



---

## The Chaco Phenomenon

Author(s): J.T. Brody

Source: *Archaeology*, Vol. 36, No. 4 (July/August 1983), pp. 57-61

Published by: Archaeological Institute of America

Stable URL: <http://www.jstor.org/stable/41728722>

Accessed: 12-09-2016 18:48 UTC

---

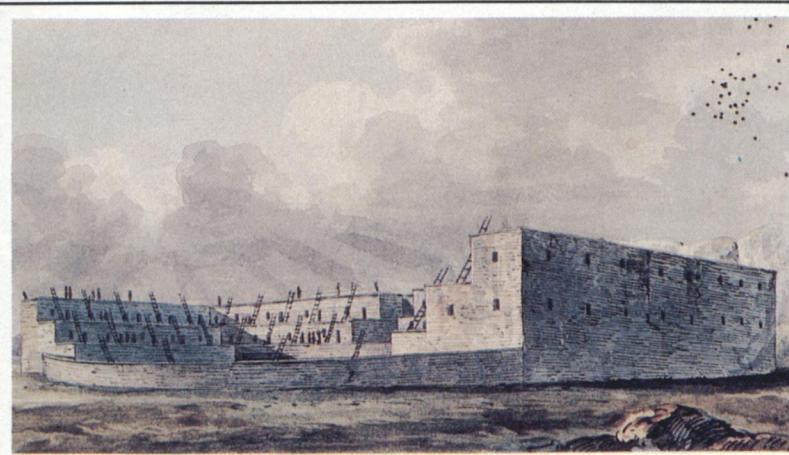
JSTOR is a not-for-profit service that helps scholars, researchers, and students discover, use, and build upon a wide range of content in a trusted digital archive. We use information technology and tools to increase productivity and facilitate new forms of scholarship. For more information about JSTOR, please contact support@jstor.org.

Your use of the JSTOR archive indicates your acceptance of the Terms & Conditions of Use, available at  
<http://about.jstor.org/terms>



*Archaeological Institute of America* is collaborating with JSTOR to digitize, preserve and extend access to *Archaeology*

# ARCHAEOLOGY NEWS



*Pueblo Bonito, the largest and most beautiful of the ruins in Chaco Canyon, viewed from the north rim of the canyon. The Great Kiva of Pueblo Bonito, in the center of the plaza, could hold hundreds of people for special ceremonies. (Inset) This imaginative reconstruction of Pueblo Hungo Pavi, still unexcavated, was painted in 1849 by artist Richard Kern, who accompanied Lieutenant James Simpson on a brief excursion to Chaco Canyon to study the ruins.*

## The Chaco Phenomenon

by J.J. BRODY

The massive stone ruins of Chaco Canyon in northwestern New Mexico have an enduring attraction and mystery that cut through time and across cultures. The term "Chaco Phenomenon" has been used to refer to those ruins and to the Anasazi culture and their complex social

system that built and used the spectacular buildings when they were new a millennium ago. It also refers to the continuing efforts of many different people today to touch somehow with their imaginations those who lived at Chaco so long ago.

The Chaco Phenomenon is, appropriately, the name of a new exhibition at the University of New Mexico's Maxwell Museum of Anthropology in Albuquerque. Featuring more than 200 artifacts excavated at Chaco during the past 100 years, the exhibit explores the most recent findings and theories about Chaco society. Many of the objects on display

are on loan from the collections of the American Museum of Natural History, the Smithsonian Institution, the National Park Service, the Academy of Natural Sciences in Philadelphia, the Minnesota Historical Society, the Museum of New Mexico, and the School of American Research in Santa Fe.

The Chaco Phenomenon opened at the Maxwell Museum in Albuquerque on June 12, 1983, and will remain there until May 27, 1984. It will travel to the Denver Museum of Natural History, the American Museum of Natural History, and to other major institutions in the United States.

## The earliest explorations

Written records and pictures of the ancient stone buildings of Chaco Canyon were first made in 1849, when a military force under the command of Lieutenant Colonel John Washington was sent into Navajo Indian country on a peace-keeping mission. A young lieutenant of the Corps of Engineers, James H. Simpson, was assigned to survey the territory. It was a bloodless mission that ultimately negotiated peace with the Navajo bands living in the Chuska Mountains of northeastern Arizona. Their route took them through Chaco Canyon, and it was Simpson's duty and pleasure to explore the ancient ruins that stood silent and massive in the desert landscape.

