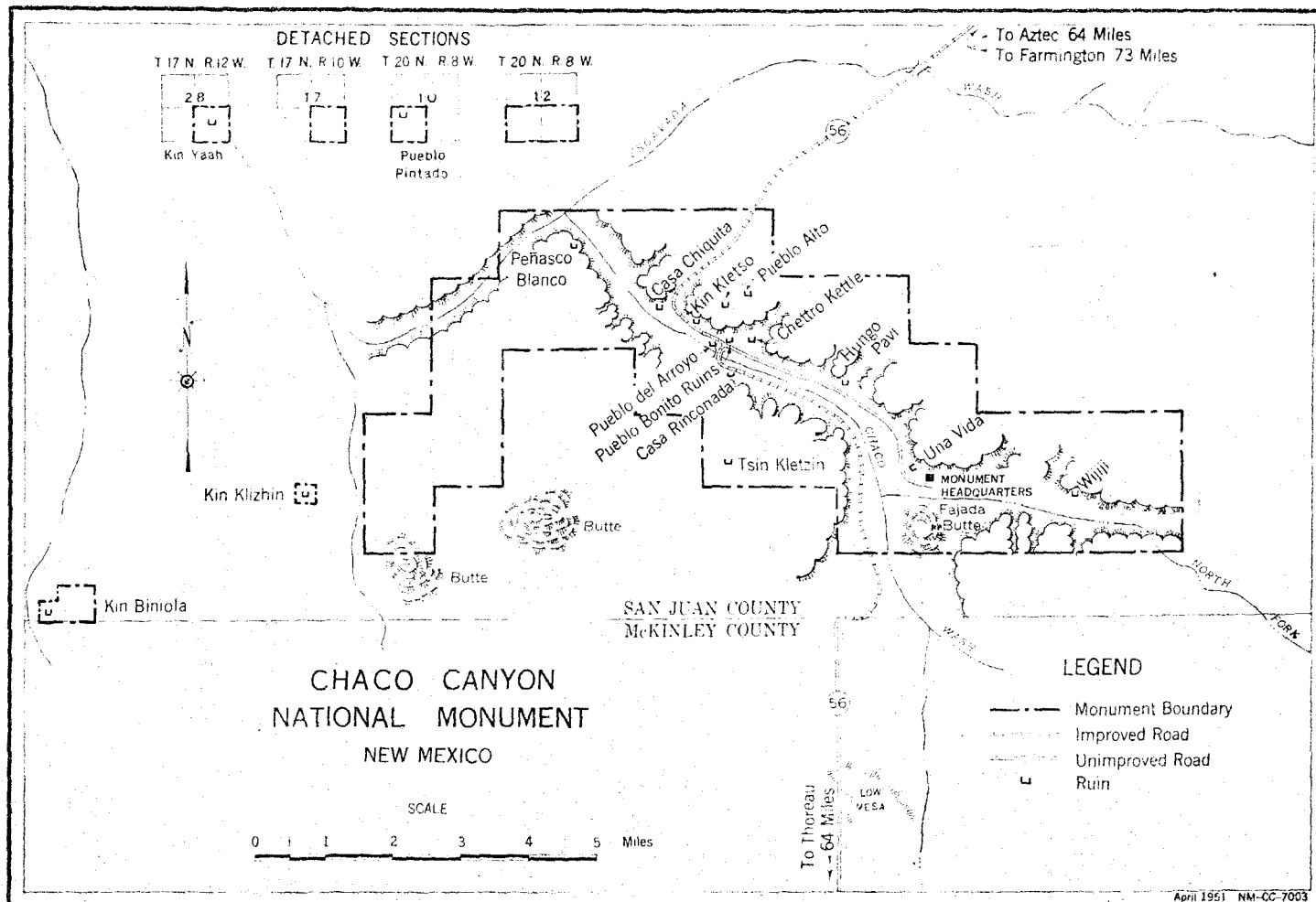
the history of Chaco Canyon National Monument inasmuch as the area has played such a vital role in southwestern anthropological research.

The author's association with Chaco Canyon began in 1942, as a student at one of the University of New Mexico's field sessions in anthropology. I served as a field assistant at another field school in 1947 in the Chaco and returned again as an employee of the National Park Service in the years 1954-1956. Like many other Chacoñeros, I have come to have a warm spot in my heart for the place. Having covered most of the monument on foot, talked to a great many of the "old timers" from the Chaco, and dug up some of the archaeology, I feel privileged to be able to write this history.

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CHAPTER I

THE SETTING

Introduction

Every people have had great periods in their past; the great ruined houses in Chaco Canyon National Monument are the physical remains of the greatest period in Pueblo Indian history. No-where else in the pre-columbian Americas was the Indian housed in such splendor. No-where else north of Mexico were such tremendous feats of architecture attempted. Chaco was and is a monument to man's endeavors to conquer and control his environment. Here he succeeded but for a short while. The ghosts of his struggle remain to awe each succeeding generation.

The story of the Pueblo peoples in Chaco Canyon is still in the process of being excavated by the archaeologist, and as each new report is published more will be added to it. The history of these peoples shall be limited here to a brief summation. Our main objective is to recount the history of the white man in Chaco Canyon, his successes and failures, trials and tribulations.

Boiled down to one word, the white history of Chaco Canyon can be summed up in the word "search." The first whites were searching for new lands and new riches. After the ruins were brought to the attention of the world there came searchers looking first for "things" in the early days and then for information on the whys and wherefores of man's development as archaeology reached maturity. With the advent of the National Park Service the search

was for a way to maintain, preserve and protect the area in a manner which was befitting its status of venerableness. How well each has succeeded thus far will be left for others to judge.

Name

The derivation of the name Chaco has piqued the interest of several writers on the Chaco. The earliest map of the area, that of Miera Pacheco, resulting from information gathered on the Escalante expedition of 1776² shows on the Plano Geographico edition a word looking like either Chaca, Chacat or Chacai, about where Chaco Canyon is located. On the same map is also Chusca, about where the Chusca Mountains are located, but close enough to be confused by someone with the Chaco area. Bloom³ reports that Chusca is probably Navajo, Chacat is of unknown derivation; and that Chaera, the name of a prominent mesa in the Chaco, is spanish for "a house of the field." The Spanish word 'Chaco' is used in South America as 'Gran Chaco' and means in Spanish "a circle formed in hunting the vicuna." The Navajo word "tsékho" means literally "rock opening" or canyon. ^{"tsékho"} 4 'Chaco' as used by latter day explorers may well be a corruption of this. At any rate, we feel certain the name has nothing to do with vicunas.

Geographical Setting

The Chaco Canyon National Monument lies in the southern portion of San Juan County, New Mexico at about latitude 36° 1" north and longitude 108° west. The canyon of the Chaco is usually considered as being that portion of the river above its junction with Escavada and within the monument boundaries. The Chaco River is a member of the San Juan River drainage

system and the Chaco drains most of northwestern New Mexico south of the San Juan. The river flows through the canyon from southeast to northwest and is an intermittent stream. The bed of the river in the vicinity of Pueblo Bonito is an arroyo some 25 feet deep and 50 feet wide, and, until erosion control work was done, eroded rapidly after every heavy runoff.

Geological Setting

Geologically, the area is on the southern edge of the San Juan Basin. Formations exposed by the cutting action of the Chaco River are of Cretaceous age, viz., the Chacra⁵ sandstone and Allison⁶ members of the Mesa Verde formation.

The Chacra sandstone is a fairly compact, light buff, weathering to deep buff, with occasional sections of a deep reddish-brown, cliff-forming formation. The Allison member is a stratified bed of clay, shale, coal and sandstone, with inclusions of selenite and gilsonite.⁷ On the north side of the canyon the Chacra forms sheer cliffs up to 100 feet high. With the smaller escarpments back from the edge of the top of the canyon wall the total difference in elevation from the top of the mesa to the canyon floor is 350 feet or more.

The south wall of the canyon is in reality a series of isolated mesas. More of the Allison member is exposed on the south side due to the upward dip of the strata from north to south. Weathering, too, is more pronounced on the south side of the canyon. Consequently, the Allison member forms gently inclined talus slopes. The Chacra sandstone here is quite eroded so that sheer cliffs occur only occasionally.

The valley floor consists of alluvial fill of recent origin. The present arroyo is the most recent of a series of arroyos extending back over some time, interposed with periods of filling. Occasionally the present arroyo exposes ancient ruins at depths ranging to 12 feet below the present land surface; and in the banks of the present arroyo appear sporadic traces of an ancient arroyo. This prehistoric arroyo dates from Pueblo times. The present arroyo was formed sometime in the middle of the 19th century.

The soils in the Chaco Canyon are, at present, heavily impregnated with soluble salts called white and black alkalis. The soil is prone to piping after heavy rains, although the initial penetration is nil. After the water has stood for a time the salts dissolve and the solution follows a vertical fissure until it hits another impervious layer. Then, flowing horizontally, it eventually reaches the arroyo. Eventually, this dissolves a bigger and bigger channel until a head cut is formed and a new arroyo started.

Biological Setting

The flora of the region is sparse, partially as the result of overgrazing by sheep within the past century. Chaco Canyon falls within the upper section of the Upper Sonoran life-zone with the diagnostic plants being piñon and juniper on the mesas and saltbush⁸ and chico⁹ on the canyon floor.

Large upper Sonoran fauna are practically non-existent since the advent of 10-80 poison. An occasional bobcat or coyote that managed to escape the trapper is about all. The smaller rodent population is heavy with rabbits,¹⁰ kangaroo, rats, mice, prairie dogs, ground squirrels and pack rats in abundance.

Porcupines, badgers, fox, and a few birds, mostly birds of prey, complete the faunal inventory.

Climatological Setting

Climatologically the area would be classified as a cool desert with an average rainfall of 8 to 10 inches per year; temperatures down to 20 below in the winter and as high as 104 above in the summer. There is a wide daily range in temperature. Summer rains occur during August and September and are apt to be of the cloudburst type. Moisture in the winter is either snow or drizzling showers and comes in January and February. Snow occasionally blocks the roads during the winter. Sand is more apt to block them, particularly during the spring as the winds then are heavy and produce vicious sandstorms. After heavy rains, mud does the trick. Prevailing winds are from the west, but the canyon affords some protection from them.

CHAPTER II

EARLY MEN - RED AND WHITE

It is difficult to ascertain, from the inadequate viewpoint of the present, why Chaco Canyon should have appeared attractive to primitive man. Certainly, the canyon must have had a plentiful supply of water; perhaps the river ran most of the year during prehistoric times. The canyon does offer a shelter and protection from the weather and from outsiders. There are various raw materials available, both vegetable and mineral, but no more than can be found at a great many other nearby locales. Possibly some religious or political leader or a religious atmosphere attracted the people to Chaco. Significantly, Chaco Canyon did eventually become one of the most populous areas, if not the most populous area north of the valley of Mexico in pre-Columbian times.

Ancient Man

To date no Ancient Man sites have been definitely recorded in Chaco Canyon National Monument. The closest finds have been in the Grants, New Mexico area where Bryan and Toulouse¹¹ have reported an ancient culture which they termed the "San Jose." These were a hunting-gathering people probably dating back to pre-Christian times.

The San Jose culture is part of a generalized type found over much of the Southwest in the 2,000 years or so prior to the time of Christ. There are reports of hearths in blowouts on the top of Chacra Mesa. A thorough search would almost certainly turn up evidence of early man within the Chaco region.

Basket Makers

In the terminology set up by southwestern archaeologists, the name Basket Maker refers to the earliest peoples that can be classified as belonging to the Pueblo group, the group whose present day representatives live in the Indian villages along the Rio Grande, at Zuni and in the Hopi villages. The Basket Makers received their name because of the cultural habit of using baskets for containers.

Dr. F. H. Robert's excavations at Shabik'eshchee Village atop Chaco Mesa produced evidence of Basket Maker occupation of Chaco Canyon.¹² Shabik'eshchee is classified as Basket Maker III or Modified Basket Maker dating probably during the 700's. This is rather late in Basket Maker times as their origination seems to have been in the Durango, Colorado area during the 2nd century A.D. as evidenced by Morris's excavations.¹³

The earliest Basket Makers frequently preferred caves for their dwellings, but by the 700's they were building semi-subterranean oval-shaped pithouses out in the open. These pithouses were arranged haphazardly into a small village; in the case of Shabik'eshchee, on the top of a mesa. The houses were entered via a small ante-chamber at the southeast side and a downward sloping tunnel or shaft. The entry also provided ventilation and in later models of the house the ante-chamber was dispensed with, the shaft made smaller and used solely for ventilation, and the entry way made through the smoke hole in the center of the roof via a ladder.

In the center of the pithouse floor was a fire hearth. Between the fire pit and the entry was either an upright stone slab or a mud and wood wall which served as a deflector for drafts coming through the entry.

The earth walls of the pit were sometimes strengthened by the use of large slabs of rock set vertically against the earth and cemented with clay. This was the start of masonry work among these people.

The roof was usually either flat with sloping sides or dome-shaped. It was supported by four vertical posts set in the floor of the pithouse, making a square. Across the top of the square and leaning against it were other smaller poles. Over the poles was placed a layer of bark or reeds and this was covered by a layer of clay.

Outside the houses, sometimes in conjunction with them, and quite often in contiguous rows, were small slab-lined storage pits with wood and mud roofs. Also outside the houses were many outdoor fire pits.

To one side of the village of Shabik'eshchee was a large-roofed circular pit approximately 40 feet in diameter. It has been called a "great kiva," a type of ceremonial chamber by Roberts¹⁴ and probably was ancestral to the fancier great kivas which were later found with the big houses. The great kiva had a central fire pit, a roof supported by four vertical posts, deflector but no ventilator. Encircling the floor was a low bench faced and backed by vertical stone slabs.

The Basket Makers were dependent upon agriculture for their livelihood, growing corn and squash during the earlier periods and adding beans to their diet near the end of the epoch. Fields were tilled with the digging stick, a system which amounts to little more than clearing the biggest of the brush and punching holes in the ground for the seeds. Flood-plain irrigation was undoubtedly practiced; the runoff after heavy rains providing most of the water.

Domestication included only the dog and the turkey. As one sage has pointed out, it is a moot point as to whether man domesticated the dog, or vice versa. There is some doubt as to whether turkey domestication was for food or merely for the production of feathers for ceremonial use.

Wild plants and animals provided additional food for the larder. Remains of sunflower, amaranth, rabbit, quail, deer, antelope, and other animals have been found in Basket Maker ruins. At first, the hunters used the atlatl or spear thrower, but in late Basket Maker times the more efficient bow and arrow were introduced. A favorite weapon for rabbit hunting was a throwing stick, a weapon somewhat like a boomerang. The animals were also utilized for their skins, sinew and bones; the bones making such objects as awls and needles.

During the Basket Maker period, represented by Shabik'eshchee Village, pottery was introduced and baskets fell into less favor. The pottery, strangely enough, imitated the shape of gourds which had been grown and used as containers by the Basket Makers for some time. However, the designs which were painted on the white pottery in black paint imitated the basketry designs.

The Basket Makers were a stone-age people. In fact, throughout the history of primitive peoples in Chaco Canyon we find none of them rising above this cultural level. Axes, mauls, picks, arrow-shaft smoothers, hoes and other tools were usually made of a hard stone shaped by pecking and grinding. Arrow and spear points were shaped by pressure-flaking from quartz and obsidian.

The Basket Maker people were short in stature; the adult males not too much over 5 feet in height. In build they were a stocky people, somewhat inclined to obesity, if and when the food supply allowed. Their undeformed heads were high-vaulted and relatively narrow and long. The usual garb in summer consisted of a breechcloth for the men and a string-skirt for the women, yucca sandals, and perhaps a decoratively woven band for the hair; and that was all. The winter array consisted of the addition of a feather or fur robe to the above. Men usually wore the hair in three bobs; the women sacrificed theirs to make strong hair-rope, thus becoming the true originators of the "gamin" type hair do.

The dead were interred flexed in the natal position. The burial was made in any convenient place - trash pile, sub-house floor, cave or crevice. Most generally, offerings of pottery containing food, and items such as weapons, tools and the like accompanied the dead.

Pueblo

Sometime during the 800's a cultural change took place among the inhabitants of Chaco Canyon. The change in the material culture was manifest enough to be obvious to the archaeologists working with the culture. The change was stimulated by new ideas developed both externally and internally. The archaeologists have termed the resultant culture the Pueblo.

Although some items such as head-form and pottery changed radically, the over-all picture and the cultural orientation remained much the same.

During the early Pueblo periods the idea of masonry, which the late Basket Makers had developed, was tested and experimented with ad nauseam,

much to the confusion of of latter-day taxonomists. During Pueblo I and Pueblo II, the Developmental Pueblo periods, one finds turtleback mud walls, slab walls, wattle and daub, palisaded wooden walls, cribbed wooden walls, wood and masonry, wood and mud, and the gamut of stone masonry types. The innovators settled on the coursed masonry type of wall which reached its peak of perfection in the superbly beautiful coursed rubble core walls of Pueblo Bonito and Chetro Ketl in Pueblo III times.

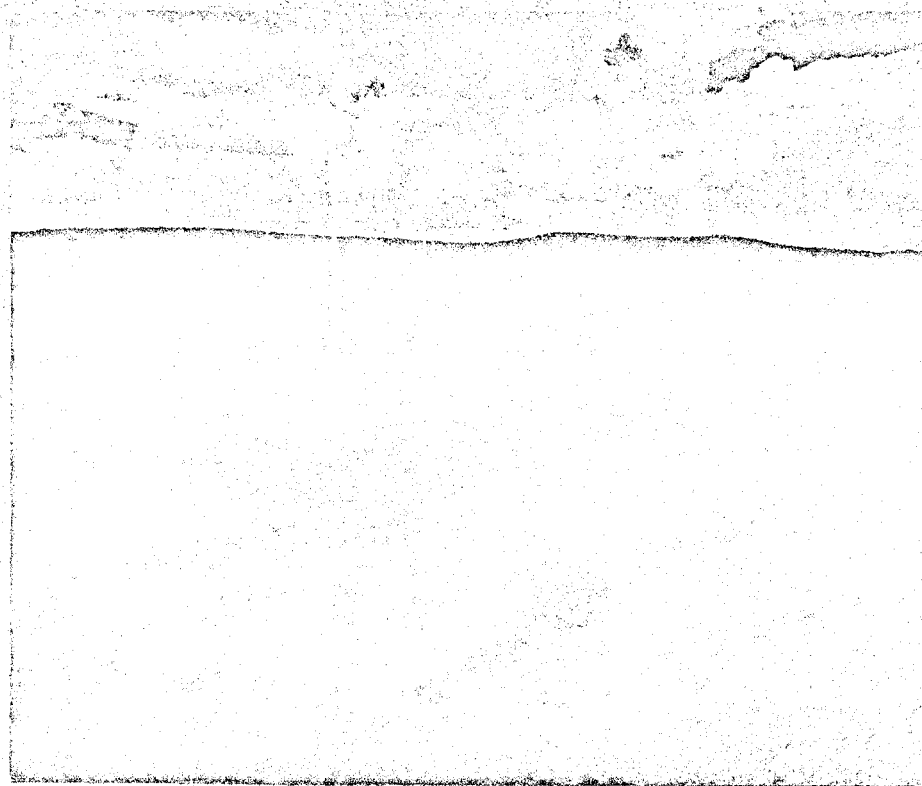
The home changed from a circular or oval pithouse to a multi-storied contiguous rectangular-roomed structure. The squarish surface storage rooms of Basket Maker times were enlarged as time went on and eventually the Indians decided that they made better dwellings than the ordinary dank pithouses did. In Chaco Canyon during the 900's and early 1000's there were upwards of 300 small villages of from 10 to 30 rooms. Mostly, these were on the south side of the canyon on small mounds somewhat above the valley floor. During the middle 1000's the large villages were begun. Some of these incorporated small villages, as in the case of Pueblo Bonito, while others were an entirely new structure.