Simpson, accompanied by artist Richard Kern, his cartographer brother Edward Kern, and a Mexican guide named Carravahal, was given permission to leave the main party and stay at Chaco for several days. During that time Simpson explored the ruins, collected potsherds and even excavated in some rooms, while the Kern brothers painted pictures and made maps under his direction. All members of the small group speculated about the age of the ruins, wondering about who had built the structures and why the people had left, and what had become of them and their descendants. Simpson's *Journal*, illustrated by the Kerns and published three years later, is the oldest eyewitness account of Chaco of which there is a record.

Many of the ruins had been named by 1849 by sixteenth and seventeenth-century Spanish explorers and resident and neighboring Navajo and Pueblo Indians. Other guides with Washington's force, including a Navajo chief called Sandoval and an official of Jemez Pueblo named Hosta, knew the Chaco ruins. Simpson also had known of their existence before the expedition began. He believed that they were about 700 years old, and speculated that they might have been an outpost of the Toltec civilization of the Valley of Mexico almost 2,000 miles to the south. The others agreed that they were of great age, but Sandoval and Hosta said the Chaco buildings had been constructed by the Anasazi, the ancestors of the local Pueblo Indians. Although Simpson's guess about the age of the ruins was remarkably accurate, native traditions identifying Chaco with the Pueblo people rather than the Toltecs have long proved accurate.

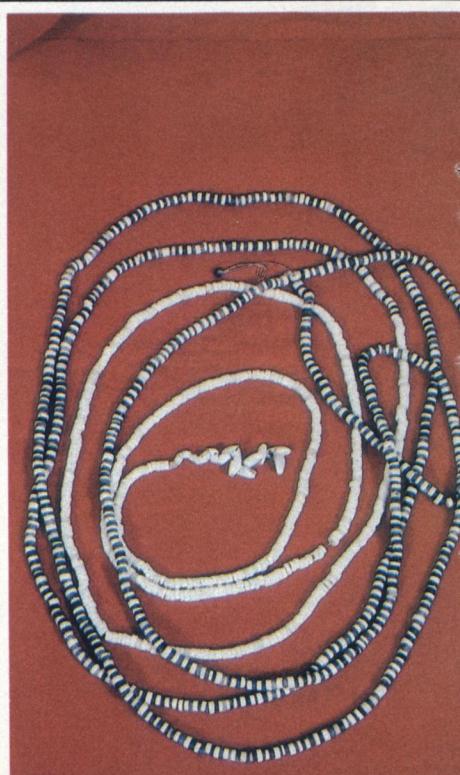
Other surveys touched briefly at Chaco between 1849 and 1896. Some excavations were conducted by souvenir hunters who left no record of their speculations other than vandalized ruins. The first methodical work, from 1896 to 1900, was sponsored by the Hyde brothers of New York. George Pepper of the American Museum of Natural History and Richard Wetherill, the rancher and Indian trader

who homesteaded in Chaco Canyon, led that expedition, which concentrated on Pueblo Bonito, the largest of the Chaco ruins. The work of the Hyde expedition provided a great deal of information about the technology of the Chaco people, and confirmed that the ruins were indeed prehistoric remnants of the historic Pueblo cultures.

A generation later, from 1920 to 1927, archaeologist Neil Judd of the United States National Museum, with the support of the National Geographic Society, led the next major research campaign at Chaco. This innovative investigation examined the natural environment as well as the history and anthropology of Chaco culture. Excavations at Pueblo



(Above) This pottery effigy of a woman was recovered at Pueblo Bonito by the Hyde expedition at the turn of the century. Height, 14 centimeters. (Center) The same site yielded a deer bone spatula inlaid with turquoise and jet. Length, 15 centimeters. (Below) Archaeologists excavating Chetro Ketl in 1932 discovered this jet and shell necklace in a sealed niche in Chetro Ketl's Great Kiva. Ten of these necklaces were discovered, ranging in length from two to five meters.



Bonito were completed and another large ruin, Pueblo del Arroyo, was uncovered. In addition, sites hundreds of years older than these "classic" ruins—Shabik'esh-chee Village, for example—were also excavated. The study of the dynamics of culture change and the complex interplay of humans and nature at Chaco Canyon that was climaxed by the building of the Great Houses had begun.

### Protecting Chaco

During the 1930s and 1940s, a series of investigations was conducted by the Museum of New Mexico, the School of American Research, and the University of New Mexico at Albuquerque, which then owned sections of the canyon. Large and small sites were excavated and ecological studies were conducted in order to gain an understanding of the ancient human impact on the landscape at this arid location. Field schools in anthropology were conducted there for many years, and an entire generation of archaeologists was trained at Chaco.