The small houses were rarely more than 2 stories high, but the big houses reached 5 and even 6 stories in height. Pueblo Bonito, the largest of the 12 major villages in the canyon, for example, was probably 6 stories high, covering almost 3 acres with its 800 rooms and two large plazas.

The pithouse was not abandoned, however. It merely changed in its basic function and became a little more spruced up, as it became the religious center of the Pueblos. The small houses had 2 to 4 kivas and the big houses upward of 30 kivas in each. The religion of the Pueblo peoples had evidently



Pueblo Bonito After Fall of Threatening Rock



Chetro Kettle

crystalized in pithouse days and was so intertwined with the idea of a round subterranean room that when the people began to build the square-roomed living quarters they were forced, by strong religious custom, to keep the pithouses around for the special purpose of religious observances.

A parallel type of religious structure was the great kiva. As previously mentioned, the earliest pithouse village had one great kiva associated with it. There are several other great kivas, un-associated with any particular ruined villages, scattered over the canyon and these seem to represent great kivas for groups of small houses. The big houses had great kivas contained within the village walls, Pueblo Bonito and Chetro Kettle having two each. The largest great kiva is Casa Rinconada, 62 feet in diameter, with a roof supported by four huge Ponderosa pine logs. If, as is believed, the small kivas were for the various clan groups in the villages, then the great kivas were undoubtedly where all of the clans of the village met to stage the more elaborate religious ceremonies calling for great numbers of people to participate.

As prosperity increased the material wealth of the communities multiplied. The basic tools did not reflect the "good times" as much as the luxury items did. There was little change in stone tools; the metates became a little better shaped, but stone axes and arrow points remained much the same, though better finished than those of earlier periods. Bone awls were more frequently decorated with turquoise and jet, but the shape and use remained the same. However, turquoise-painted baskets, the exquisite cylindrical black and white pottery vases, prayer sticks carved in a myriad of designs, jet buttons, turquoise-encrusted "frogs," and a great many other artistic objects tell of a people with leisure time, creative urges, and a full stomach.

The climax of this development was Pueblo Bonito. From the treasures found within its ruined walls we can reconstruct the golden days of Pueblo history. Bonito housed somewhere around 1,000 people and there must have been 3,000 to 4,000 people in the canyon living in the other communal dwellings. To Chaco came the riches of the Pueblo world through an extensive trade system. Shells from the west coast and the Gulf of Mexico, pottery from the neighbors on all sides, parrots and copper bells from old Mexico, and various mineral pigments and semi-precious turquoise came from the four corners of their far-flung country.

To some people the dead are to be revered and their bodies preserved and placed in a special place. Not so with the Pueblos. The archaeologists find their dead usually in the trash pile, or under the floor of a room, and sometimes stuffed in a crevice or under a pile of rubble. The soul was undoubtedly the important thing. Items of everyday use as pottery, jewelry, food, arrows, etc. usually accompanied the bodies. Although the flexed burials are reasonably plentiful around most of the ruins in Chaco Canyon, the big houses have yet to give up the secret of where the apartment owners were buried. Frustrated archaeologists have dug in and about the big house sites for years, but to no avail.

As shown by a study of the burials of the Pueblos that have been found, they were much like the Basket Makers in all respects of physical form except one. Sometime during late Basket Maker days a switch was made in the type of cradleboard. A hard cradleboard was adopted by the Pueblos with the result that the head shape became noticeably flattened among these people. The soft pliable skull of the infant Pueblo was apparently tied to

the cradleboard so as to flatten the anterior region of the skull. It seems to have been a pre-conceived idea and not just happenstance that the flattening took place. Perhaps, as among other aboriginal groups, it was felt to be a mark of beauty.

Another mystery, although one to which we may now have the answer, is the abandonment of the area by the Pueblo farmer. Sometime during the late 1100's the region was depopulated little-by-little until by 1200 A.D. there were only a very few die-hards inhabiting the canyon. Over the years a great number of theories have been put forth for consideration. Such reasons as nomadic enemy pressures, drought, epidemic, internal strife, crop disease, religious mysticism, etc. have been mentioned as responsible for the evacuation. Most recent and best-substantiated is the arroyo-cutting theory of Bryan¹⁵ and Judd¹⁶ in which over-use of the farm land and denudation of the ground cover is declared to be responsible for an arroyo-cutting cycle which in turn ruined the farm lands, forcing the people to seek fertile fields elsewhere. After 1200 A.D. Chaco Canyon belonged to the Pueblo past and its glories began to decay and smolder, awaiting a rebirth via the archaeologists' shovel and the National Park Service.

Navajos

The Indian group in the Chaco at white contact was the Navajo. Just when these nomadic hunters arrived in the southwest and Chaco Canyon is unknown. Best guesses, backed by scattered dates, place their arrival at just before 1500 A.D., possibly as early as 1300 A.D. In Chaco Canyon, which is part of the Navajo "homeland," the earliest hogan date is in the

1700's.¹⁷ This date came from a hogan site on top of Chacra Mesa and is a site typical of the early hogan sites in the area. Later ones, representing more peaceful times, are found on the canyon floor.

Navajo legends tell of contact with the ancient ones who inhabited the apartment house villages of the Chaco. Navajo culture reflects a period of close association with the Pueblos, but most authorities believe that this took place in the 1680's when the Rio Grande Pueblos fled that area to get away from their Spanish conquerors and hid out in Navajo land. There are in the Chaco several prehistoric sites giving evidence that some of the Pueblo refugees used the canyon for their place of refuge.

The early Navajos lived by hunting and gathering until continued contact with Spanish and Americans introduced sheep and herding to them. Today there has been for them to become less and less nomadic as now very few ever leave their place of abode. That they did some farming prehistorically is believed to be true, as in historic times many fields of corn were grown in the canyon.¹⁸

The traditional Navajo home or hogan is circular building with a domed roof and door to the east and consists of wood and mud or a combination of brick, wood, and mud. The hogan, reminiscent of the eskimo igloo, may well represent a survival from ancestral days in Canada where the Navajo supposedly originated. After the first trading post came into the canyon, at the turn of the century, the valley floor was dotted with hogan clusters. In 1912, however, the last of the Navajos were removed from the monument area and they now reside along the northern and western boundaries.¹⁹

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The Ruins

The first Americans into New Mexico were the Mountain Men. They covered most of the possible sources of beaver during the early 1800's. It is known that they used the Old Spanish Trail and visited the San Juan River and its tributaries. Whether they explored the Chaco River is unknown, but remains a possibility.

Josiah Gregg²² makes first mention of the massive ruins of the Chaco country in 1844. His description of "Pueblo Bonito" is very general and probably derived second hand, as he makes no claim of actually seeing the village. Undoubtedly, in his trading activities, he ran across Spanish or Mexican traders who had seen the wonders of Chaco Canyon. Gregg was in New Mexico, off and on from 1831 to 1840 and had ample time to acquire this knowledge.

Credit for being the first white man to see and fully describe the ruins of Chaco goes to Lt. J. H. Simpson, Corps of Topographical Engineers, U. S. Army, and his party consisting of H. H. Kern, artist, Assistant Surgeon J. F. Hammond, Mr. J. L. Collins, Mexican guide Carrañahal, and a detachment of mounted Mexicans or New Mexicans.²³ Simpson's party was a portion of the command of the governor of New Mexico, Lt. Col. John H. Washington, who in August of 1849 was leading his troops from Santa Fe through the Navajo country on a punitive expedition against the Navajos in the hopes of intimidating them into submission.

Simpson chronicled the expedition. He reports three guides: Hosta, a Jemez Pueblo Indian; Sandoval, a friendly Navajo; and Carrañahal, a Mexican. The Mexican actually gave the names for the various ruins, either out of

his land or from what he had heard. Upon reaching Pueblo Hittado, each of the guides had a different name for it, but Simpson wrote that he felt that the several lines were more about the area than any of the rest, so he relied upon them then on for the names of the various ruined villages.

Simpson, with the Messrs. Kern (both B. K. and L. K.) explored Pueblo Hittado on August 26 and on the morning of August 27, 1890. The command then proceeded down canyon, visiting Wiji and camping on the night of the 27th near Cajada Butte. The next morning, the 28th, the main force went out into the open, striding southwest. Simpson's detachment continued down the canyon with the idea of exploring for more ruins and joining the main body later in the day. As they traveled down the canyon Simpson vividly described in his journal the pueblos of Una Vida, Hungo Pavi, Chetro Kettle, Puerco, and Arroyo, Hin Eletso, Casa Chiquita, and Pansosa Blanco. All were visited in the same day, so it is surprising that Lt. Simpson was able to accomplish as much as he did in exploring and taking notes on the ruins. Early in the day they left the canyon at the west end, spent a rather hectic night out alone and joined the rest of the troops the next day.

The publication which resulted from this and other explorations on the trip produced a marked interest in Chaco Canyon and its ruins and noted on the findings for future explorations of the territory.

Near Chetro Kettle there are several inscriptions on the ruins with various names but all reading: 1853, C. E., R. A. R. Research²⁴ has shown these to be the writings of a detachment of riflemen, Company E of the 8th Regiment of Mounted Riflemen to be exact. Company E later became Company F of the 1st U. S. Cavalry, but on October 31, 1853 the unit was encamped on the Rio Chaco.

They had marched from Fort Garland, New Mexico under command of Capt. Thomas O'Connell for Santament Iurguin, south of Taos, New Mexico, on October 3, 1858, and from there for the Navajo country on October 10, 1858. Although their mission was chasing Navajos, the men must have spent some time exploring the ruins.

After the Navajos were finally convinced of the error of their ways, and the South likewise, the United States set out to really find out about the west that they had inherited. Several members of the Geographical Society west of the 100th meridian visited Chaco. Dr. Oscar Loew visited it in 1874, and what he calls Pueblo Bonito reads more like a description of Pueblo. Lt. Rogers Barrie, Jr., of the 13th U. S. Infantry, visited some of the ruins described by Simpson in September of 1874.²⁶ In the summer of 1875 Lt. W. H. Harrison, 6th U. S. Cavalry, visited Pueblo Pintado.²⁷

One of the most famous of the geographical survey people to visit the canyon was William H. Jackson, photographer and artist. He came into the canyon via Cabazon and the Terroja Valley to Pueblo Pintado, thence down the canyon, visiting the various ruins on the way. He was the first to record Pueblo Alto, and the famous stairway behind Chetro Kettle, which has been named after him. Jackson spent May 7 to 15, 1877 in the canyon, photographing, drawing, and making copious notes on the ruins.²⁸ Most unfortunately, Jackson's photos are non-existent, for he was using for the first time the fore-runner of today's roll film instead of his usual wet-plate process, and the stuff was no good.²⁹

Mr. Sacramento of San Ysidro, New Mexico acted as interpreter, and Mr. traveling Jemez, acted as guide for Jackson's Hayden survey party. They

camped in the arroyo 350 yards below del Arroyo for three days - fortunately it must not have rained or Jackson's report would have never seen the light of day. Arroyos are not recommended for camping spots in the southwest because of the ever-present danger of flash floods.

Each of these reports have added to the meager knowledge of prehistoric Canyon. With the arrival of cattlemen and traders in the late 1800s the period of exploration was over and the dawn of white civilization began to appear over the eastern horizon - followed rapidly by asserted archaeological sites out of Santa Fe and Albuquerque.

CHAPTER III

RESEARCH HISTORY OF CHACO CANYON

Almost every year since the 1890's Chaco Canyon has seen men and women of scientific bent prodding, looking, asking questions, digging about, and peering in and at strange places. Some have been teachers, some students, but all have learned not only the sciences but the quirks and vagaries of both man and nature. Prehistoric man reached great heights of architecture here. Modern man, if nothing else, made the area, at one time, one of the foremost training grounds in the study of man. Scratch almost any American-trained anthropologist of today and you scratch a Chacafello of the past (analogies to the Greeks). Coupled with the training came a knowledge of the past that is probably more complete than in any other area in the southwest. They have suspected, while undergoing the period of learning the know-how of anthropology, that they were simply the pawns of the masters. Time has proven a few of these doubters correct, but the majority of the students actually learned in spite of themselves and are much better off today because of Chaco.

The archeologists have been the greatest beneficiaries of Chaco, with the ethnologists running them a close second. Hardly a ruin or a Navajo for miles hasn't known the inquisitive squint of these nosy individuals. Stories of their antics have been told and retold around many a hogan fire during the long winter nights. It's an ill wind.....

The peak period in the anthropological research of the canyon was from 1937, when the School of American Research - University of New Mexico Research Station was completed, until 1942, when it was closed by the second World War. The fame of this field school was such that it was attended by students from almost every college in the country.

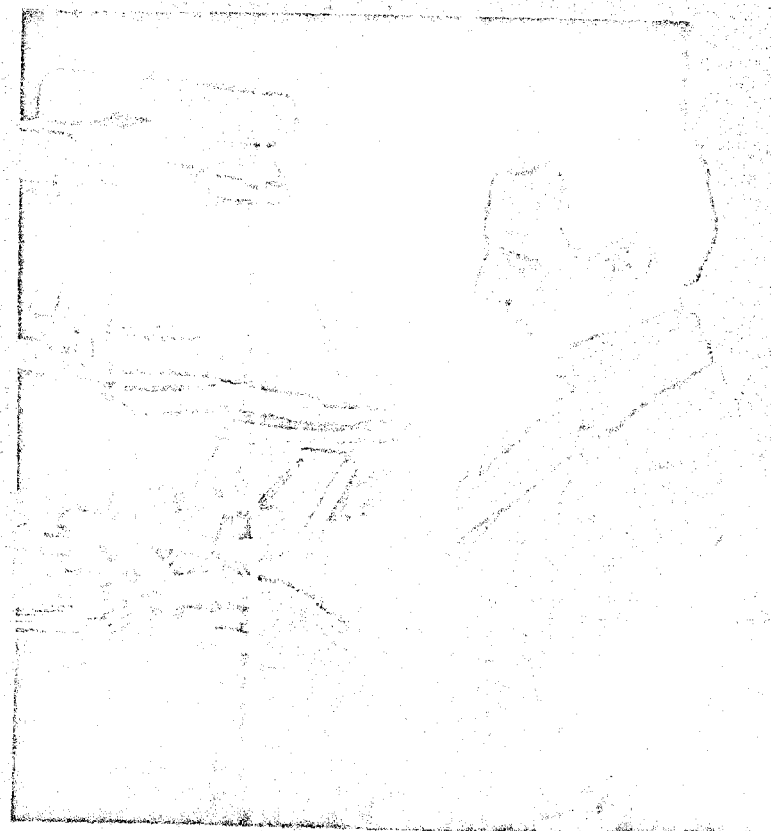
In the following listing of the research activities in the canyon the archaeological sites are listed first by those having names and then by those bearing only the "Rc" numbers. These numbers are the system set up by the University of New Mexico in archeological surveys of the canyon. "R" stands for New Mexico and "c" for Chaco Canyon. The sites were numbered serially as they were found with no particular regard to location.

Pueblo Bonito. Largest of the 12 major ruins, most prominent archaeologically, and popularly known through its two major explorations. Pueblo Bonito represents the zenith of Pueblo architecture. The D-shaped apartment house contained upwards of 800 rooms, reached a height of at least 5 and possibly 6 stories and housed about 1,000 inhabitants. Its terraced grounds covers almost 3 acres of canyon floor at the base of a 90 foot sandstone cliff.

(Hyde Expedition) In 1896 the Hyde Exploring Expedition was formed with one of its principle aims being the archeological excavation of Pueblo Bonito. Richard Wetherill, a Coloradoan, and guide, rancher, and amateur archaeologist, had interested two of his customers, B. Talbot B. Hyde and Frederick B. Hyde Jr., in exploring Pueblo Bonito. The Hyde brothers were wealthy New Yorkers, heirs to the Babbitt soap fortune, and had gained an interest in Southwestern archaeology partly through Mr. Wetherill. Wetherill had visited the canyon as early as 1895.³⁰



F. W. Putnam at Pueblo Bonito



George Pepper

The Hydes contacted Professor F. W. Putnam of Harvard and the American Museum of Natural History for advice. Professor Putnam became scientific director of the expedition, although he spent very little time in the field. He appointed George Pepper, a student of his, as field director. Mr. Pepper directed the expedition's efforts in the summers of 1896 - 1899. Richard Wetherill served as excavation foreman with his four brothers assisting.³¹

During the four seasons 198 rooms and kivas were excavated and back-filled. Most of the material, including several complete rooms, was donated to the American Museum of Natural History in New York City.³² The excavations started in the north central and northwest part of the building in 1896. In 1897 work continued in the northern or curved part of the building. Holsinger says that work also started in 1900 but there is no record as to whether this was the organization with Pepper or just the expedition going on its own.³⁴

Along with the expedition at various dates were experts in various fields, so that quite a bit of information was gathered over the years. In July, 1916, W. C. Nelson of the American Museum of Natural History and Earl H. Morris sank pits in the east and west trash mounds for stratigraphic tests. They also made a ground plan of Pueblo Bonito which, after checking by H. H. H. Hyde, was used by Pepper in his report.³⁵ A glance at Pepper's report will serve to indicate the richness of the ruin and the amount of material removed.

(Hoerthead's Expedition) In April of 1897 an expedition led by Warren K. Hoerthead, Curator, Department of Archaeology, Phillips Academy, Andover, Massachusetts, arrived in Chaco Canyon. The excursion was paid for by Robert S. Peabody, ex-Phillips academy student, and seems to have had as its principle

objective the making of a collection of southwestern artifacts for the Phillips Academy Museum. Dr. W. N. Wallace of Farmington accompanied the expedition as interpreter. They left Farmington, New Mexico for Chaco with 9 men, a large wagon and 5 horses. They dug and explored several rooms in Pueblo Bonito, securing some 2,000 artifacts in three weeks' time.³⁶

While in the canyon they also dug a small cemetery about a mile from Pueblo Bonito. Mr. Moorehead suggested that the government take over and protect the area. Stories have it that Moorehead was not particularly appreciated by the Wetherills, as the ruin was in the process of being excavated by them at the time that Moorehead did his digging. However, the land was unpatented government land, open to anyone with a shovel, so nothing could be done about it by the Wetherills.

(National Geographic Expedition) During the summer of 1920 Neil M. Judd, curator of Archaeology at the U. S. National Museum was asked by the National Geographic Society to make a preliminary study of Chaco Canyon and recommend a large house for archaeological exploration under their research program.³⁷ Judd recommended Pueblo Bonito, and was appointed director of the Society's expedition, spending the summers of 1921 through 1927 digging Pueblo Bonito and Pueblo del Arroyo. The prime objective was the complete excavation, both for information and as an exhibit for the public. This entailed re-excavation in part of the backfilled rooms of the Hyde Expedition and some stabilization work. Except for a small collection in the National Geographic Society's Explorers' Hall, all of the material excavated by Judd in Pueblo Bonito is at present in the National Museum.³⁸

During the years that the Expedition camped in front of Pueblo Bonito the following were among Judd's assistants: Karl Rappert (assistant director), O. C. Havens (photographer), H. B. Collins, Jr., George B. Martin, Frank H. B. Hammond, Frank H. H. Roberts, Jr., Monroe Ansdon, Henry B. Roberts, and Oscar B. Walsh (Engineer, USGLO).³⁹

Excavations were commenced in May of 1921 with 7 assistants and a crew of 14 Zuni and Navajo Indians. Camp was set up directly in front of Pueblo Bonito along the edge of the arroyo. A water supply was developed and excavations were carried on in the central wing (great kiva) and southern eastern sections of the village. Fifty secular rooms, 5 kivas, and a number of refilled rooms were cleaned out.⁴⁰ The west refuse mound was trenched.

The 1922 season lasted from May to September with 7 assistants and about 20 Zuni and Navajo laborers. Excavations were carried out in the east wing and 35 rooms and 6 kivas were uncovered. The east refuse mound was trenched and 3 test pits, each 12 feet deep, were sunk in the alluvial fill of the valley floor in the vicinity of Pueblo Bonito to determine its composition and stratigraphy. In excavating beneath the floors of the east wing the remains of an earlier village were discovered. Railroad tracks of the type used in small mines, and hoists with "A" frames were installed to aid in disposing of the tremendous amount of fill removed from the town.⁴¹

Work was again resumed in the spring and summer of 1923 with excavations principally of the north section of Bonito. The crew consisted of several white assistants and 27 Navajo and Zuni. The rooms in the back section filled by the Hyde Expedition were redug and 3 new kivas and 26 new secular rooms were unearthed. The east courtyard was cleared to its original surface.⁴²

the time of occupation and trenched in places. The remains of an earlier village were discovered to the east of Pueblo Bonito. Expenditures for the year 1923, which included some work in Pueblo del Arroyo, totaled \$13,700, a little over par.⁴²

The summer months of 1924 saw work carried out in the west half of the village, in the village extending under and to the east of Pueblo Bonito, and in the west great kiva. The walls around the trash heap and a wall extending from the southeast corner of Pueblo Bonito in a northeasterly direction for 500 feet were delineated. Excavations in the eastern and northern sections of the village were completed. The crew this season consisted of 6 technical assistants plus 4 other white men and 37 happy Achaean aborigines.⁴³ The surface structures of Pueblo Bonito had been fairly well excavated by the end of the 1924 season.⁴⁴

During the 1925 season, 25 Indian laborers were employed at Pueblo Bonito and the concurrent dig at del Arroyo. In Bonito the underlying sub-structures were excavated and 4 deep stratigraphic trenches were made; one through the west plaza, and one through the refuse mound and on to the south wall of Pueblo Bonito.⁴⁵ In one of the stratigraphic trenches an ancient flood water diversion channel was disclosed. Work in the sub-structures was continued in the 1926 season and sub-court walls in the west plaza were outlined in conjunction with the ceramic study of Dr. Roberts.⁴⁶

Some work was accomplished in the village in 1927, as 8 laborers were employed,⁴⁷ but most of Judd's time was spent in studying the various features on the mesa in back of Bonito and Chetro Kettle.⁴⁸

Chetro Kettle

Second of the great pueblos in the canyon, Chetro Kettle has been the special project of the School of American Research and later the University of New Mexico. Excavations were carried on in this huge D-shaped ruin from 1922 to 1937. Chetro Kettle has a curved front wall 600 feet long; a straight back wall 470 feet long, 3 to 5 stories high; and contains 40 kivas and possibly 700 rooms.⁴⁹

Throughout all the digging in Chetro Kettle one man was responsible for the operations - Dr. Edgar Lee Hewett of the School of American Research and later head of the University of New Mexico Anthropology Department. Hewett first visited Chetro Kettle in 1882 on a field-school trip from Bryn Mawr University. He initially negotiated with the Royal Ontario Museum of Archaeology and the Smithsonian Institution to join with the School of American Research in the excavation of Chetro Kettle in 1916. Hewett went to those that fail to make preliminary studies. The first World War disrupted plans until 1919. In 1920 work was resumed but the Smithsonian was forced to withdraw their help due to lack of funds. Headquarters were set up in the old Vothrill house and part of Pueblo Bonito was used as a photo laboratory and for storage.⁵⁰

The 1920 excavations were confined to the rooms and kivas in the northwest corner and the trenching of the trash mound.⁵¹ The 1921 season was carried out in the same general portion of the great village. Wesley Bradford was assisting Hewett at this time. The east great kiva was excavated in 1922 and portions of the east section of the front wall were outlined the same season.⁵² Kenneth M. Chapman made a study of the design elements on the pottery.

from the trash dump and kiva 11 in connection with the excavations.⁵⁴

Work was halted from the end of 1921 until 1929, ostensibly to make way for the National Geographic Society's work on Pueblo Bonito.⁵⁵

Apparently there was some friction between Hewett and Judd over several things. The program in 1929 called for the participation of the University of New Mexico with the School of American Research, Hewett being in charge of the entire project; Paul Reiter as field supervisor; Anna Shepard, sherd expert; Florence Hawley, Museum and cataloging; Stanley Stubbs and E. C. Fisher, in charge of the camp; Sam Huddleston, stabilization; and 22 students plus Indian laborers. The railroad and hoists which had been used at Pueblo Bonito were taken to Chetro Kettle and used to remove the excavated fill there. The east tower and vicinity, the trash mound, and the lower levels of the east great kiva were all worked on during the 1929 season.⁵⁶

During the 1930 season Paul Reiter was again field supervisor, and work was continued on the east tower and the rooms surrounding it. Trenches were dug down both inside and outside the back wall to discover the total number of stories. Under Florence Hawley's direction the work on the refuse heap continued and a trench was cut from the east wall to the middle of the trash mound to determine possible stratigraphy. Work continued on the east great kiva sub-structures also.⁵⁷

During 1931 excavation in the substructures of the east great kiva continued under the direction of W. W. Postlethwaite of Colorado College. Postlethwaite was assistant director that season, with Hawley on stratigraphy; Reginald Fisher on engineering and archaeological surveys; Paul Reiter on excavation supervision and field museum; and Sam Huddelson on construction.

and repair. The rooms surrounding the east tower kiva were excavated, the kiva directly west of the east tower was dug, and trenching continued in the trash pile.⁵⁸

The 1932 season saw work continued in the East Tower Kiva,⁵⁹ the opening of the crypts in the east great kiva,⁶⁰ and the clearing of the sub-
terranean and recovery of the stone seating discs in the postholes of the east great kiva.⁶¹ Work was also begun in clearing the west tower kiva.⁶²

Rooms and the meat across the front of Chetro Kettle were partially excavated in 1933, the plaza was cleared and features in the southeast corner were uncovered.⁶³ Postlethwaite was in charge of the meat excavations.⁶⁴ Rooms just south of the north wall were cleared and work in the west tower kiva and its surrounding halls and rooms was begun. In general, the season's studies were concentrated around ground plan, architecture, masonry, and special features. Paul Walter, Jr. assisted Dr. Hewett; Paul Reiter was again in charge of excavations; Mrs. Paul Reiter in charge of the museum; and 9 students completed the group.⁶⁵

A thorough study of the complex east tower kiva was made by J. Marshall Miller during the 1934 season.⁶⁶ The west great kiva was excavated by field assistant W. W. Postlethwaite and Janet Woods.⁶⁷ Assistant director R. Fisher directed stabilization measures in the east end of the center section of Chetro Kettle.⁶⁸

1935 and 1936 were sterile years as far as Chetro Kettle was concerned; the field school students mostly digging in the small house sites of the canyon. Two rooms were cleaned out in Chetro Kettle, a test hole was dug, and a room with murals on the wall were cleared in 1936.⁶⁹ 1937 brought to a close the long period of activity by the School of American Research and the University of New Mexico in Chetro Kettle. In that year W. W. Postle-

Sanito checked, by pits, the entire length of the moat across the front of the village.⁷⁰ Since 1937 only incidental excavation has been carried out, and this in connection with stabilization work done by Gordon Vivian of the National Park Service in 1947 and 1948. This work did result, however, in some of the finest painted wooden material, evidently part of an altar, to come out of the southwest, and the biggest artifact find in the research history of Chetro Kettle.

Pueblo del Arroyo

Concurrent with the National Geographic Society's excavations in Pueblo Sanito during the 1923 through 1926 seasons, excavations were also carried out in Pueblo del Arroyo. Karl Ruppert, then of the Arizona State Museum, and Dr. W. M. Judd,⁷¹ chief assistant, directed the efforts at del Arroyo.

During 1923 debris from the south and west sides of the ruin was removed and one kiva and 20 rooms were excavated.⁷¹ The south wing and extramural habitations were excavated during 1923 and 1924; and in 1925 work was concentrated in the middle portion of the building and the plaza was tested, but not cleared to its original court pavement.⁷² The final season of 1926 was confined to the structure at the rear of del Arroyo, which turned out to be a series of rooms and a tri-walled kiva.⁷³ The north wing and the series of rooms across the front of the village were untouched.

In 1949-50, Gordon Vivian re-excavated the tri-walled structure and stabilized it for the National Park Service.⁷⁴

Kin Kletso:

Excavation of Kin Kletso was started by the School of American Research and the University of New Mexico in the summer of 1934. Edwin Ferdon directed the work under Hewett.⁷⁵ The excavation was completed under Gordon Vivian

for the National Park Service in 1961 as part of the stabilization program.⁷⁶

Penasco Blanco. Dr. Judd reports that F. H. H. Roberts Jr. trenched the trash mound in 1926 to check his pottery sequence from Pueblo Bonito; and back in the 1890's Richard Wetherill had several Navajos, including one Nello, dig out several rooms in the village.⁷⁷ The flats west of the ruin have produced burials and may contain a cemetery.⁷⁸

Pueblo Alto (Old). This ruin and Penasco Blanco constitute two of the largest relatively untouched ruins in the canyon. F. H. H. Roberts trenched the trash mound for pottery sequence and stratigraphy in 1926⁷⁹ and a few graves in one of the mounds near the ruin were removed in the days of the Wetherills.⁸⁰

Una Vida. Sara Goddard of the School of American Research removed several burials with pottery from the vicinity of Una Vida in 1931.⁸¹ However, there have been no actual recorded excavations within the ruins proper, as the burials apparently came from the talus behind the village.

Kin Bineola. One of the outlying ruins some 12 miles to the southwest of the canyon. There have been no apparent excavations in the ruin, but Laura⁸² reports that Richard Wetherill found a great many burials in a ruin with a large kiva one-half mile from Kin Bineola in 1900.

Kin Yaa. This is another of the outlying ruins. Kin Yaa is situated near the present-day town of Crown Point. The only research accomplished here is the visit and description by Fewkes in 1916.⁸³

Casa Morena. More "search" time has probably been spent on this ruin, allegedly located east of Crown Point, than on any other ruin in Chaco Canyon National Monument. Research time has been nil however, for apparently the ruin does not exist, and Hewett's proposal to make it a part of the

national monument was based on ill-founded hearsay.

Casa Rinconada. Probably the largest true great kiva in the Southwest, Casa Rinconada was thoroughly excavated and stabilized by Gordon Vivian for the School for American Research in 1931, 1932, and 1936. The huge bowl was tranced across the west end in 1930 as a preliminary reconnaissance.⁸⁴ In 1931 the ruin was cleared by Vivian⁸⁵ and the next year Vivian and Richard Vann cleared the floor, removed the veneer from the bench,⁸⁶ and repaired the building.⁸⁷ During June of 1934, trenching activities in the vicinity of Casa Rinconada were undertaken for the School of American Research by Bertha Dutton and Marion Hollenbach.⁸⁸ Vivian was reportedly working on repair and reconstruction of the kiva in 1936 for the School of American Research.⁸⁹

Kin Nahasbas. Near the pueblo of Una Vida, on the top of a steeply sloped hill is a small ruin with a great kiva. This kiva was termed Kin Nahasbas and was excavated for the School of American Research by Dorothy Lubbs, assisted by Francis Elmore, in 1935.⁹⁰

Casa Sombreada (No 528). A small house on a talus top excavated during two seasons by the University of New Mexico under the direction of Paul Reiter in 1940 and William Mulloy in 1941.⁹¹

Cliff Cavities. Behind Pueblo Bonito and Chetro Ketl and running down to Kin Kletso are a series of natural and man-made holes in the face of the base of the cliff. Hurst Julian, then custodian of the monument, cleaned out holes P. S. (for Park Service) 1, 2 and 3 between Pueblo Bonito and Chetro Ketl in August and September 1932.⁹² With Mrs. John Yak^{Kear} of Hunter College, he cleaned out cavities U (for University) 1 and 2 behind Kin Kletso

for the School of American Research and the University of New Mexico in the summer of 1933. Quite a collection of dry perishable material was obtained.⁹³

Half House. This half of a pit house appeared in the bank of the Chaco arroyo after a flood in the late 30's. It was brought to the attention of the University of New Mexico field school and was excavated by a crew of students headed by Richard N. Adams in 1947. He was assisted by Lucille Knudson and Malcolm Raphael.⁹⁴

Judd's Pithouses. Pithouse No. 1 was dug in 1920. It had been found while trenching operations were being carried on in a burial mound 100 yards east of Casa Rinconada. Pithouse No. 2 was brought to Judd's attention in the spring of 1922. It appeared in the north bank of the Chaco arroyo about a mile east of Bonito and was excavated that spring.⁹⁵

Levit Kin. One of the first of a series of "small houses" to be excavated by the School of American Research. The excavation was started on July 11, 1934 with Navajo labor and lasted until July 20. In September it was set up as FERA project No. S23-P2-5 and work was carried on from the 3rd through the 8th. In 1936 the excavation was resumed, this time as a WPA project (No. 65-P5-1072) and both Navajo and Mexican-American laborers were used at various times. Work was carried on from Aug. 5-24, Oct. 19-30 and Nov. 9 through 20. All told, 14 or more rooms and 4 kivas were excavated in this deeply buried ruin. The excavation was directed by Miss Bertha Ertson and served as the basis for her Masters thesis at the University of New Mexico.⁹⁶

Shabik'eshchee Village. The only extensively excavated Basket Maker village lies atop Chacra Mesa at the southeast corner of the monument. This 12-house village was excavated by F. H. H. Roberts Jr. under the auspices of the Smithsonian's Bureau of American Ethnology Expedition in 1927. Beside the houses was a large circular ceremonial structure and some 48 storage bins. The 2 small refuse mounds for the village were also trenched.⁹⁷ The village had been found the year before when Roberts was excavating pueblo sites at the foot of the mesa nearby for the National Geographic Society. He tested the site and excavated a protokiva and a house that year.⁹⁸

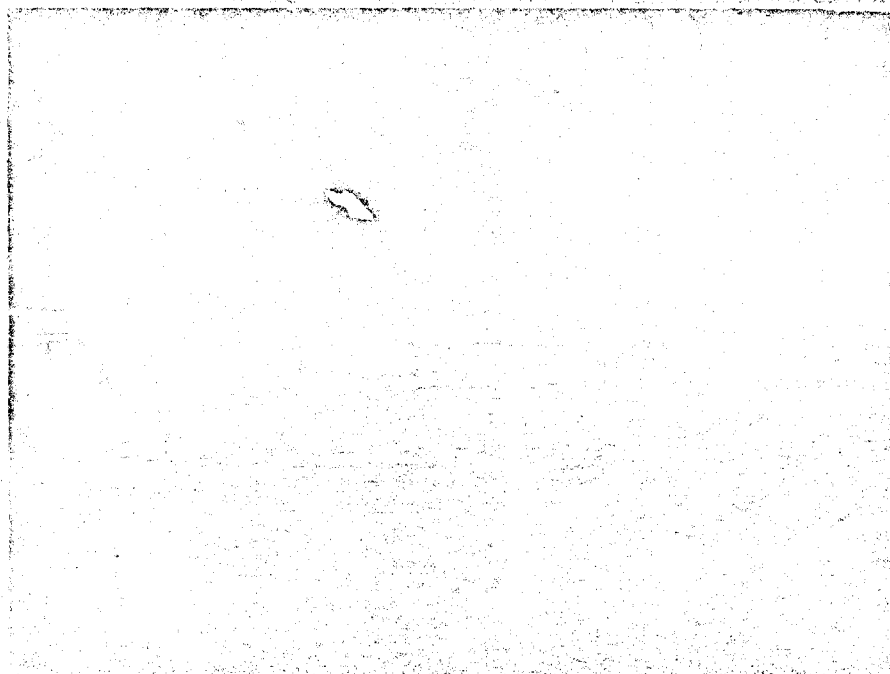
Talus Unit No. 1. This rather large small-house lies directly in back of Chetro Ketl and may well be a part of it as it appears to have been contemporaneously occupied. Excavation in the ruin was started by Paul Walter Jr. for the School of American Research in the summer of 1932. Work was begun in the eastern portion. The next summer the task was undertaken by Miss Margaret Woods and she directed the project through the 1934, 1935, and 1937 seasons. In the summer of 1935 she was assisted by Dr. Rath Willis Fry. Virtually all of the interesting ruin was dug by the end of the 1937 season.⁹⁹

A series of most intriguing speculations have recently been published concerning Talus Unit no. 1 and Chetro Ketl. The speculations have been based on certain architectural features which occur and are still visible in these two ruins.¹⁰⁰ Work of this type is one of the best reasons for preserving a ruin either by stabilization or back filling, after its excavation rather than to let it fall back into ruin as is the usual case with a great many archaeological sites.

Three C Site. In 1939 plans for a Civilian Conservation Corps camp in the canyon necessitated the excavation of this small early pueblo. The site was at the location of the proposed camp and was in danger of being disturbed. Gordon Vivian, assisted by H. K. Boone excavated 9 rooms of the site for the National Park Service in June, 1939. In 1940 Mr. Vivian, assisted by Raymond Hixey, trenched for and found the two kivas associated with the site.¹⁰¹

Tsch So (Bc50, Rock Crystal House). This is undoubtedly one of the most significant small-houses to be excavated and reported on. Tsch So was commenced by the University of New Mexico field school under the direction of D. D. Brand in August of 1936. F. M. Hawley was in charge of the laboratory, Frank C. Hibben directed the excavation of the building and Wesley Bliss the trashmound. Dr. Leslie Spier and Dr. Stuart Adler assisted on the excavations. Approximately 80-90 percent of the ruin was excavated during the session. A total of 19 rooms, 4 kivas and several rooms of an earlier structure underlying Tsch So at the northwest side were completed.¹⁰² Then Glenn carried out the excavation of the subsection in 1937.¹⁰³ Later, Barbara Clark excavated here in 1938¹⁰⁴ and Frank M. Setzler and Donovan Senter in 1939.¹⁰⁵

Bc 51. In close proximity to Tsch So and relatively as important in archaeological annals is the small-house site Bc 51. One room of Bc 51 was dug at the same time Tsch So was being excavated¹⁰⁶ but the major portion of the excavation was carried out in August of 1937 as part of the University of New Mexico field school. In this excavation the bulk of the village was cleared, including 19 rooms and 6 kivas, the trashmound (shared with Tsch So) further worked over, and a pit house in the refuse mound excavated.



Administration Building, University of New Mexico Field School



Bethorill's Trading Post (Long House), 1900

Clyde Kluckhohn was in charge, with the assistance of F. M. Hawley in charge of the laboratory, Frank C. Hibben in charge of room excavation; Donovan Senter the refuse mound; Wesley Bliss, photographing and mapping; James Ford, recorder; William Mulloy, general assistant; and Robert Lister, laboratory assistant.