The Chaco ruins came under federal protection as Chaco Canyon National Monument in 1907. In 1949, the sections belonging to the University of New Mexico were transferred to the National Park Service, which had become responsible for the Monument in 1907. The National Park Service has long been engaged in a comprehensive program to repair, preserve and protect the sites and to stabilize the excavated ruins so that they can be visited safely. It also has cooperated with the many institutions that have done research at Chaco and conducted its own scientific investigations there.

In 1970 a joint research project was undertaken by the Park Service and the University of New Mexico. Under the direction of Robert Lister, until his retirement, and then of W. James Judge, Chaco Canyon and its archaeology were examined from a regional perspective. Many technological innovations including remote sensing, sophisticated dating methods, electronic data processing and retrieval systems, and statistical sampling methods were used to study Chaco and the surrounding regions. Traditional field archaeology was not forgotten, and Pueblo Alto and many early sites were excavated.

Astronomers, ecologists and biologists, as well as archaeologists and ethnologists, have worked together on this project. Among the results of the last decade of research is the realization that the ruins at Chaco Canyon cannot be understood in isolation. Chaco was the center of a network of communities that extended over 30,000 square miles of the San Juan Basin, and the canyon's massive ruins are the only tangible remains of this widespread social and economic system.

Even after almost 150 years of sci-

entific study, we are only beginning to understand how the Chaco system developed and how it worked. The recent discovery and description of the Chaco social and economic system brought new perspectives to the study of the ancient Southwest. It also stimulated interest in the protection of many Chaco sites located outside the boundaries of the old National Monument. In 1980 an innovative new national park was created; the Chaco Culture National Historical Park now protects Chaco Canyon and many of the distant ancient communities that originally were part of the Chaco system.

### Building the Great Houses

Until about A.D. 900, Chaco was little different from other Anasazi communities. After then, however, large structures called Great Houses containing hundreds of rooms were built. By A.D. 1130, there were eight Great Houses within a nine-mile stretch of the canyon, and others were built up to 100 miles away.

The impressive Great Houses were designed to face the sun. Since they had no metal tools or pack animals, the people of Chaco prepared their building materials by hand with stone tools and carried them manually to each building site. They planned the construction so that each floor became a working platform from which they built the next. Lower walls were thicker than upper ones to bear the weight of multiple stories.

The Chacoans stockpiled some construction materials in advance. They preferred a hard, difficult-to-quarry sandstone for building walls but also used common sandstone. Water, a precious commodity in this arid environment, was mixed with clay and sand for mortar; carrying water or mortar to a construction site was a major logistical problem. Great numbers of beams needed for floor and roof supports were carried from ponderosa forests at least 25 miles away. The construction of Chetro Ketl alone required 26,000 beams.

Many small villages coexisted with the Great Houses, and household goods and luxury objects, such as shell necklaces and turquoise pendants found in either type of community, are similar. But larger quantities of luxury goods and more elaborate ceremonial objects have been found in the Great Houses and in huge ceremonial structures called Great Kivas. Great Kivas that could hold hundreds of people were built in the plazas of Great Houses. Some have also been found isolated near small villages as though they were meant to serve several communities.

These kivas and their priests may have been a unifying and organizing force at Chaco Canyon. The Chaco phenomenon involved the mobilization and the management of human as well as natural resources. It was a commitment to expend wealth and energy in an orga-



Artist Richard Kern painted this 1849 portrait of a Jemez Indian guide named Hosta, who provided the Simpson expedition with much information about the Chaco Canyon ruins. Hosta told Simpson that Chaco had been built by his ancestors, but Simpson maintained that the site was a Toltec outpost.