The pithouse under the trashmound was dug by Wesley Bliss in May and August, 1937 and further excavated by Dr. A. R. Kelley in 1938.¹⁰⁷ In 1949 the structure was re-excavated and stabilized by Gordon Vivian to serve as an exhibit for the National Park Service.¹⁰⁸

Be 52A. In order to find out just how much deposition had occurred in Chaco Canyon over the years, a trench 18 feet deep was dug in front of Chetro Keti, running at right angles to the canyon wall. Donovan Senter directed the work in August, 1936.¹⁰⁹

Be 53. Another of the small-house sites in what has been facetiously called "Ignorance Hollow" is located at the east side of the entrance to the ruin. F. H. H. Roberts Jr. began the excavation of this site in the summer of 1940 and it was continued in 1941 by Roberts and Paul Reiter for the University of New Mexico. The site contains over 20 rooms and 4 kivas.¹¹⁰

Be 54. During the 1941 field session of the University of New Mexico, Ripley P. Bullen hired 4 Navajos to assist him in excavating this small house on the north side of the canyon across from Be 50-51. From the 14th through the 22nd of August 4 rooms and 3 kivas of this talus house were excavated.¹¹¹

Be 55. At about the same time that Be 54 was being excavated, a nearly similarly situated site was excavated by Theodora Buggeln and Mary Chandler. Only 2 or 3 of the rooms in this small site were excavated.¹¹²

Be 56. A small talus-house across the rincon from Leyit Kin was excavated by the University of New Mexico field school in 1941 under the direction of Paul Reiter. A total of 2 kivas and 6 rooms were cleared.¹¹³

Be 57. This is another of the series of small-house sites dug just east of the University of New Mexico's Field Research Station. Be 57 was excavated under the direction of Paul Reiter during the 1942 field session. All of the rooms in the village plus one pithouse in the trashmound were excavated.¹¹⁴

Be 58. During the 1947 post-war session of the University of New Mexico field school in Chaco Canyon two small-houses just east of the research station were dug. Be 58 was excavated by Carroll Burroughs, assisted for a short time by Stanley Stubbs of the Museum of New Mexico. Burroughs was assistant director of the field school and Paul Reiter director.¹¹⁵

Be 59. The other ruin excavated during the 1947 field school was Be 59. Directing the excavations of this small-house ruin was Thomas Mathews.¹¹⁶ Later, in 1950, during stabilization operations, Gordon Vivian finished the excavation and cleared the burial area to the east of the ruin.¹¹⁷ This burial area fits the description of the one worked over by Pepper¹¹⁸ and photos taken by Pepper of this area bear this out.¹¹⁹

Be 61. It is uncertain just who dug this small low-walled site. Hollenbach, in field notes, mentions a Casa Rinconada Mound 5 which she excavated in 1934.¹²⁰ Dutton says she recalls digging up walls, a skeleton, and a pot during exploratory excavation 300 feet southwest of Casa Rinconada in June of 1934 with Marlon Hollenbach¹²¹ under the School of American Research and the University of New Mexico. Brand mentions a site number 21 dug by

Hollenbach in 1934, but there is no definite location given.¹²²

Bc 64A. On the south side of Casa Rinconada at the foot of the slope are several pithouses. In 1936, Joe Maloney of the School of American Research, excavated most of them.¹²³

Bc 114. A small-house site on the west side of the "gap" excavated by Anna Shepard in 1939. It appeared to be a kiva surrounded by rooms, of which three were dug.¹²⁴

Bc 126. In 1934 a small-house across the canyon from Casa Chiquita was excavated. It is numbered as site number 8 on the Fisher survey. The excavation was done as part of the School of American Research, - University of New Mexico field school that year. J. Charles Kelley, Albert Ely, and Charles Hutchison carried on the work.¹²⁵

Bc 261 and Bc 262. Two small-house sites at the foot of the mesa below Shabik'eschee Village were excavated by F. H. H. Roberts Jr. for the National Geographic Society in 1926. Both sites are just outside the south boundary fence. Bc 261 is the furthest north of the two and is being eroded away by an arroyo running through it. In the arroyo bank a pithouse, which showed up, was excavated at the same time as the ruin. Bc 262 is to the south and appears to be almost completely excavated.¹²⁶

Bc 262. In the south bank of the Chaco Arroyo across from Pueblo del Arroyo, where the old wagon road tops out of the wash, there are a few potsherds and a small mound of trash. This is all that remains of this small-house site, the rest having been washed away by the Chaco River. However, this ruin has led quite a life, for at least three, and possibly more, parties have excavated in it. W. W. Postlethwaite of the School of American Research reports that the ruin was dug in 1925, but that this section had washed away.

He excavated another portion of it in 1931.¹²⁷ It is believed that the 1925 excavations were carried out by Neil Judd of the National Geographic Society. A 1929 aerial photo of the canyon by Charles Lindberg shows the shadow of an excavated ruin at this location.¹²⁸ The last known excavation was by Charles Harding III and Alden Hayes, with 4 ECM workmen, as a salvage project for the University of New Mexico in 1937. They called the site Bc 53, but apparently the number never stuck.¹²⁹

Navajo Archaeology. Although the Navajos have been in the Chaco area almost as long as the Pueblo peoples were, their way of life left nothing as pretentious in the way of dwellings as did that of the Pueblos. Consequently, the archaeologists have paid little attention to Navajo pre-history.

The only work of any importance in Navajo archaeology in the Chaco Canyon area is that of Ray L. Malcolm. In 1937 he made a reconnaissance of the Navajo sites on Chaco Mesa. He encountered not only some 31 Hogan sites, but also describes stone cists and a Navajo burial.¹³⁰

Archaeological Survey. Over the years there have been several attempts to assess the archaeological inventory of the canyon. None have been completely successful. Reginald G. Fisher started a state-wide survey for New Mexico in 1928 for the School of American Research. His Upper San Juan Quadrangle included the Chaco and was begun in the summer of 1930.¹³¹ By 1934 Fisher reported ground plans for all the major ruins, 200 small-house sites, half a dozen pit villages, 12 cave lodges and several small mounds which seemed to be local sites. However, nothing further was done and the report was never published.¹³²

Dutton mentions a survey in progress by Jesse Wilson in 1932.¹³³ This may have been the same survey as that of Fisher.

As part of a Civil Works project in 1934, a petroglyph survey was initiated under the direction of Gordon Vivian. As a part of the project and as an aid to future surveys, a base-line was run from Fenasco Blanco to Wijiit. Steel pipes were set in the face of the cliff on the north side of the canyon to mark the base-line.¹³⁴

In 1947, as part of the University of New Mexico's summer field school, students under the direction of Lloyd Pierson started an archaeological survey of the Pueblo sites in the canyon. The survey was completed that fall by Pierson and served as the basis of a Masters thesis at the University of New Mexico.¹³⁵ At present, portions of the survey are being re-run and additional Pueblo sites and the Navajo sites and features are being added to the original survey.

Dendrochronology. The contributions of Chaco's well-preserved ruins to the study of dendrochronology, particularly in the early years, have been great. In fact, the first dating of any kind to be done was a relative date which showed Pueblo Bonito to be 40 years older than Aztec Ruin.¹³⁶ This was done in 1920 with logs from the Hyde Expedition in the American Museum of Natural History by Dr. Douglass, the originator of the technique.

In 1921 and 1922 Judd sent Douglass samples of timbers from Pueblo Bonito. In September of 1922 Douglass spent some time at Chaco visiting the Pueblo Bonito excavations of Judd in order to determine the best method of obtaining samples from pre-historic beams. Five different ruins were examined for beams while he was there. Judd became very much interested in the whole problem and it was his suggestion to use the direct historical approach by getting beams from the Hopi villages and working backward in time that led to the

National Geographic Society's sponsorship of the first Beam Expedition of 1923. This group visited Chaco that year and made additional beam borings. The expedition was under the joint leadership of J. A. Jeancon and O. S. Ricketson.¹³⁷ In 1929 Judd, M. W. Haury, and Hilding Palmer returned to Chaco to check Judd's notes and to get more beam samples from Bonito for the accelerated dendrochronology program then under way.¹³⁸

During 1930 and 1931 Florence M. Hawley, assisted by Roy Lassettier, both of the University of Arizona, were in Chaco Canyon at the Chetro Kettle excavations doing dendrochronology work. Timbers were also gathered from Pueblo Pintado, Kin Klizhin, Kin Biniola, Una Vida, Tsin Kletzin, Pecos Blanco and Kin Ya'a, Wijiji, and Hongo Pavi.¹³⁹ Hawley continued work in 1932 and 1933, mostly at Chetro Kettle, and produced an excellent series of dates for Chetro Kettle and for the masonry styles present in the big-houses.¹⁴⁰

Pre-historic Irrigation Studies. Over the years one of the puzzles concerning Chaco Canyon has been the method of farming in this dry land. Various individuals have attempted to find or have described possible irrigation systems in the canyon. Hewett first noted what he thought might be canal systems.¹⁴¹ John Corbett trenched some of the supposed ditches near Una Vida in 1935.¹⁴² Both Kirk Bryan and R. G. Fisher had attempted to find some sign of ditches, and later, in 1942, Lloyd Pierson did likewise. F. W. Snyder produced some evidence for a water catchment system near Pueblo Alto¹⁴³ but, as yet, no good evidence for a complex irrigation system in the Chaco Canyon exists.

"Things" on the Mesa Top. During the 1927 season N. M. Judd spent part of his time studying the stairs, "Ceremonial ways", terraces, and other "things"

on the mesa behind Pueblo Bonito and Chetro Kettle. Most of these are sand-pails and Judd was attempting to ascertain their use.¹⁴⁴

Ethnology.

The Navajos living in and about Chaco Canyon have, for a long time, provided a fertile field for the aspiring ethnologist. Studies of pottery-making have been made by Tschopik (1941); ethnobotany by Elmore (1914) and the general aspects of Navajo culture by most of the authorities in the field. The various field schools held in the canyon, although primarily oriented toward archaeology, also provided a base for ethnological research for such people as W. W. Hill, Clyde Kluckhohn, Leland C. Wyman, Flora L. Bailey, Iva Cannon, J. P. Harrington, and many of the others who have worked among the Navajos.

This short report does not fully cover the true contribution of the Chaco Canyon to the study of the Navajo people, but ethnologists, working as they do with living people, are not always prone to lay too much emphasis on exactly where they obtained their information.

Geology

Geological research in the area has received some of its impetus from the archaeologist in his attempt to piece together the story of nature's effect upon primitive man there. Professor Richard W. Dodge of Columbia University made a geological survey of Chaco Canyon in connection with the Hyde Expedition. Dodge did his field work from August 14 to September 9, 1900, investigating evidences of geographical and climatic changes in the history of the canyon. He studied deposits, both human and natural, in the

arroyos, wall weathering, trash mounds and lithological sections of the cliff-face. In a second trip in 1901(?) he studied the cliff-face erosion and cross-sections of pits and trenches through the Pueblo Bonito trash mound and near it. He also made a plane-table map of the sections studied and the surface streams near Bonito.^{144a}

In conjunction with the National Geographic Expedition, Kirk Bryan of Harvard University made studies of the recent geology, including arroyo cutting and deposition etc. as it affected the pre-historic inhabitants. He worked in the area from July 28 to August 9, 1924 and from July 10 to August 1, 1925.¹⁴⁵ He surveyed the pre-historic arroyo, and in doing so, was forced to dig several pits to locate it. The result of his work was a very reasonable explanation of why the ancients pulled out of the area.

As early as 1892 an expedition from the American Museum of Natural History was in the region studying the Puerto Formation. Although this formation does not occur in the Chaco Canyon proper, O. A. Peterson, J. L. Wortman, and T. Gafflerty visited Chaco on reconnaissance.¹⁴⁶

Various U. S. Geological Survey groups have visited the canyon in conjunction with their work on nearby areas and formations, although the canyon itself has never been surveyed by them. In 1915 a group under Clyde Max Bauer and in 1916 and 1917 under John B. Reeside Jr. worked on the nearby coal deposits on the Excavada, Kinnebito, and Myers washes.¹⁴⁷

Carle H. Dane was working on Chacra Mesa in the summer of 1928, evaluating the land and coal reserves.¹⁴⁸

Julian D. Sears made a short reconnaissance trip to Chaco in 1928 while working on the Mesa Verde formation material to the south of Chaco Canyon.¹⁴⁹

Many other geologists have worked in the general area but the canyon itself has never had a detailed study, probably because the geology is relatively simple.

Paleontology of the area has received notice from at least one individual - Stuart Northrop of the University of New Mexico was reported to be studying fossils near Chaco in 1920.¹⁵⁰ Fossil-bearing formations are not too plentiful in the immediate canyon, but to the north and west are a great many, some of them having a great deal of paleontological importance.

Biology

Biological research has been rather infrequent in the Chaco; a reflection, no doubt, of the meager plant and animal population; but what has been done has proven extremely interesting.

Other than the Navajo ethnobotanical study of Elmore, most of the botany has been an assessment via the monument herbarium with the late Ora Clark, a temporary ranger, the largest contributor.

The fauna has fared better from the research standpoint. R. J. Drake has studied the mollusca found in the detritus material in the Chaco Wash as an adjunct of the 1947 University of New Mexico field season.¹⁵¹ Sherwin F. Woods of the Los Angeles City College has done research over the years on the insect *Triatoma*, utilizing, among others, specimens collected in Chaco Canyon.¹⁵² Vernon Bailey, the famed ornithologist, was a visitor to Chaco Canyon on a collecting expedition on October 23, 1908.¹⁵³ Bird-banding activities were carried on by Mrs. Carolle McKinney, starting in June of 1938, at the Pueblo Bonito headquarters.¹⁵⁴ In connection with stream erosion control, wildlife specialist A. E. Borell in April of 1936 made a study of

rodent life and their effect upon earthen structures.¹⁵⁵

Physiographic Studies

Attempts to arrive at some sort of an estimate of the prehistoric population of Chaco Canyon through a study of the physiographic evidences have been carried on by Reginald G. Fisher of the School of American Research. Fisher started his study in 1931 and summed up his conclusions in two publications.¹⁵⁶ In 1934, as part of the study, plans were made to establish an erosion test plot in Hongo Pavie Canyon,¹⁵⁷ but apparently the plans never materialized.

Physical Anthropology

Three short studies comprise the knowledge of the physical remains of the ancient dwellers of Chaco. Carroll Riley, then of the University of New Mexico, measured 17 skeletons from Be's 51, 53, and 59 and found them to be a short, round-headed people with high vaulted skulls.¹⁵⁸ T. Dale Stewart of the U. S. National Museum made an as yet unpublished study of the National Geographic Society Expedition material consisting of 25 male and 42 female skeletons.¹⁵⁹ Donevan Senter studied and described the skeletal material from Tsch So in a detailed report.¹⁶⁰

Weather

Someone has done something about the weather in Chaco Canyon. Since January, 1933 its record has been kept through a cooperative U. S. Weather Bureau observation station.¹⁶¹ Earlier, in 1911, Elsworth Huntington made a trip into Chaco Canyon, gathering material for his work on climatic changes and population changes in arid America.¹⁶²

CHAPTER IV

ESTABLISHMENT AND ADMINISTRATIVE HISTORY

Events Leading Up to Establishment

Basically, the events leading up to the establishment of Chaco Canyon National Monument revolve around the activities of Richard Wetherill and the Hyde Exploring Expedition in Chaco Canyon and the growing concern of conservationists which led to the eventual signing of the Antiquities Act of 1906. No matter what Richard Wetherill's motives or ethics were, his activities stirred certain parties to set the wheels in motion to bring about the Antiquities Act, which, in turn, allowed the establishment of national monuments by Presidential proclamation, with Chaco Canyon one of the first to be proclaimed. Wetherill seems to have been an opportunist, and eventually assisted in the establishment of the monument, but it was mainly the foresightedness of others that brought about the actual establishment of the monument.

The background for the establishment had been developed by the Department of the Interior, as, during the last decade of the 19th century there had been a growing interest in the protection and preservation of areas of scientific and historical interest. For many years prior to the passing of the Antiquities Act there was no legal way to prevent the removal of objects of scientific or historical value from federally-owned land. Many priceless objects had been collected for private collections or sold as curios. The trade and traffic finally became so obviously detrimental that both the Department of the Interior and scientists interested in the material

lost to the public began to search for a way to regulate archaeological and paleontological excavations and to set aside those areas deemed important scientifically and historically for the preservation of those areas for the public good.

As Chaco was somewhat isolated in the late 1800's, rumors of the work of Richard Wetherill and the Hydes apparently were somewhat slow in reaching the outside world. The first publicity on the excavations appeared in the Santa Fe New Mexican on May 1, 1900.¹⁶³ That article seems to have been the result of some undercover investigation, and the results were disturbing. On May 8, 1900 the Commissioner of the General Land Office requested Special Agent Max Pracht by telegram to investigate vandalism at Chaco Canyon.¹⁶⁴ Pracht did his investigation in Durango, Colorado, as it was quite a trip to Chaco. He considered the excavations as being scientific in character and pointed out that there was no legal way to stop them anyway, as had been discovered when Baron Nordenskjöld removed his collection from Mesa Verde and took it to Sweden.¹⁶⁵

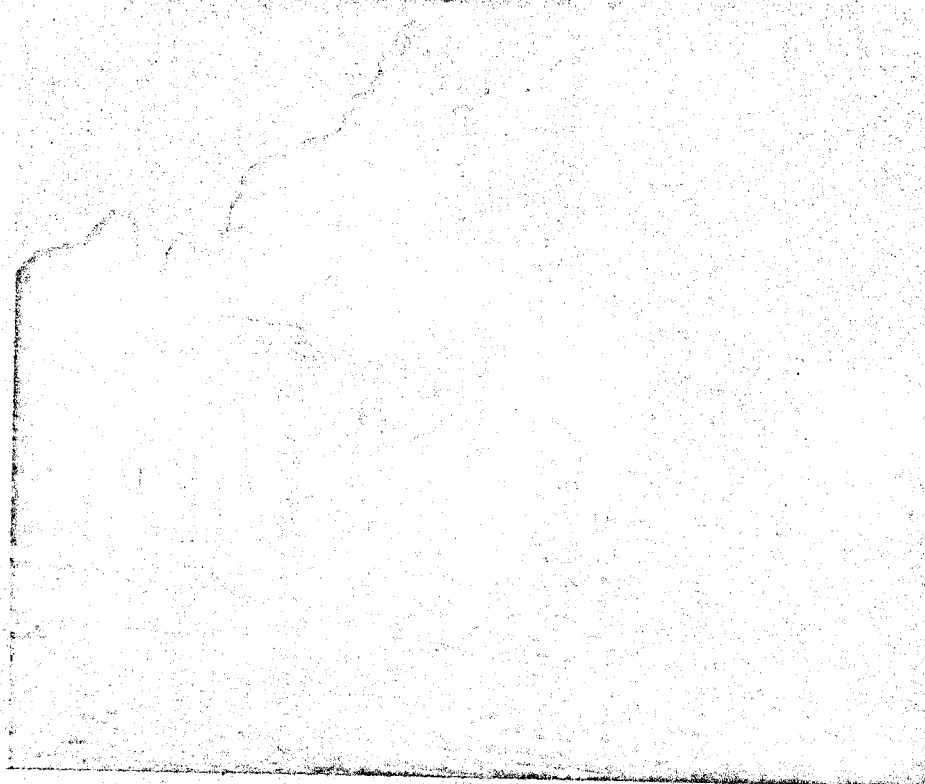
At about the same time as Pracht's investigation, and perhaps because of it, Richard Wetherill was stirred to action. On May 14, 1900 he filed for a homestead on part of a section of land which Holsinger says Wetherill thought contained the Kin Klizhin ruin and some good farm land.¹⁶⁶ Re-survey showed it wrongly described according to Wetherill and he amended his entry on November 28, 1900 to the section which contained Pueblo Bonito, Chetro Ketl and Pueblo del Arroyo.¹⁶⁷

In early November of 1900 the Santa Fe Archaeological Society passed a resolution to protect Chaco Canyon. This resolution was forwarded to the Secretary of the Interior by John R. McPie, president of the society, on November 17, 1900.¹⁶⁸

McPie's resolution prompted the Commissioner of the General Land Office to write to special agent S. J. Holsinger on December 9, 1900, requesting him to "make at once" his examinations of the Chaco Canyon.¹⁶⁹ Holsinger conferred with McPie and ex-governor J. Bradford Prince, an active member of the Santa Fe Archaeological Society, and they both advised him to wait until spring before visiting the Chaco Canyon. This he did, and he did not get to Chaco Canyon for his investigation of Wetherill and the Hydes until April of 1901.¹⁷⁰

Holsinger's report was the antithesis of Pracht's. Wetherill's activities were considered highly suspect by Holsinger, particularly because he removed pre-historic timbers from the building, cut off others, and shipped entire dismantled rooms back to the American Museum of Natural History.¹⁷¹ At last report, these complete rooms still remained uncrated in the basement of the museum.

It is difficult to analyze the situation at this point, for Wetherill has remained a controversial figure, and feelings seemingly were running high. The members of the Santa Fe Archaeological Society, who most probably were pushing the matter with the help of archaeologist Edgar L. Hewett, had the best interests of the public and, particularly, of the state of New Mexico at heart. They undoubtedly had grown tired of seeing the "treasures" of the state removed by outsiders and carted off to the far corners of the



First Trading Post - Against the Rock Wall of Pueblo Anasazi
Photo by Doc. Pepper



Wetherill Trading Post, 1898 - Later the Wetherill Home
Pepper Photo

earth. This was a period when New Mexico was feeling the nationalistic pangs of statehood and was probably overly conscious of anything New Mexican.

Holsinger too seems to have been an idealist at odds with Richard Wetherill and the Hyde brothers because he thought they were trying to pull off a money-making scheme on public domain. It is entirely possible that during the period that Wetherill and his brothers were not working for the Hydes they were out on their own excavating material to be sold wherever they could find a market. This was quite commonly done during those pre-Antiquities Act days.

The Hydes appear to have had no motive other than a strong interest in archaeology for the "relics" and the desire to use their money for a worthy cause and, incidentally, to perpetuate their name on a collection in the American Museum of Natural History. Richard Wetherill had no-one to guide him but the professional archaeologists of the time who found their way to him and used him as guide and excavation supervisor. Indications are that in many instances Wetherill's knowledge, skill, and integrity was greater than that of those who sought to use him. This was a period when eastern museums and other organizations supported by wealthy patrons were seeking collections, with or without scientific data, in the southwest. People like Richard Wetherill got caught in the rush for "things" and discoveries. In Wetherill's case, he seems to have taken the brunt of the attack of the righteously indignant when these attacks should have been shared by others equally guilty but perhaps more cagey.

In his report Holsinger recommended that Chaco Canyon be embodied in a national park and suggested that six¹⁷² townships plus Kin Yaa be set aside in the reserve.¹⁷³ Ironically enough, Holsinger did a little un-scientific excavation himself in some graves in the vicinity of Kin Binsola and Kin Klizhin - "to gain an idea of the resources", he wrote.¹⁷⁴

In April of 1902 Commissioner Binger Hermann of the General Land Office recommended to the Secretary of the Interior the creation of Chaco Canyon National Park.¹⁷⁵ This recommendation was probably the result of his agent's investigations and the correspondence with the Santa Fe Archaeological Society. It was also about this time that E. L. Hewett became recognized as an authority on the conservation problem with regard to prehistoric ruins. He furnished much information to both the state and federal governments over the years in connection with the proposed Antiquities Act and, in particular, its effect or need in the southwest.¹⁷⁶

J. W. Dabham, business manager for the Hydes, wrote to the General Land Office on January 3, 1903, urging the commissioner to sign the papers regarding the proposed Chaco Canyon National Park.¹⁷⁷ On March 31 of the same year he forwarded a letter from Richard Wetherill to the Hydes concerning proposed excavations and said that the Hydes were in no way connected with this proposed undertaking. He further stated that if the Hydes planned any additional excavation they would do it under government permit.¹⁷⁸

On August 19, 1904 the General Land Office wrote to the Secretary of the Interior requesting the temporary withdrawal of Townships 20 and 21 north, ranges 7 to 13 west, both inclusive; township 22 north, ranges 9 to 13 west, both inclusive; and townships 23 to 24 north, ranges 11 through 13 west, all of the New Mexico principal meridian, to prevent attempts to secure title to this land.

Hewett apparently did some investigation for the Department of the Interior about this time. In 1905 he urged, in a publication, the protection of the Chaco ruins in basically what is now the monument. He suggested periodic inspection, limitation of excavation through permit, inspection of excavations and penalties for violations.¹⁷⁹

On April 4, 1905 the Secretary of the Interior wrote to the General Land Office stating that he was temporarily withdrawing for protection of the ruins - township 21 north, ranges 10 and 11 west; section 32, township 21 north, range 12 west; and section 12, township 20 north, range 8 west, New Mexico principal meridian.¹⁸⁰

Special agent Frank Grygla of the Government Land Office made an inspection of the Wetherill entry in the summer of 1905. He did not attempt to decide on Wetherill's motives for wanting the homestead, but he did ascertain that Wetherill had buildings worth \$5,000 on the homestead and in 1905 was raising 60 acres of corn, 5 acres of wheat, and 2 acres of vegetables. He reportedly also had 5,000 sheep, 200 horses, 400 chickens and other range stock.¹⁸¹

Wetherill had indicated to all of the government men who visited him that he was willing to relinquish rights on the ruins to the government. He at first tried to make a deal for excavation privileges, but when the pressure became greater he dropped even that and further offered to give the government rights to ruins on other land which he privately owned in Chaco Canyon.

On the basis of Grygla's report, the General Land Office decided that it would be unfair to Wetherill to deny his homestead. In fact, there was definite evidence that he had done much good by protecting the ruins.¹⁸² On January 14, 1906 Wetherill wrote to the General Land Office relinquishing his claims to the ruins on his homestead.¹⁸³

The Antiquities Act, which was signed on June 8, 1906, gave the Department of the Interior the means by which they could establish Chaco Canyon as a national monument and thereby give it a modicum of protection and preservation.

William Strover, special inspector for the General Land Office, surveyed the three major ruins ^{out of} in Wetherill's 160 acre homestead in October, 1906.¹⁸⁴ This left Wetherill with approximately 113 acres. Wetherill signed formal papers relinquishing further claims to lots 4, 6, 7 and 8 of section 12, township 21 north, range 11 west, New Mexico principal meridian on January 14, 1907.¹⁸⁵ These lots fell within his homestead entry and contained Pueblo Bonito, Chetro Ketl and Pueblo del Arroyo.

With the assurance that these three major ruins would remain definitely in the hands of the government, the way was paved for the establishment of Chaco Canyon as a national monument under the Antiquities Act. Early in 1907 a draft of the act to set aside Chaco Canyon as a national monument was prepared for the signature of the Commissioner of the General Land Office for submission to the Secretary of the Interior.¹⁸⁶ On March 11, 1907 President Theodore Roosevelt signed the proclamation which established Chaco Canyon as a national monument.¹⁸⁷

Administration and Protection

After the establishment of the monument the General Land Office administered the area. Appointed in temporary charge of national monuments on March 25, 1907 was F. C. Dezendorf, chief of special agents in Arizona and New Mexico. From his headquarters in Santa Fe he was in charge of Chaco, El Morro, Montezuma Castle and Petrified Forest.¹⁸⁸ The GLO remained in charge of the monument until the organization of the National Park Service in 1916. However, during the tenure of the GLO no resident custodian was appointed and the protection of the monument was through sporadic inspections by various agents and the good graces of the local Indian trader and the Indian Service people.

The first person who can be considered in any way actually in direct charge of the monument was A. C. "Gus" Griffin who was appointed part-time custodian by superintendent Frank Pinkley of Southwestern Monuments on December 15, 1923. Mr. Griffin had come to Chaco Canyon in 1921 to operate the trading post. Previous to this he had been in the sheep business near Zuni, New Mexico.¹⁸⁹ Griffin had visited Chaco in Wetherill's day and had liked it there.

Mr. Griffin was relieved by custodian Hilding F. Palmer on November 17, 1928, but he and his family remained in the monument and continued to operate the trading post and lodge until 1933.¹⁹⁰

During the custodianships of Palmer, Fish and Julian the monument was usually closed during the winter months and the incumbent escaped to the warm climes of Casa Grande National Monument in southern Arizona.

The first seasonal employee was hired in the summer of 1935 with Lewis T. McKinney filling the position of Seasonal Park Ranger. A second member of the permanent monument staff, a park ranger, was added in November, 1946, with William D. Guillet as the first incumbent. At various times during the past the monument has been run or aided by various interested people and a list of many of them appears in Appendix D with the regular personnel of the monument.

Lands

The land situation has been a complex one from the establishment of the monument until just recently. In proclaiming the monument both private and public land was included. The private land had been given to the old Atlantic and Pacific (now the Santa Fe) Railroad as a land grant back in the 1880's. The grant had given the railroad all of the odd-numbered sections on public land for 50 miles on either side of the right-of-way. Chaco Canyon fell within this strip.

Actually, at proclamation, the government owned only the following whole sections: sections 2, 8, 10, 14, 20 and 30 of twp. 21 north, range 11 west and sections 8, 16, 18, 20, 22, 24, 26, and 28 of twp. 21 north, range 10 west. All but the northeast $\frac{1}{4}$ of section 4, twp. 21 north, range 11 west belonged to the government. The northeast $\frac{1}{4}$ was patented by a Navajo named Walo and is still owned by his family.¹⁹¹ In addition, the government owned the southeast $\frac{1}{4}$ of section 32, twp. 21 north, range 12 west; the southeast $\frac{1}{4}$ of section 28, twp. 17 north, range 12 west; and section 12, twp. 20 north, range 8 west. The last three partial sections lay outside the monument proper at some distance and supposedly contained the large ruins Kin Bineola, Kin Yaa, and Pueblo Pintado, respectively.

It was soon discovered that the description of most of the outlying sections was in error as they did not contain the ruins they were supposed to and other ruins had been missed by the original proclamation. On January 10, 1923 a proclamation by President Calvin Coolidge added the following sections which actually contained the desired ruins: SE $\frac{1}{4}$ of the SW $\frac{1}{4}$ of section 32, twp. 21 north, range 12 west (Kin Dineoka); NW $\frac{1}{4}$ of the NW $\frac{1}{4}$, section 25, twp. 21 north, range 12 west (Kin Klizhin); the SW $\frac{1}{4}$ of section 10, twp. 20 north, range 8 west (Pueblo Pintado) and all of section 24, twp. 21 north, range 11 west (Tain Kletzin).¹⁰³ All of these pieces of land belonged to the government with the exception of the portion containing Kin Klizhin, which then and now belongs to the Aztec Land and Cattle Company.

The Santa Fe Railroad still owned sections 1, 9, 17, and 19 of twp. 21 north, range 11 west and sections 7, 19, 23, 25, 27 and 29 of twp. 21 north, range 10 west. The sections in twp. 21 north, range 11 west and sections 7 and 19 in twp. 21 north, range 10 west were relinquished by deed as the result of a land trade to the United States on October 26, 1922 and title was accepted by the U. S. government on September 27, 1923.¹⁰³ The remaining sections in twp. 21 north, range 10 west were also relinquished to the United States on March 13, 1923, with the exception of a 10-year grazing lease.¹⁰⁴ The United States accepted title for these in May of 1926.¹⁰⁵

Sections 3, 11 and 13 in twp. 21 north, range 11 west and sections 17 and 21 of twp. 21 north, range 10 west had been sold by the Santa Fe Railroad over the years and they had passed into private hands. Sections 11 and 13 had first been bought by Mrs. Richard (Marietta) Wetherill,¹⁹⁶ and apparently later sold to a Mrs. Sammons.

By 1930 sections 3 and 11 were owned by the University of New Mexico under a quit claim deed with the mineral rights reserved by the former owner. Section 13 had been purchased by the University of New Mexico for cash. Sections 17 and 21 were owned by the School of American Research and held in trust for the University of New Mexico and the Museum of New Mexico for archaeological work.¹⁹⁷ The three institutions were under the head of one man, Edgar L. Hewett, who, becoming irked at the slowness of the government in purchasing the privately-owned sections within the monument, had instigated the purchase of these sections for the institutions under him.

A special act was passed by congress on February 17, 1931 which allowed the Secretary of the Interior to offer federal land in exchange for the sections held by Hewett's institutions.¹⁹⁸ Hewett, however, wished to retain the sole rights and privileges to excavation of the ruins for the institutions he represented. The government could not accept this reservation because of federal regulations.¹⁹⁹

Several unsuccessful attempts were made to come to an understanding. With Hewett's demise in 1945 the path became less thorny, but the land-exchange matter "hung fire" until 1949. Finally, it was agreed to by both parties that the University of New Mexico, the School of American Research and the Museum of New Mexico could have "perpetual preferential right of scientific research" on the sections exchanged within Chaco Canyon National Monument.²⁰⁰ In the 15 years of discussion the only major change in the agreement was the addition of the word "preferential" before "right of scientific research."

Another thorn in the side of the monument was the Wetherill homestead. After Richard Wetherill was killed Mrs. Wetherill leased it to a Mr. Miera, a sheepman from Cuba, New Mexico, and later let the property go for taxes. Mrs. H. B. Sammons of Farmington bought it then and rented it for a time to Edward Sargeant for his sheep business.²⁰¹ In February of 1928 a Mrs. Paul (Lucina) Ackerly purchased the homestead from Mrs. Sammons.²⁰²

It was about this period that a rather amusing situation, in retrospect at least, arose. When William Strover of the GLO surveyed out of the Wetherill homestead the three large ruins of Del Arroyo, Bonito and Chetro Kati he mistook a pile of stones for a quarter section corner marker. By using this pile of stone for the starting point and describing it as a quarter section corner he actually surveyed only part of the three big ruins out of the Wetherill homestead and the data was placed on the land plat showing the actual surveyed corner.²⁰³ The error was found in the resurvey of November, 1926.

There was some question as to how Strover's survey should be interpreted. The National Park Service took the stand that it should be considered a metes and bounds survey.²⁰⁴ In 1928, however, the Park Service had built a house which was within the Strover survey, only to realize later that by the metes and bounds survey it was actually within section 12, owned by the University of New Mexico. At the same time, E. L. Hewett was leasing that part of Chetro Ketl outside of the Strover survey from the Wetherill homestead owners. He was excavating Chetro Ketl and, as it was private land, he felt that he didn't need an antiquities permit but only the owner's permission, which he had. The Park Service people felt that he should have an antiquities permit as they considered all of Chetro Ketl by metes and bounds survey as belonging to the monument. With the house on Hewett's land and Hewett digging on Park Service land without a permit, it was rather difficult for either party to make a fuss about the other's misdeeds without a minor explosion. The result was a stalemate with much muttering in both camps until Wetherill property was finally obtained by the government.

Another episode is almost as humorous. In December of 1937 Thomas C. Miller, then superintendent of Aztec Ruins National Monument, found that the the Wetherill homestead owned by Mrs. Lucina Ackerly was about to be put up for sale because of delinquent taxes. Miller contacted superintendent Lewis T. McKinney of Chaco Canyon, and, together with their wives, they paid the back taxes and assumed ownership.²⁰⁵ Two years later, when they assumed full title to the property, the Millers and McKinneys conveyed the property to the U. S. government.²⁰⁶ Mrs. Ackerly was notified of the sale of the property by an Aztec ^{factor} and she instituted suit to repossess the land. McKinney and Miller sent out an S. O. S. and Jesse L. Nusbaum of the Region III office of the National Park Service obtained funds from W. T. Grant, the dime store magnet, to re-imburse McKinney and Miller for the costs of the suit.²⁰⁷ The case finally reached the courts in April of 1942 and was dismissed.²⁰⁸

Mr. McKinney left the park service in 1944 before the deed had been accepted by the government. When it finally came time to sign the deed over to the government all of the owners but McKinney agreed. McKinney evidently felt he should have had something for his troubles. The United States finally had to start a condemnation suit for the property.²⁰⁹ After a motion for final judgement the United States was declared owner in fee simple on June 10, 1952 and the big land headaches were at an end for Chaco Canyon.

•WARNING TO PUBLIC•
TRAVEL BEYOND THIS POINT
•UNCERTAIN DUE TO BAD•
ROAD CONDITIONS
•TRAVEL AT YOUR OWN RISK•

Warning Sign on Chaco Canyon Approach Road



Pueblo Bonito Picnic Area in Use

Impress and Egress

Bad roads have been the curse of Chaco Canyon. Most of the surrounding country is either dune-sand or clay, and if it was either too wet or too dry the roads were impassable. Descriptions of the road conditions of 50 or 60 years ago aptly fit the same roads today.

The earliest roads apparently followed the early exploration trails down the length of the canyon. Schmedding²¹⁰ tells of taking 10 days with a loaded freight wagon from Albuquerque to Chaco via Pueblo Pintado and Cabazon, a distance of 150 miles. A fast buggy could make it in 2 days.

The old road to Farmington and Aztec went out the west end of the canyon where the Escavada and Chaco rivers join. Mrs. Richard Wetherill described it in 1895 as "the old unknown road (used) by early explorers to San Juan from Santa Fe."²¹¹ It and most of the other roads of the region were little more than a pair of wagon tracks across the desert.

During Richard Wetherill's time in Chaco Canyon the road out of the canyon at the Rincon del Camino was cut into the sheer cliff. This afforded a shorter, less sandy route to the north, avoiding the sand dunes on the Escavada. Schmedding's description of it near the turn of the century almost fits its appearance today: "A precipitous trail, not more than 8 feet wide at its broadest part had been out into the wall of the canyon approximately a mile below the ranch."²¹²

A 1917 National Park Service folder describes the trip to Chaco Canyon thus: "The reservation can only be reached by team, mountain hack, and camping outfit from Farmington, New Mexico.... and from Gallup or Thoreau. This service may be procured at from \$6 to \$8 per day, with driver, exclusive of the cost of feed and subsistence. The trip.....will consume from two to three days on the road each way."²¹³

During the period prior to 1946 most of the travel in and out of Chaco Canyon was oriented to the south. Highway 66 was one of the better highways in the state and the road from it to Crown Point, 35 miles south of Chaco, was kept in fair shape. Between Crown Point and Chaco, however, it was mostly up to nature as to whether the traveler would make it or not - and still is, as a matter of fact. Prior to 1929 the south approach road went through "The Gap" across the I. K. Westbrook ranch and joined another road from White Rock to Crown Point some 20 miles south of Chaco. The superintendent reported in June of 1929²¹⁴ that of the two south approach roads this was the best, but that it was on private land and the owner closed it off with fences and locked the gates so visitors were having to go via Seven Lakes.

One of the biggest assists to travel thru and to Chaco Canyon occurred in September 1928 when the state highway department built a wooden bridge over the Chaco wash at Pueblo Bonito and another wooden bridge over the Escavada wash.²¹⁵ Prior to this the Chaco was crossed, water and quick-sand permitting, just south of Pueblo Del Arroyo.

In 1946 Chaco road orientation was turned northward with the relocation and oiling of the road between Cuba and Farmington, New Mexico.²¹⁶ This route made only 28 miles of primitive road between the highway and Chaco. As a result, Farmington replaced Gallup as the shopping center and the Denver and Rio Grande Railroad replaced the Santa Fe Railroad for freight for the present-day inhabitants of Chaco Canyon.