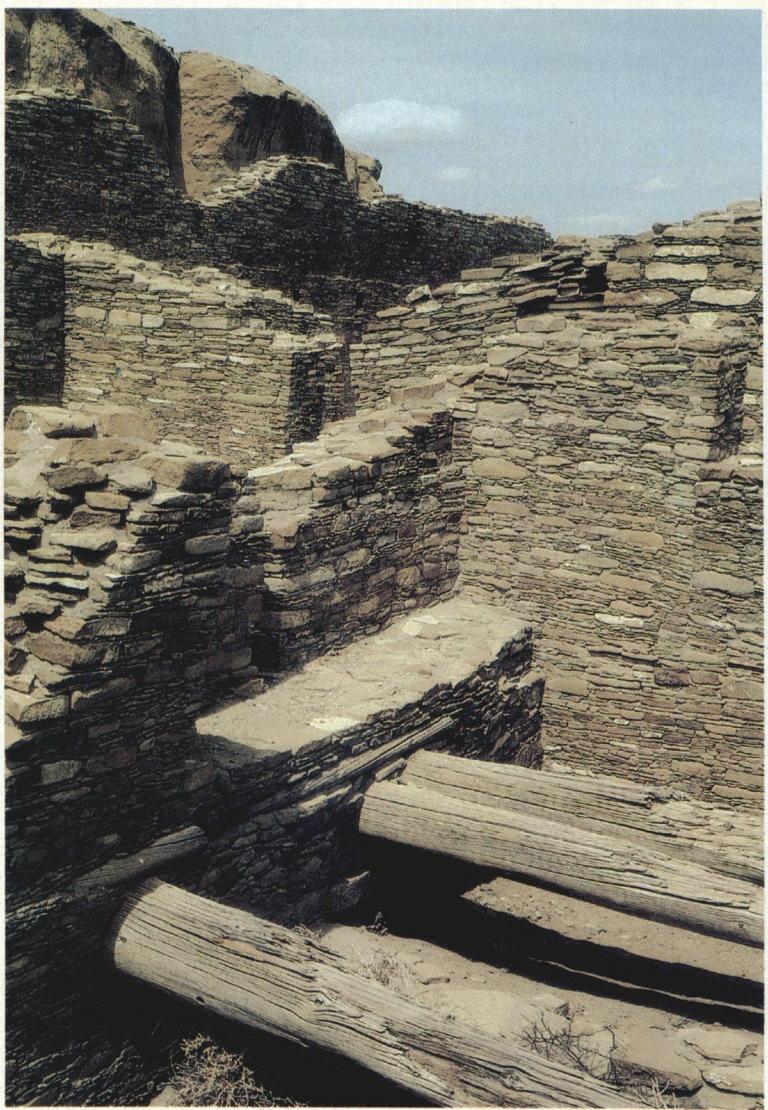
nized and concentrated way. The Chaco ruins are the tangible remains of these ancient purposes and philosophies.

Chaco Canyon today is a dry and desolate place, among the least favorable agricultural locations in the San Juan Basin. Its soil is thin and sandy. The Chaco River, deeply cut below the surrounding ground level, is dry most of the time. When rain does fall, it often comes in torrents that can cut gullies and tear away the topsoil. The few trees that survive there are small and useless for building purposes. Why was this place chosen as a population center? Surely conditions must have been different in the past. Surely there were more trees and water.

Recent ecological studies have shown that the climate and the natural resources of Chaco were substantially the same in the tenth century when the first Great Houses were built as they are today. Rainfall is about the same now as a thousand years ago. The forests were no closer then, the Chaco River no more reliable, the soil no better. There may be less grass today because of overgrazing of sheep during the last century, and the



(Above) This turquoise-covered basket is among the more exotic luxury items found at Pueblo Bonito by the Hyde expedition. Height, 16 centimeters. (Right) The nearly 26,000 ponderosa beams required to construct Chetro Ketl were hand-carried over Chaco roads from forests 25 miles away.



arroyos may be cut a bit deeper.

The last decade of research tells us much about how the Chaco people made the best of their poor agricultural circumstances. It was necessary to predict seasonal changes so the Chaco irrigation system could be cared for, the fields prepared and the crops planted in an orderly and timely way. Since observation of the cycles of the sun, moon, stars, and planets are a basis for making calendars, tower kivas and cliff-top shrines may have been used as observatories. It is likely that the Chaco people, as well as other early Southwesterners, observed the heavens so that they could predict annual cycles and maintain order in their lives.

Examinations of the practices of modern Pueblo people support the suggestion that Chacoan religious activities were also regulated by astronomical observations. The ritual calendar provided the schedules for economic and social activities as well as religious practices. It is likely that sun-watching, star-gazing and the responsibility for recording and interpreting celestial observations were priestly activities that

were also used to guide practical affairs.

Despite their best efforts, however, it is unlikely that the Chaco farmers could grow enough food to meet the needs of a large population. Hunting and foraging were still necessary, and it is probable that other food was imported to supplement locally grown and gathered crops.

#### The Chaco road system

The outlying Chaco communities are identified by their use of Chacoan architecture: master-planned, self-contained and built with core-and-veneer walls and Chaco style masonry. Many outliers are located in areas where resources such as wood and water are more freely available than at Chaco. Trade goods from outlier areas are common at Chaco.