Roads within the monument have usually remained in good shape, but only at the cost of constant vigilance by the personnel stationed at the monument. The first big road project was never completed. This was a road to a new headquarters site on the mesa above Pueblo Bonito. The road was started by the Chaco Civilian Conservation Corps Camp about 1939 or 1940. It left the north entrance road at the head of the Rincon del Camino and climbed the mesa on the east side of the rincon until it reached a point midway between Pueblo Bonito and Pueblo Alto where the new headquarters was to be. In 1953 the culverts were torn out of the partially completed road to be used elsewhere.²¹⁷

The second road project was almost as ill-fated as the first, but it still survives after much rehabilitating. This is the road known as Route 2 from Pueblo Bonito to the new Fajada View headquarters area. Construction was started on this route in June of 1953 by the Ascroft Construction Company of El Morro, New Mexico. Contract price was \$20,000. Very few culverts were emplaced on this road and the end result was evident even before the road was finished. Heavy rains during the summer of 1954 completely washed out the road where-ever it crossed a stream channel.

One incident will serve to illustrate both the work that went into repairing this road and the problems that were dealt with in hiring the local Navajos for laborers. The major repair job on the road was the replacement of the washed-out road fill on the Mockingbird drainage with an 11-foot multiplate culvert. A crew of about 13 Navajos were employed to put the culvert together. The day after the culvert was completed and the crew ^{laid} off, one of the workers died in his hogan, apparently of a heart attack. Navajo religion ordains that the evil spirit of the dead remains near the place where the person dies. If he had died in the culvert no Navajo would have dared to enter it for fear of being cursed. Nor could many of them have been induced to use the road over the culvert.

Buildings

The earliest non-Indian buildings in Chaco Canyon were probably those mentioned by Judd as being built by the L C Cattle. Co.²¹⁸ These were stone buildings under the cliff north of Penasco Blanco and were built for ranch headquarters. Date of building is unknown, but undoubtedly it was before 1896.

The Wetherill ranch and trading post was built over a period of years from 1897 on. The first building was a one-room trading post, built by Al and Clayton Wetherill against the back wall of Pueblo Bonito in October of 1897.²¹⁹

The rest of the buildings, including a larger trading post, a residence for the Wetherills, and a bunk-house, were built just west of Pueblo Bonito. The residence was built in July of 1898.²²⁰ On the east side of Pueblo del Arroyo Wetherill built a bunkhouse for employees on the northeast corner and a boardinghouse for transients, known as the "Hotel," on the southeast corner.²²¹

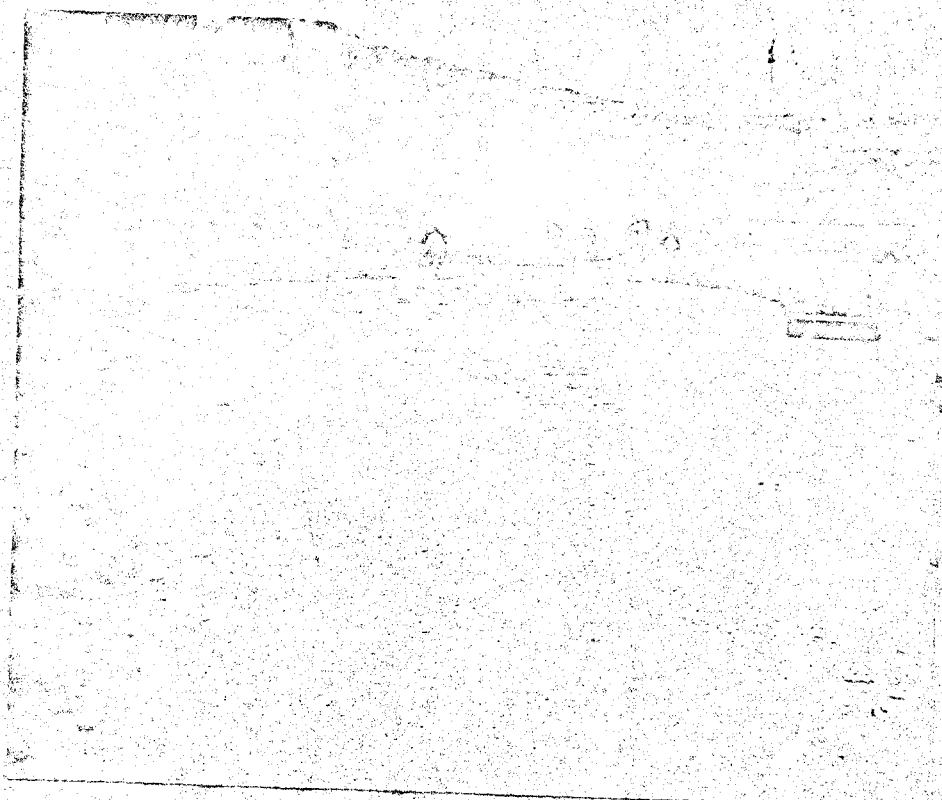
The Wetherills also had a long, cellar-like excavation made in front of Pueblo Bonito for a store-room for wool and Navajo blankets.²²² Various rooms in Pueblo Bonito were used either as-is or rebuilt by the Wetherills for store-rooms, laboratories, dark rooms and the like.

The last addition to the Wetherill buildings was sometime after 1929 when a small one-room building was built just east of the "Long House" or old Wetherill ranch bunk-house and forge.²²³ This served as a residence and studio for artist Warren Hollins, father of Mrs. Gus Griffin.

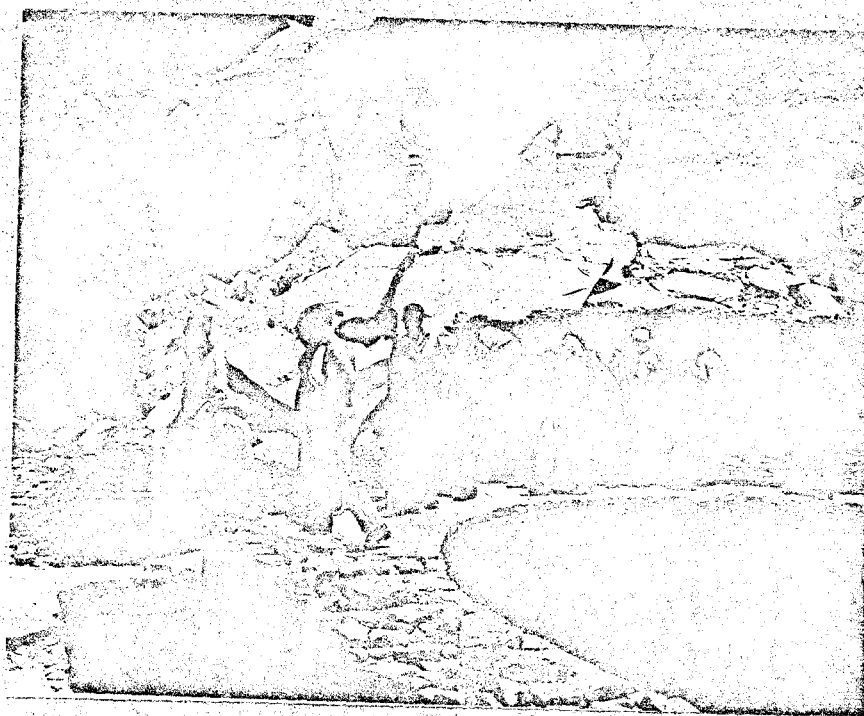
Over the years until they began to be torn down in 1952,²²⁴ the Wetherill buildings served a multitude of purposes and people. They were abandoned and rebuilt at least twice and probably more. Built with stone from Pueblo Bonito and del Arroyo, with some of the roof timbers coming from these old pueblos and others being hauled over the long trail from Cuba, they served their purpose faithfully and well.

The year 1928 saw the first (and only until 1951) National Park Service building being built. A custodian's residence of native stone was constructed at the southwest corner of the Pueblo Bonito trash pile.²²⁵ The work was done by custodian Hilding F. Palmer.

In 1936 the University of New Mexico and the School of American Research commenced construction of a research station across the canyon from Pueblo Bonito. Construction of the hogans, which were to serve as dormitories and laboratories, was started in October, 1936 under the supervision of Paul Reiter and Gordon Vivian.²²⁶ By April of 1937, 6 hogans had been finished and 3 rooms of the main building were well on the way.²²⁷ The main building, when completed, consisted of a dining hall in the center and kitchen



Office and Museum Building at Pueblo Bonito



Park Ranger and Visitors on Trip through Pueblo Bonito

to the west of it. The two wings running north from the dining hall consisted of apartments and rooms for the staff. The building was last used by the University of New Mexico field school of 1947.

Modern conveniences were slow to reach Chaco. Custodian Miller wrote that he had been using Coleman lanterns up until September of 1935 when gas was piped into the house.²²⁸ Four years later the gas lights were removed and electric lights were installed with the advent of a power plant for the monument.²²⁹ Cesspools were built in 1932 and 1937.²³⁰

During the tenure of custodian McKinney the first office structure other than the office in the custodian's residence, appeared - a white tent, about 7 x 9 feet, ensconced on a flat area just south of the southeast corner of Pueblo Bonito. It appeared in May of 1939 with a companion tent for the temporary ranger to live in.²³¹ Later the tent disappeared and a portable wooden office building with museum space mysteriously took its place. Although there is nothing in the records to show where it came from, it can now be safely revealed that the building was "borrowed" from a government construction camp at Concho Dam, New Mexico by superintendent McKinney.

In September of 1951 the contract was let for two new houses to be built at the Fajada View headquarters site, the first buildings of the new headquarters development. Robert B. Jenkins of Harrington was the contractor.²³² The new houses were ready for occupancy in June of the next year.²³³

A Civilian Conservation Corps camp, with ugly buildings covered with black tarpaper, was constructed in 1939.²³⁴ In 1943, two years after its last occupancy, the camp was dismantled by the army.²³⁵ It was located just inside the south boundary west of the road going south through Fajada Gap.

Trading Posts and Lodge Operations

Soon after they commenced excavating operations the Hyde expedition found it convenient and profitable to open a trading post to supply their Indian laborers. The one-room post, built against the back wall of Pueblo Bonito in October, 1897²³⁵ soon expanded into a chain of posts covering northwestern New Mexico with Pueblo Bonito as post headquarters.

Amsden²³⁶ lays a great deal of stress on the part that the Hyde Exploring Expedition and its string of trading posts played in the stimulus given the Navajo rug business. It came at a time when Navajo rugs were deteriorating rapidly in quality and design. The company paid high prices for good rugs made in the old tradition with native dyes and George Pepper, a member of the group, experimented with native dyestuff and led the crusade to keep the art pure.

Curio stores in New York City and Phoenix, Arizona were operated by the Hyde Expedition and at the height of their business venture Navajo rugs were being sold in all of the big eastern cities. Center of it all was the trading post at Pueblo Bonito.

The trading post passed into the sole ownership of Richard Wetherill in 1903, when the Hyde Exploring Expedition sold out its interests.²³⁷ Richard Wetherill continued to run the post, and apparently the "Hotel" or boarding house for transients that had been built near del Arroyo, until he was killed in 1910.

Little is recorded concerning the post after Wetherill's death. A Mr. C. F. Spader is reported as operating a trading store at Pueblo Bonito about 1912-1914 and living in the ruin.²³⁸ In 1916 Edward Deenan and Elias Armijo are listed as Indian traders at Pueblo Bonito.²³⁹

A. C. (Cus) Griffin moved to Chaco in 1921 to operate the trading post there.²⁴⁰ He also ran a lodge in the old Wetherill buildings. In 1929 the post was called Smith's Store but it is not known who was operating it at that time.²⁴¹ Sometime in the thirties Col. A. P. Springstead took over operation of the trading post and Griffin continued to operate the lodge until he left the Chaco in 1936. Springstead is first mentioned as operating the post in August of 1932,²⁴² and he continued to do so until December 1937 when he sold out to Arthur B. Tanner.²⁴³ During Springstead's period, at least, and from then on the trading post was located in the old Hyde Expedition building at the southeast corner of Pueblo del Arroyo and was operated as an NPS concession.

Tanner had a series of men operating the post for him. His son Stanley was there for a while in 1938 and was replaced by Jack Lavender²⁴⁴. Kirk Clawson ran it the early part of 1941²⁴⁵ and Glen Whiteman took over in December of 1941.²⁴⁶ Whiteman continued to run the post until it was closed early in the war. In March of 1946 Whiteman bought the post from Tanner and reopened it;²⁴⁷ running it until he moved it out of the canyon in June 1949 because of concession-contract difficulties.²⁴⁸ The Chaco Canyon Trading Post is now just outside of the north boundary of the monument.

Ranches

The Chaco country has been sheep country since the Chaco Navajos first brought them in. The first white ranchers tried to raise cattle with some success at first. About 1879 the L. C. Cattle Company, owned by a Dr. Lacy, moved into the Chaco country, probably building their headquarters under the cliff at Penasco Blanco.²⁴⁹

During the same period the Carlisles, another cattle outfit, were in the country. The Carlisles wintered their cattle in the Chaco and spent the summers near Monticello, Utah.²⁵⁰ Both the L. C. and Carlisle groups left the Chaco for southeastern Utah before 1896.²⁵¹

The Wetherill Ranch, which became more and more important to Richard Wetherill as he did less and less digging, was known as the Triangle Bar Triangle or Pueblo Bonito Ranch.²⁵² Around 1900 it was principally a horse ranch with some 500 to 1000 horses on the ranch at any one time. Wetherill also had a few cattle and quite a few sheep, but the principal business of the ranch was buying and trading Indian horses.

After Wetherill's death the ranch was leased for a time by Mr. Hieru of Cuba for sheep grazing.²⁵³ In 1920 it was being leased to Edward Sargeant, who owned or leased much of the railroad land in and about the Chaco Canyon for sheep grazing.²⁵⁴ Sargeant's lease on the railroad sections in the eastern section of the monument ran out in 1946 and this was the last legal grazing within the confines of Chaco Canyon National Monument.

Fences

In order to keep Navajo and white ranchers' sheep out of the monument and preserve the ground-cover for soil conservation measures it was deemed necessary to fence in the monument. Fencing was commenced in May of 1934.²⁵⁵ A contract for the final 40 miles of fencing was let to Cook and Ransom Construction Company in October of 1935. Construction started on October 15 and thirty men were employed on the job. It was completed in January 1936 with a total of 12,642 rods (39.5 miles) of fence, 2 cattle guards and 18 gates. The gates have mostly been left open ever since.²⁵⁶

Sargeant's permit to graze sheep on several unfenced sections on the east side of the monument expired in 1946. These sections were fenced in the fall of 1947.²⁵⁷

Actually, the first portion of the monument to be fenced was the detached section near Crown Point which contains Kin Ya'a. S. F. Stacher, superintendent of the Pueblo Bonito Indian Agency at Crown Point was reported in 1916 as having "erected a fence enclosing about 5 acres around Kin Ya'a" which, however, has not been completely wired."

Soil and Moisture Conservation

As the Chaco canyon has an easily-erodable soil, an elegant arroyo, and is subject to torrential summer cloudbursts, it was early recognized that an important part of the preservation program would be to prevent the ruins from being destroyed by the ever-enlarging arroyo. As early as 1930 a dam was built by the University of New Mexico and the School of American Research along the east side of Chetro Keti.²⁵⁹ This was to prevent the adjacent intermittent stream from overflowing into Chetro Keti during extreme runoff.

Kin Kletso was utilized as a guinea-pig in the study of methods of bank protection and stream control during 1934 by William Chauvenet of the University of New Mexico.²⁶⁰ The Chaco Arroyo was coming uncomfortably close to the walls of Kin Kletso, so, in order to formulate methods for the furtherance of this type of work, a great deal of time and effort were spent on the arroyo in front of Kin Kletso in testing dam and revetment types.

In 1935 the Soil Conservation Service entered the picture, and, under a cooperative agreement with the National Park Service, 94,810 ²⁰¹amarisk, willow, cottonwood and wild plum trees were planted in the Chaco wash during April and May. That fall Lewis T. McKinney was made project manager of the Chaco Soil Conservation Service program. On the 12th of November a long-term project was begun. This project over the years has involved the National Park Service, the Soil Conservation Service, and the Civilian Conservation Corps under various agreements. In spite of the then involved land situation, the program was highly successful.

During 1935 and 1936 dams, water spreaders, and dikes were built in the side arroyos; a revetment was built at Pueblo del Arroyo; an earth dike was built between del Arroyo and Rin Hletoe; and all of the small arroyos in Mockingbird canyon were plugged. ²⁰²

A rodent-control program was initiated in April of 1936 by Adrey Borell to study means of keeping rodents from destroying the earth ²⁰³ ~~and and ^{revelments}~~ crops. In June and July of the same year western wheat, sacaton and Indian rice grasses were planted on the flood-water diversion dams. Over 1,000 feet of diversion dikes were

built, 3 rock and wire sausage dams and 3 cable fences were completed. ²⁰⁴ During the winter months trees and willows were planted in the arroyos. ²⁰⁵

The yearly soil and moisture reports read much like the above paragraph for almost every year up until sometime during the early 1950's when it was decided that the project could finally be declared on a maintenance basis. During the term of the CCC camp in the Chaco they did the work and after the camp was disbanded the National Park Service continued the work with its own crews. The end result is a well-stabilized arroyo slowly filling its channel and a good ground-cover resistant to sheet erosion; and, most important of all - protected ruins.

Water Sources

While at times water which eroded the land was quite plentiful, that which could be used for human consumption has always been scarce in the Chaco. There are a few scattered springs and natural catchments, but none of them are dependable and the well near the arroyo has been the principal water source.

There have been a few attempts at drilling wells in the canyon but with little success. The Hyde Exploring Expedition drilled a six-inch, 350 feet deep well at the southwest corner of Pueblo Bonito and for their time and money received no flow but only brackish water.²⁶⁶ The National Park Service also tried to drill a well some 275 feet deep at the southeast corner of Pueblo Bonito in 1930 with the same results as above.²⁶⁷

The first well on record is the one dug by the Hyde group in the arroyo just under the walls of Pueblo del Arroyo.²⁶⁸ This was a well about 20 feet deep and it may be the same one still in use near del Arroyo. In 1929 a well near this same location was dug (redug?) by the trader.²⁶⁹

The National Geographic Expedition also dug a well during their tenure in the canyon.²⁷⁰ This was presumably in the arroyo near their camp immediately in front of Pueblo Bonito. This may be the well later called the government well, one-half mile from the latter and still in use today. It may also be the same well reported as being 100 yards from Wetherill's house in 1929.²⁷²

Sometime during the 30's the University of New Mexico developed a well also. The National Park Service house is reported as having been attached to the University water line in August, 1934.²⁷³ Two years later the University removed the water line and water for the house had to be hauled from the government well.²⁷⁴ The next year the CCC mobile unit erected a water tank by the cliff in back of Pueblo Bonito which furnished water for their camp and the NPS house as well.²⁷⁵

The establishment of the CCC camp in 1939 near Pajada Bonito necessitated the excavation of another well in the Chaco Arroyo. This well was dug out with a drag-line and a large metal culvert was replaced and the dirt put back around the outside.²⁷⁶ This well was abandoned with the CCC Camp but later rehabilitated in October 1961 as the water source for the residences in the Pajada View headquarters area.²⁷⁷

Not all of the wells were permanent. One well dug by the
Chaco people in the 1880s dried up in 1888 and was
abandoned. ²⁷²
The expected liquid.

The digging of the wells in the arroyo has furnished a fairly
steady supply of palatable water. It has also produced one of the most
popular summer occupations - clearing out the wells after a dry
spell. It has long been a Chaco tradition that the arrival of new
personnel in the canyon is the signal for the Chaco men to go
on the rampage and fill the wells with silt and contaminated water.
To the tourists question of "what do you do out here" this is one
of the answers.

Communications

Telephone communication reached Chaco Canyon National Monument
in January and February of 1931. ²⁷³ Two phones, one in the superintendent's home and one in the trading post, were installed when a
National Service telephone line was built across the monument. In
February of 1933 the system was changed from a grounded line to a
two-wire dial system. ²⁷⁴ Radio station KQWA was established in
August of 1930 at Chaco Canyon. El Morro National Monument, some
30 miles south of Gallup, New Mexico, was even more isolated than
Chaco. Chaco did have a telephone and the radio communication with
El Morro was good so Chaco could relay El Morro's radio messages
to the world via telephone. On December 31, 1931 the call letters
of the station were changed to KTF 706. ²⁸¹

Civilian Conservation Corps Camp

During the days of the CCC two separate groups were in Chaco Canyon at various times. A mobile unit for ruins stabilization composed of Indian CCC enrollees was organized under Robert S. Harris on July 7, 1937.²⁸² Under an agreement with the Indian Service the National Park Service furnished supervision, tools and equipment; the Indian Service furnished the manpower, camp and subsistence. The camp was established in tents just east of Pueblo Bonito along the face of the cliff.

Charlie R. Steen assisted Harris during August until R. Gordon Vivian was appointed as his assistant.²⁸³ In September Harris left and Vivian was placed in charge.²⁸⁴ The mobile unit is still in existence but CCC participation ended sometime in late 1941 or early 1942.

Under cooperative agreement with the Soil Conservation Service camp, construction for an SCS-NPS CCC camp was begun in June of 1939 by the Army.²⁸⁵ The camp was located west of Fajada Butte along the road south out of the canyon toward Seven Lakes. William Chauvenet was made camp superintendent in July²⁸⁶ and on August 22, 193 men arrived.²⁸⁷

From September 1939 until the camp was abandoned on November 15, 1941 the group worked on a great many soil conservation and other projects.²⁸⁸ Dikes, roads, and fences were built. Stabilization work on Threatening Rock was done. Several of the enrollees served as guides for visitors wishing to go through Pueblo Bonito.

During its occupation the camp was inhabited mostly by boys from the big cities of Pennsylvania. The contrast of Chaco was too much for most of them for they rarely re-enrolled. In the spring of 1943 the camp buildings were dismantled and taken away by the army.²⁸⁹

Stabilization

Stabilization of prehistoric ruins had its inception around the turn of the century. Several archaeologists, principally N. M. Judd and E. L. Hewett in the Chaco area, became interested in the preservation of excavated ruins for the benefit of the public. The concept was formalized by Hewett in his statement that the ruins should be preserved as a ruin, "not as a ghastly restoration."²⁹⁰ Hewett taught his students to excavate without unnecessary demolition; to repair for preservation with the least possible alteration with no re-construction and no restoration other than what was absolutely necessary for preservation. He also taught them how to reset loosened stone and broken walls to strengthen them while still preserving the jagged aspect of the wall as nature had left it.²⁹¹ Hewett also suggested using models in place of reconstruction.

It remained for one of Hewett's students to bring these concepts into polished reality. Over the years one man has symbolized ruins stabilization in Chaco Canyon and the southwestern United States - R. Gordon Vivian. Based on the precepts fostered by Hewett and adding the results of his own experiments, Vivian has come up with a system of ruins stabilization that is recognized as standard by the National Park Service.

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Some of the earliest attempts at stabilization in the Chaco were by Judd at Pueblo Bonito and Hewett at Chetro Ketl, both in the 1920's.

Frank Pinkley of the NPS spent some \$1500 in stabilizing Pueblo Bonito in April and May of 1925. The next May Pinkley, assisted by Martin Jackson, was again busy stabilizing Bonito.

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Martin Jackson was again sent to Chaco in 1928 and worked on Bonito during June and August of that year.

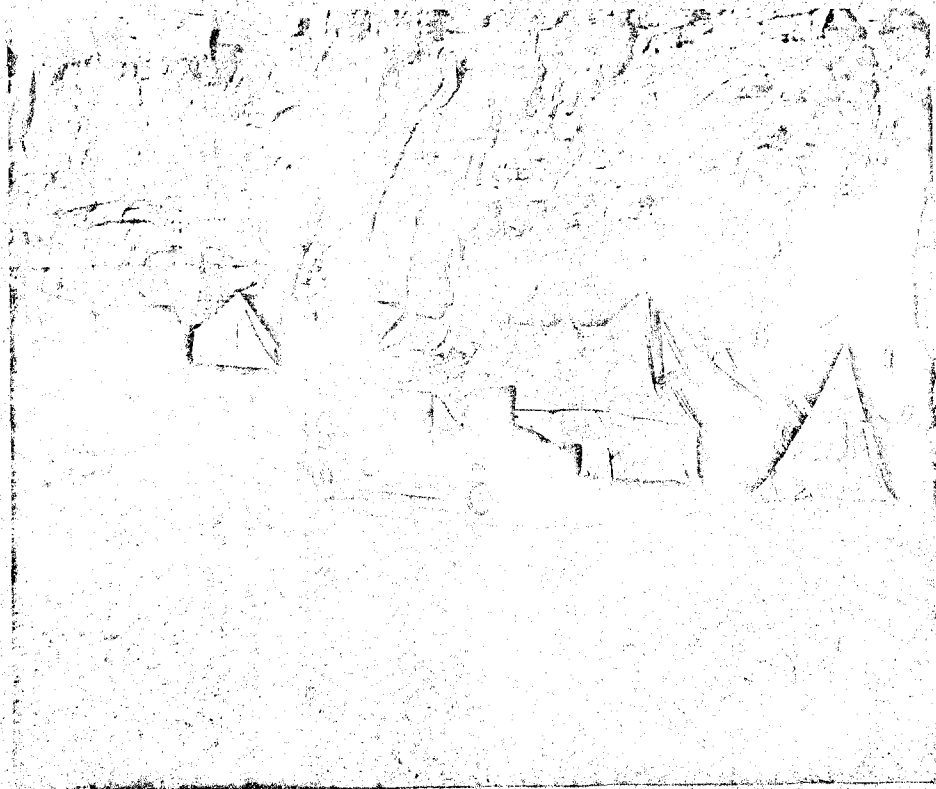
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Work along stabilization lines was accomplished on Bonito in June and September of 1929 by custodian Palmer, and in the summer of 1931 by custodian Fish, who also worked on del Arroyo that year.

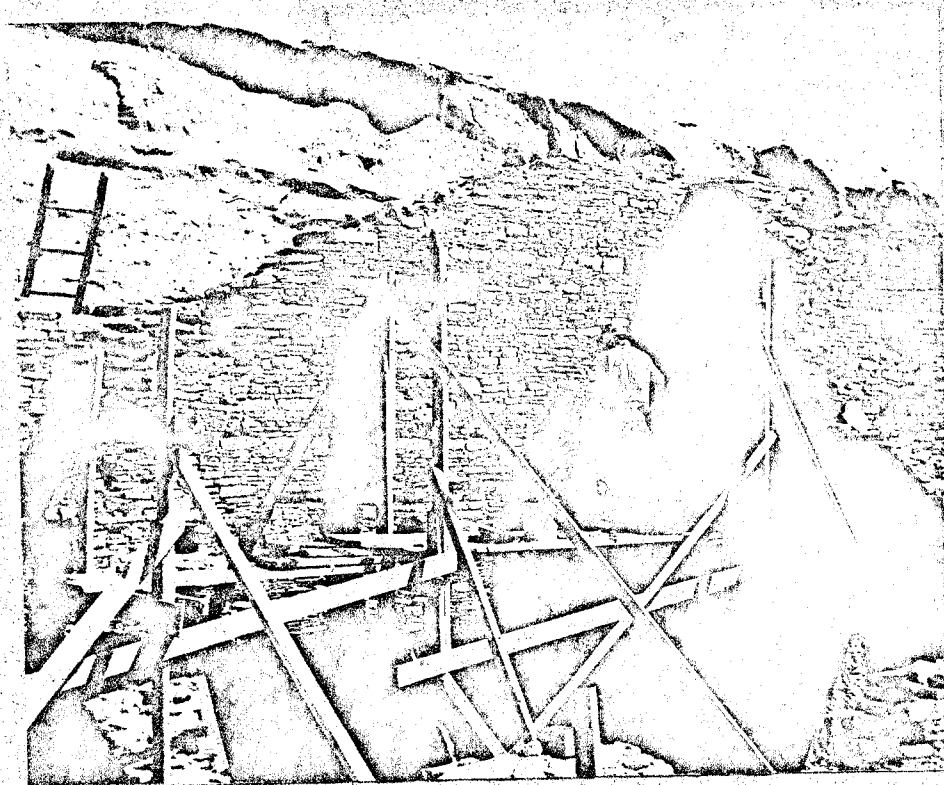
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A major stabilization project, the first really big one, was begun in December, 1933 under a Civil Works project. Gordon Vivian was in charge of the crew which worked on both Chetro Ketl and Pueblo Bonito. Drainage plans for Chetro Ketl and Talus Unit No. 1 were established; the back wall of Chetro Ketl was cleared of debris; a dam on top of the cliff was constructed to keep water from pouring into Talus Unit No. 1 and piers were put under Kiva G of Chetro Ketl for support. The large kiva at Pueblo Bonito was also repaired. This project continued through February of 1934.

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Civil Works Project Camp Near Pueblo Bonito, 1933



Stabilizing Chettro Kettle

The CCC mobile stabilization unit was founded in July of 1937 and it was soon hard at work on the major stabilization of Pueblo Bonito. Gordon Vivian was the leader with Herbert K. Boone as senior foreman.²⁹⁸ The program on Pueblo Bonito continued, at times intermittently, as weather, squaw dances and lack of money interfered, through 1941.

Occasionally during this period time was spent for short periods on other major ruins of the Chaco. Kin Klishin was patched in March of 1938.²⁹⁹ Parts of Wijiji and Pueblo Pintado received attention during the year 1940.³⁰⁰ The Mobile Unit moved to Aztec for a short period in July 1941 after having repaired the damage done to Pueblo Bonito by the fall of Threatening Rock.³⁰¹

The war slowed stabilization work down to what the custodians could accomplish by themselves. Under custodian McNeil repairs on the great kiva in Chetro Kettle were accomplished from May to June 1943.³⁰² Custodian Sowers did stabilization in Bonito during December 1945 and the early part of 1946.³⁰³

The mobile unit was in action again by the spring of 1947. That year and the following spring was spent in repairing flood damage to and stabilization of Chetro Kettle.³⁰⁴ New Alto was stabilized during May and June of 1947.³⁰⁵

The sites dug by the University of New Mexico on the south side of the canyon and Pueblo del Arroyo were stabilized from 1949 to 1950.³⁰⁶ Of the small house sites Bc50 was stabilized in 1949 and Bc's 51 and 59 in 1950.

As major stabilization jobs have been accomplished the ruins have been placed on a maintenance status. This means that each year the ruins are checked over and any necessary repair work is done as soon as possible. Meanwhile, the stabilization of the other major ruins to bring them to a maintenance status is being completed as fast as time and money allow.

Visitor Services

The spirit of Frank ("Boss") Pinkley was instilled early in the staff of Chaco Canyon National Monument. The accent at Chaco has been on a warm and friendly personal contact with the visitor. In the early days this was easily done as the visitation was small, but as time and highways have advanced so have the travel figures with the unfortunate result that less time can be spent with the visitors.

The basis of the interpretive program has been the guided trip through Pueblo Bonito, the largest of the ruins in the canyon. Guide fees of 25¢ were first initiated in May, 1933³⁰⁷ and on infrequent occasions, mostly depending on available time, guided trips were taken through Chetro Kettle and other ruins, both excavated and unexcavated, in the canyon.

A field museum was established in 1931 by the University of New Mexico and the School of American Research at Pueblo Bonito Lodge in rooms which were rented for this purpose from Gus Griffin.³⁰⁸ The museum was in the end room of what is now known as the Long House. Sam Hadelson plastered, painted, and built cases for it.³⁰⁹ The museum was a branch of the Museum of New Mexico, with installation, cataloging, labeling, etc. under the direction of Paul Reiter, then curator of archaeology at the Museum of New Mexico.³¹⁰ Basically, the exhibits were of items from Chetro Kettle, to which were added in 1936 other loan-collections from the University of New Mexico and the School of American Research.³¹¹ This collection and the museum were moved to a reconstructed room in Pueblo Bonito sometime before 1937. In 1937 the museum was again moved, this time to the old blacksmith shop behind the custodian's quarters.³¹² Custodian McKinney's "borrowed" building served as both office and museum from 1940 on. Over the years many hands have added to and re-arranged the exhibits.

The Casa Rinconada Trail, a self-guiding ruins trail with an explanatory booklet, was added to the interpretive program in June of 1951.³¹³ The trail takes the visitor through Casa Rinconada and the group of small-houses excavated by the University of New Mexico on the south side of the canyon across from Pueblo Bonito.

Signs were put up by the state highway department at the
Thoreau and Otis turnoffs designating the way to Chaco Canyon Nation-
al Monument in October 1937.³¹⁴ The Pueblo Bonito headquarters rock
sign was constructed in May 1940 and the two monument entrance signs
were made in November of that same year.³¹⁵

The first mention of the Pueblo Bonito area picnic area was in
1932 when the custodian salvaged the old brush hogans left over from
a Navajo squaw dance in the canyon and constructed a ramada (sun
shade) over the picnic tables.³¹⁶ The area had no real campground
until the one in Gallo Canyon was constructed in 1955, although the
picnic area had previously served as an expedient campground too.

Art Work

Chaco Canyon is far from being qualified as a scenic area; yet,
the majestic ruins have had an appeal to many artists. The earliest
art work was that done by R. H. Kern who was with the first expedi-
tion into Chaco Canyon in 1849³¹⁷ and sketched many of the ruins
and scenes in the canyon for the report which Simpson was to make.

The reconstruction drawings of the various ruins as they must
have looked in their heyday were a favorite subject of the artists.
Professor Kenneth Conant of Harvard did a series of four drawings
of reconstructed Pueblo Bonito in 1926.³¹⁸ Robert Coffin did a
series on the various ruins in the canyon for Hewett and the School
of American Research in 1934.³¹⁹ W. Langdon Kihn did Pueblo Bonito
again for the National Geographic Society in 1939,³²⁰ as did Paul
Coze for Arizona Highways in 1951.³²¹

W. E. Rollins, father of Mrs. Gus Griffin, was a resident artist and lived in a one-room house between the Long House and Pueblo Bonito.³²² He is reported as being there as early as 1920³²³ and as having shown 20 studies of Chaco Canyon at the New Mexico State Museum in June and again in December of 1932.³²⁴

The medium of photography was first introduced, unsuccessfully, to Chaco by Jackson in 1877. Others have done better and among the many should be mentioned the works of Victor Mindeleff in 1887 for the Smithsonian Institution; Richard Wetherill and George Pepper for the Hyde Exploring Expedition in the 1890's;³²⁵ and O. C. Havens for the National Geographic Society in the 1920's.³²⁶

Post Offices^{326a}

The post office of Putnam, New Mexico was established at the Wetherill Ranch, Chaco Canyon on April 12, 1901 and was discontinued on February 28, 1914. The post office was named in honor of Frederick Ward Putnam of Harvard University who was director of the Hyde Exploring Expedition. Richard Wetherill was appointed as the first postmaster on April 12, 1901. Charles F. Spader, appointed on June 27, 1912, was the second and last postmaster. Who served as postmaster between the time of Wetherill's death in 1910 and Spader's appointment in 1912 is apparently not recorded.

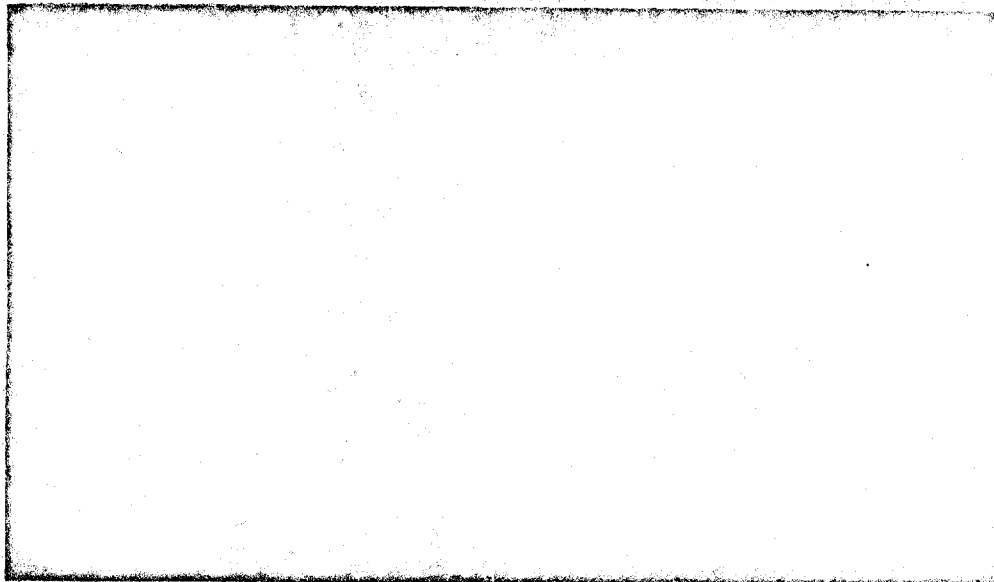
The post office of Chaco Canyon, New Mexico was established on May 26, 1936 and discontinued on September 26, 1942. The various postmistresses and one postmaster, with dates of appointment, were as follows:

Mrs. Thelma Kirk Springstead	May 26, 1936
Mr. Willis Calvin McHatt Jr.	March 26, 1938
Mr. Arthur B. Tanner (acting)	June 17, 1939
Mrs. Dorothy Phelps (acting)	Sept. 18, 1939
Mrs. Carolle McKinney (acting)	March 1, 1941
Mrs. Nellie R. McKenzie (acting)	July 26, 1942

Accidents and Disasters

Two deaths from falls from the cliff in back of Chetro Kettle and Pueblo Bonito have been recorded. Charles Reeder Jackson, 14, of Baltimore, Maryland fell from the cliff in June of 1932 and was killed instantly. ³²⁷ James Mulholland, 17, a CCC enrollee from Philadelphia, Pa., also fell from the cliff and died of injuries. ³²⁸

Mrs. Guy Exon, wife of seasonal ranger Exon, developed pneumonia in September, 1950. Contact was established with Mesa Verde National Park by radio. They in turn notified the superintendent of Aztec Ruins, who made arrangements to have a plane flown to Chaco for Mrs. Exon. The plane landed in front of the University of New Mexico research station and Mrs. Exon was safely removed to the hospital in Farmington, New Mexico. ³²⁹



Soil and Moisture Structures at Work in the Chaco River



Typical Navajo Homestead in Chaco Canyon
Tomasito's Hogans in the Gap

In September of 1952 Mrs. Hastings, wife of superintendent Homer Hastings, fell while climbing Pajada Butte and fractured her ankle. She was lowered from the side of the butte with ropes and taken to the hospital. 330

Two floods over the years were prominent because of the damage they caused. A flood in August of 1947 did considerable damage to the back wall and interior rooms of the Chetro Kettle ruin. The flood was the result of a heavy rain on the mesa behind Chetro Kettle and the inability of the stream-bed to carry the resultant torrent of water. The water overflowed the stream banks and surged into Chetro Kettle, tearing down walls and softening the fill so that other walls settled and cracked. 331

Another flood in September of 1954 did much damage to the new road between Pueblo Bonito and the Fajada View headquarters. One room of the old Wetherill trading post was demolished and several culverts on the road to the Rincon del Camino approach were washed out. 332

Cemetery

Halfway between Pueblo Bonito and Kin Kletso a small fenced area designates the Chaco Canyon cemetery. The cemetery was established in the days of the Wetherill Ranch and Trading Post. A great many whites and Indians have been buried in this small plot; most of them in unmarked graves.