Two hundred and fifty miles of straight, wide and well-engineered roads—all leading directly to Chaco—have been located from the air and verified on the ground. With no need to serve pack animals or wheeled vehicles, these roads can go straight up cliffs and follow staircases cut into the steep mesa walls. All known roads lead to outliers, but not all Chaco outliers can be directly asso-

ciated with ancient roads. Visual communication among outliers and within the canyon was accomplished by means of signaling stations. At night, fires from these stations can be seen from many miles away. In the daytime, smoke and mirrors are almost as effective.

A key to the Chaco system may have been the collection and storage at Chaco of surplus corn and beans grown during bumper years. The site of Pueblo Alto, for example, had many more storerooms than seem necessary to meet local needs. When disaster struck this food could be distributed where needed. And, perhaps in exchange for food, Chaco architects and stone masons may have been asked to design and construct buildings far distant from the canyon.

Rare goods such as turquoise, cotton, shell from the Pacific coast, and Mexican imports also may have been collected and processed at Chaco and then traded to the outliers. Macaws, copper bells and art objects from Mexico either passed north through many hands, or were brought directly to Chaco by long-distance traders carrying their goods in backpacks. Ancient documents from



**Robin Brailsford, a teaching assistant in sculpture at the University of New Mexico, created portraits of three ancient Chaco residents based on forensic reconstructions of Chacoan skulls by anthropologist Stanley Rhine.**

Mexico tell of such traders and their occasional intervention in local religious, political and military affairs. Lieutenant Simpson thought that Chaco was a Toltec outpost, and some modern researchers still suspect a Mexican connection.

Whatever the mechanism, the Chaco system succeeded and grew for more than 200 years. A description of the Chaco Phenomenon, a complex and wide-ranging social and economic system, has evolved during the last decade. People had lived there for thousands of years. For about six generations of that time—from the tenth to the mid-twelfth centuries—it was a center for more people than it appears local resources could support. Chaco was at the heart of a widespread system most permanently and uniquely expressed by its architecture. And then, gradually, undramatically, the system disintegrated. A combination of factors including drought, over-use of resources and internal discord may have led to its collapse. Eventually, Chaco Canyon was abandoned and, even more slowly, the buildings crumbled.

Environmental damage and overpopulation also may have been critical factors. Greater numbers of people meant greater hardships when drought reduced food supplies. An increase in the use of wood for fuel and building materials decimated the forests and accelerated soil erosion, loss of farmland and reduction of wild food resources. People left their homes to begin new lives elsewhere. The collapse of the Chaco system was the beginning of the end of an era.

The empty villages of Chaco were silent for over 300 years. Then, in the eighteenth century, the canyon echoed once again with the sounds of human life. Navajo Indians, whose ancestors had come to the Southwest during the time that the canyon was deserted, sought forage for the flocks of sheep they had acquired from the Spanish. Some Navajo families stayed in the canyon, farming and herding sheep, until 1948 when the last family was removed from the Monument area.

Late in the nineteenth century, new immigrants came to the San Juan Basin. Richard Wetherill, a rancher and trader before he became an archaeologist, was attracted to the Chaco ruins and built his house and trading post close to the walls of Pueblo Bonito. Tragically shot in 1910, Wetherill lies buried in a small, fenced cemetery west of this pueblo, the most beautiful of the Chaco ruins. His

trading post continued in use for many years afterward and was an historic landmark until its recent removal.

Early in this century the Fred Harvey Company brought tourists to Chaco over the dirt roads from the railway stop at Gallup, about 100 miles away. Now, many thousands of tourists drive there. The surrounding oil and gas fields and coal and uranium mines have brought other people to the area to live and work. Once again, Chaco Canyon is a center of human activity. The magic of the ruins attracts people from far distant places—the Chaco ruins spark the imagination and encourage us to look into ourselves. But these are fragile resources that need protection from those who admire them. They are best experienced in solitude, yet to be among them is to intrude on their silence.

More troubling still is the fact that we have need for the energy that lies below the ground at Chaco. Enormous reserves of coal, gas, uranium, and oil lie under the San Juan Basin. Yet can we balance our energy requirements against the more subtle but equally important need to touch the past and protect it for the future? The Chaco ruins tell the story of an orderly and balanced system that thrived for more than two centuries on the very edge of resource failure. They tell also of a system that declined and ended. They are a model—and a lesson. □