The most prominent plot in the cemetery is that of Richard Wetherill who was buried there after his murder on June 22, 1910. The plot is now marked with a bronze marker. Wetherill's wife Marietta requested that her ashes be placed in his grave upon her death and her request was honored on July 15, 1954.³³³

A few of the burials have been recorded. Neil Judd, leader of the National Geographic excavations in Pueblo Bonito tells of burying the daughter of old Padilla in the cemetery in 1923.³³⁴ Otto Henley, apparently a passerby or nearby rancher, buried a Navajo child at the request of the parents on January 18, 1944.³³⁵ Superintendent McNeil and Gordon Vivian buried an 18-year-old daughter of Charlie Atencios in May, 1949.³³⁶ Arthur White, Jack Williams and Gordon Vivian buried Wellito Julian, a Navajo man, in August, 1952.³³⁷ J. W. Moore Jr., a seasonal ranger, learned of Navajo death customs while assisting at the burial of Charlie Tancitty Atencios' 14-year-old sister in the cemetery in August 1955.

Navajo custom dictates that the name of the dead not be mentioned, hence the lack of names in the above listing. These people also have an extreme fear of the dead; consequently if they can prevail upon the whites to do their burying for them they are relieved of much fear and of the necessity of a ceremonial cleansing. This accounts for the popularity of the Chaco cemetery among the Navajos of that region. Strangely enough, the cemetery is located on the trash pile of an old Pueblo ruin, a place where the Pueblos frequently buried their dead as well.

Maps and Mapping

The first map to show the Chaco area was the Plano Geografico Map by Miera y Pacheco showing the Father Escalante exploration of the four-corners area.³³⁸ The monument townships were surveyed in 1882 by Hardy and Lindsey and later resurveyed in 1921 by Glenn R. Haste.³³⁹

An excellent topographic map of Chaco Canyon National Monument was made in 1922 by Mr. R. P. Anderson, former captain in the AEF Corps of Engineers, for the National Geographic Society.³⁴⁰ Unfortunately, it was unavailable to the general public until Judd published his report on Pueblo Bonito in 1954.

An interesting map of the Chaco Region, from the historical standpoint, appears in a geological report by Bauer and Reeside.³⁴¹ The map shows most of the old trading posts in the vicinity at that time, many of which are no longer in existence today.

Actually, except for the Anderson map which covers but a small section of the Chaco region, no good maps of the area exist. The map status as summed up by Brand,³⁴² with the addition of the above information, just about covers the sum total of maps of the Chaco.

Schools

Other than the archaeological field schools of the University of New Mexico only one other school is mentioned in the records. A school for the "little tots" was set up in Chaco Canyon in September of 1935.³⁴³

S. S. Chaco Canyon

Chaco Canyon has had the honor of having an ocean-going vessel named after it. The S. S. Chaco Canyon was built in the Swan Island yard of the Oregon Shipbuilding Co., Portland, Oregon and was completed by December 15, 1944. The vessel was 525 feet long and 69 feet wide and had a draft of 32 feet and a cargo capacity as a T-2 Tanker of 141,118 barrels. When loaded, the vessel displaced 22,000 tons and it was driven by a General Electric turbo-electric turbine rated at 6600 horsepower. Speed when loaded was 15 knots, and the vessel had a cruising radius of 9,000 miles with a crew of 48. The vessel spent the war years mostly in the Pacific but did make at least one trip to New York.³⁴⁴

Threatening Rock

The saga of Threatening Rock begins early in Chaco History. The rock, a huge hunk of the cliff behind Pueblo Bonito, had apparently pulled away from the cliff during the days of Pueblo Bonito's occupation. It worried the Bonitoans, so they braced it from underneath with pine logs and placed a retaining wall and fill in front of it to keep it from falling over.

It was noticed by Holsinger in his inspection of the canyon in 1901. He called it the "Elephant."³⁴⁵

About 1932 custodian Haret Julian became worried about Threatening Rock and asked the engineering staff of the National Park Service for advice. In a report of his investigations engineer J. B. Hamilton came to the conclusion that Threatening Rock might stand another 1,000 years if the supports of the Bonitoans were repaired and continued and the material in the crevice behind the rock were removed. 346

That same year Dr. John Y. Keur became interested in the problem and he made an intensive study during the summer of 1933 of the bracing and movement of the rock. His recommendations were similar to engineer Hamilton's but he felt that a constant check should be kept on the rock to determine its movements. 347 His recommendations were put into effect and a system of rods was installed which would show movements of the rock.

Nothing much seems to have happened until 1937 when, under the supervision of superintendent McKinney, work was commenced on removing the material from the crevice behind the rock. It was felt that this would relieve pressure on the rock and eliminate material that was retaining moisture. 348

Meanwhile, back at headquarters, associate regional geologist V. W. Vandiver came to the momentous conclusion from the sanctuary of his office that "it is my firm opinion that we have nothing to fear from the so-called 'threatening rock' at Chaco Canyon and any efforts or planning on the part of our staff to control the situation are unnecessary and could best be directed to problems of importance - Now." ³⁴⁹

Engineer Hamilton, with the data gathered through the use of the measuring rods, revised his thinking on Threatening Rock in a report of April 1937. ³⁵⁰ The data indicated to him that the rock was falling faster than the 1000-year rate he had anticipated and he felt something more drastic had to be done. He suggested tying the monolith to the cliff with cable and bars.

The chief engineer, F. A. Kittredge felt that tying the rock to the cliff or placing concrete under the rock was impossible. The first, because the ties would not hold if the base were undercut and the second, because of the cost and the destruction of the archaeological values. He did feel that the method of the ancients was sound and that with some protection of the soft foundation ³⁵¹ wind erosion could be stopped and the undercutting effect diminished.



Threatening Rock.

The letters between the technicians kept flowing but did little to alleviate the worry in the mind of custodian McKinney. During the summer of 1940 the rock showed further signs of falling and McKinney intensified his crys of "do something." Archaeologist Steen offered the suggestion that the top portion of the rock be removed,³⁵² but this was rejected by the engineering staff because they had been unable to make "precision engineering studies."³⁵³ They further felt that "owing to personnel changes in the CCC Camp at Chace...Regional Engineer Diehl (did not) believe it to be an opportune time to go into detail as to precision studies of Threatening Rock movement."³⁵⁴

On the night of January 21, 1941 Threatening Rock moved nine inches west and twelve inches out and approximately 12 tons of material fell behind it.³⁵⁵ The next day at about 3:24 p.m. Threatening Rock fell. Not only was Pueblo Bonito crushed, but so was custodian McKinney. Usually a verbose man, he wrote not his usual 4 to 8 pages for his superintendent's monthly report, but for January, 1941 his report covered only half a page.

McKinney spent the early afternoon of January 22 taking pictures and recording measurements of Threatening Rock. About 3 p.m. he ran out of film and went to the trading post to obtain a new supply. While at the trading post he felt the concussion and heard the fall.³⁵⁶

Several of the Indian CCC enrollees saw the fall and described it to D. S. King as follows: ⁹⁵⁷ "The slab leaned out about 30 or 40 feet from plumb, settled sharply, and when it hit solid bottom, rocks from the top of it were broken loose and propelled into the ruin. The lower two-thirds then pivoted on its outer edge and fell down the slope toward the ruin. The whole mass broke into many fragments and an avalanche of rocks catapulted down the slope and into the walls of the back portion of Pueblo Bonito."

"Welito Wero, age 50, Navajo CCC workman for the Mobile Unit, fell to the floor of one of the tents in the camp and cried, for many of the Navajos in the locality believed that the world would come to an end when the Rock fell.²

It was decided to leave the debris of the fall of Threatening Rock as it lay. Damage to the ruin was much less than anticipated and it was felt that the fall would serve to illustrate the dangers which the prehistoric inhabitants had feared.

The fall of the rock received widespread publicity, in spite of hopes by some offices that it could be glossed-over. Newspapers all over the country published before-and-after pictures, and letters began to pour into the monument offering condolences and asking for further information. Even in repose, the rock looked threatening.

Legends and Tales

Many legends and tales, both white and Indian, have been told over flickering fires about the Chaco. The Zunis tell of their ancestors splitting in search of the middle of the world; and of one group, the Sword Swallower Fraternity or Hlewekwe, going north and east to where they built the Chaco Ruins. ³⁵⁸ The Navajos tell of a great chief of the Pueblos living in the Chaco at either Sanito or Pueblo Alto. He was named "The Gambler" and he taught the Navajos their gambling games the hard way - by taking away their jewelry and women in the games. He was finally vanquished by his half-brother, the riches returned, and the Navajos moved on in their wanderings - sadder but wiser.

One of the latter-day tales which concerns both whites and Indians points out the odd turn of events which ^{can} occur when one is dealing with two cultures. Custodian McNeil had been extremely bothered by Navajo horses walking over his cattle-guards on the north entrance road and helping themselves to the fine grazing on the monument. He knew that horses did not appreciate the smell of bear so he contrived to obtain a bear-hide to place on or near the cattle guard. This he did with fine results as the Indian horses no longer feasted upon National Park Service grass.

Sometime later McNeil was accosted by an irate trading-post operator who asked McNeil just what he (McNeil) was attempting to do to his trading-post business. McNeil, somewhat bewildered, asked just what he meant. It then dawned on the trader that McNeil was not aware of what he had actually done by using the bear-hide. Most of the trader's Indian customers came from the north side of the monument through a gate next to the cattle-guard with their wagons. When McNeil put up the bear-hide he, in effect, closed off that gate for the Navajos because they, believing that the evil spirits of their ancestors often dwelt within the body of a bear, would not come close to the hide or through the gate. The trader's business fell off at a rapid rate until he discovered what had happened and McNeil had changed his "horse-scarer" to a scheme more in keeping with Navajo religion. After the bearskin was removed the trader's business once more picked up and things went back to what was considered normal for Chaco Canyon National Monument.

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All of the Field Notes and Field Reports are from the files of R. G. Vivian unless otherwise noted. Superintendent's Monthly Reports and Custodians Monthly Reports can be found in the files of Chaco Canyon National Monument. Custodian's Monthly Reports were also mimeographed and distributed as part of the Southwestern Monuments Reports from Coolidge, Arizona during the period 1932 through 1941.

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APPENDIX A

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

A PROCLAMATION

(No. 740 - Mar. 11, 1907 - 35 Stat. 2119)

WHEREAS, it is provided by section two of the Act of Congress, approved June 8, 1906, entitled, "An act for the preservation of American Antiquities," "That the President of the United States is hereby authorized, in his discretion, to declare by public proclamation historic land marks, historic and prehistoric structures, and other objects of historic or scientific interest that are situated upon the lands owned or controlled by the Government of the United States to be National Monuments, and may reserve as a part thereof parcels of land, the limits of which in all cases shall be confined to the smallest area compatible with the proper care and management of the objects to be protected;"

AND WHEREAS, the extensive prehistoric communal or pueblo ruins in San Juan and McKinley Counties, Territory of New Mexico, principally embraced within the Chaco Canyon and generally known as the Chaco Canyon ruins, situated upon the public lands owned and controlled by the United States, are of extraordinary interest because of their number and their great size and because of the innumerable and valuable relics of a prehistoric people which they contain, and it appears that the public good would be promoted by reserving these prehistoric remains as a National Monument with as much land as may be necessary for the proper protection thereof.

NOW, THEREFORE, I, Theodore Roosevelt, President of the United States of America, by virtue of the power in me vested by section two of the afore-said act of Congress, do hereby set aside as the Chaco Canyon National Monument, subject to any valid and existing rights, the prehistoric ruins and burial grounds situated in San Juan County, New Mexico, more particularly located and described as follows, to wit:

Sections 7 and 8 and sections 16 to 29, inclusive, township 21 north, range 10; sections 1, 2, 3 and 4, sections 8 to 14 inclusive, and sections 17, 19, 20 and 30 in township 21 north, range 11; the south half of section 12 in township 20 north, range 8; the southeast quarter of section 32 in township 21 north, range 12; the southeast quarter of section 28 in township 17 north, range 12; the southeast quarter of section 17 in township 17 north, range 10, all west of the New Mexico Principal Meridian, New Mexico, as shown upon the map hereto attached and made a part of this proclamation.

Warning is hereby expressly given to all unauthorized persons, not to appropriate, excavate, injure or destroy any of the prehistoric ruins or remains hereby declared to be a National Monument or to locate or settle upon any of the lands reserved and made a part of said monument by this proclamation.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the seal of the United States to be affixed.

DONE at the City of Washington, this 11th day of March in the year of our Lord one thousand nine hundred and seven and of the Independence of the United States the one hundred and thirty-first.

(Seal)

THEODORE ROOSEVELT.

By the President: ELIhu ROOT, Secretary of State

B
APPENDIX A

BY THE PRESIDENT OF THE UNITED STATES OF AMERICA

A PROCLAMATION

(No. 1826 - Jan. 10, 1928 - 45 Stat. 2037)

Whereas, General Land Office supplemental plats showing retracements and resurveys in T. 20 N., R. 8 W., T. 21 N., R. 10 W., T. 22 N., R. 11 W., and T. 21 N., R. 12 W., New Mexico Principal Meridian, accepted March 29, 1923, covering the principal ruins in the Chaco Canyon National Monument, New Mexico, as set aside by Presidential Proclamation dated March 11, 1907, (35 Stat., 2119), disclose that certain of the ruins intended to be included in and preserved by the Chaco Canyon National Monument do not fall within the present monument boundaries as shown on said supplemental resurvey plats; and

Whereas, the public good would be promoted by extending the boundaries of said National Monument to include the ruins aforementioned.

Now, Therefore, I, Calvin Coolidge, President of the United States of America, by authority of the power in me vested by section two of the act of Congress entitled, "An Act for the preservation of American antiquities," approved June 8, 1906 (34 Stat., 225) do proclaim that the SW $\frac{1}{4}$, Sec. 10, T. 20 N., R. 8 W., all of Sec. 24, T. 21 N., R. 11 W., NW $\frac{1}{4}$ and NE $\frac{1}{4}$, Sec. 25, and the SE $\frac{1}{4}$ SW $\frac{1}{4}$, Sec. 32, T. 21 N., R. 12 W., New Mexico Principal Meridian, are hereby reserved from all forms of appropriation under the public land laws, subject to all valid existing claims, and added to the Chaco Canyon National Monument, and that the boundaries of the Chaco Canyon National Monument in San Juan and McKinley Counties, state of New Mexico, are now as shown on the diagram hereto annexed and made a part hereof.

Warning is hereby expressly given to all unauthorized persons not to appropriate, injure, destroy or remove any feature of the Monument and not to locate or settle upon any of the lands thereof.

The Director of the National Park Service, under the direction of the Secretary of the Interior, shall have the supervision, management, and control of this Monument as provided in the act of Congress entitled, "An Act to establish a National Park Service and for other purposes," approved August 25, 1916 (39 Stat., 535) and Acts additional thereto or amendatory thereof.

In WITNESS WHEREOF, I have hereunto set my hand and caused the seal of the United States to be affixed.

DONE at the City of Washington this tenth day of January in the year of our Lord one thousand nine hundred and twenty-eight, and of the Independence of the United States of America the one hundred and fifty-second.

(SEAL)

CALVIN COOLIDGE.

By the President:

FRANK B. KELLOGG,
Secretary of State.

APPENDIX C
TRAVEL FIGURES

1925	2,000	1941	1,724
1926	2,500	1942	552
1927	1,500	1943	955
1928	1,425	1944	2,953
1929	2,750	1945	1,291
1930	2,300	1946	1,573
1931	1,780	1947	1,359
1932	1,609	1948	1,228
1933	5,817	1949	1,372
1934	6,068	1950	1,871
1935	6,565	1951	2,604
1936	7,717	1952	3,159
1937	8,014	1953	3,817
1938	6,271	1954	8,581
1939	3,618	1955	12,408
1940	2,245		

It should be noted that the methods of counting visitors varied greatly over the years. For some years all travel through the area, including that on the state road, was figured in the yearly travel. In other years only the visitors to Pueblo Bonito were counted.

APPENDIX D

PERSONNEL LIST

Superintendents

A. C. Griffin	Part-time Custodian	12/15/23-11/17/28
Hilding F. Palmer	Custodian	11/18/28-6/30/31
Frank L. Fish	Custodian	7/1/31-12/15/32
Hurst R. Julian	Custodian	12/16/32-6/30/34
J. L. Patterson	Acting Custodian	6/34-7/34
Thomas C. Miller	Custodian	7/23/34-11/30/36
L. R. Caywood	Acting Custodian	12/22/35-1/5/38
Lewis T. McKinney	Custodian	1/1/37-7/16/42
Edwin Alberts	Acting Custodian	6/1/40-6/30/40
		10/15/41-10/31/41
Claude M. McKenzie	Custodian	7/17/42-11/9/42
Irving McNeil Jr.	Acting Custodian	10/17/42-11/17/42
	Custodian	11/17/42-11/16/44
Joseph H. Toulouse Jr.	Custodian (in absentia)	11/17/44-1/4/45
Theodore C. Sowers	Custodian	1/5/45-11/22/46
Irving McNeil Jr.	Custodian	10/15/46-8/20/50
S. J. O'Keefe	Acting Custodian	8/21/50-10/15/50
Meredith M. Guillet	Superintendent	10/16/50-12/16/51
Homer F. Hastings	Superintendent	12/17/51-7/13/53
Arthur H. White	Acting Superintendent	7/14/53-11/6/53
Glen T. Bean	Superintendent	11/7/53-2/6/56
Charles C. Sharp	Superintendent	2/18/56-

Park Rangers

William D. Guillet	Park Ranger	11/18/46-9/15/47
Thomas W. Mathews	Park Ranger	5/8/49-9/1/50
Francis H. Elmore	Park Ranger	10/7/50-5/28/52
Arthur H. White	Park Ranger	6/22/52-12/22/53
Lloyd M. Pierson	Supervisory Park Ranger	4/22/54-

Maintenancemen

Jesse G. Marble	Maintenanceman	3/24/54-
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APPENDIX D (Continued)

PERSONNEL LIST

Seasonal Park Rangers

Lewis T. McKinney	7/14/35-9/30/35
Homer F. Hastings	5/27/36-9/30/36
	5/1/37-9/1/37
	5/15/38-9/30/38
Francis H. Elmore	5/18/39-9/30/39
Robert H. Lister	5/16/40-8/31/40
Claude M. McKenzie	7/1/40-9/21/40
James C. Porterfield	5/31/41-8/31/41
Theodore C. Sowers	6/6/41-9/22/41
Charles Lange	5/1/42-9/1/42
John J. Collier	5/30/43-8/31/43
Gra M. Clark	6/10/45-8/20/45
Larl C. Johnston	6/22/46-9/7/46
Saxmael A. Orem	5/16/48-10/10/48
Harmon D. Maxson	6/16/48-8/30/48
Guy R. Exon	7/18/50-9/1/50
Jack R. Williams	6/9/52-9/8/52
Octavio Romano	6/9/53-9/18/53
Richard D. Myers	8/1/53-8/29/53
Donald W. Page	7/14/54-10/22/54
Jackson W. Moore Jr.	6/18/55-10/15/55

Guides

Jack Lavender	11/23/36-12/31/36
W. A. Karlin	7/20/37-7/30/37
Jack Lavender	4/23/38-5/15/38
Charles Turner	5/1/39-5/18/39
James C. Porterfield	5/18/41-5/30/41
Jack R. Williams	3/29/51-6/19/51

Miscellaneous Without Pay

Theron Cupp	Winter, 1931
Jean Griffin	Summer, 1932
Fatsy Griffin	September, 1932
Pierre Allbritten	September, 1932
Dr. and Mrs. John Keur	July, 1933
A. P. Springstead	December, 1934