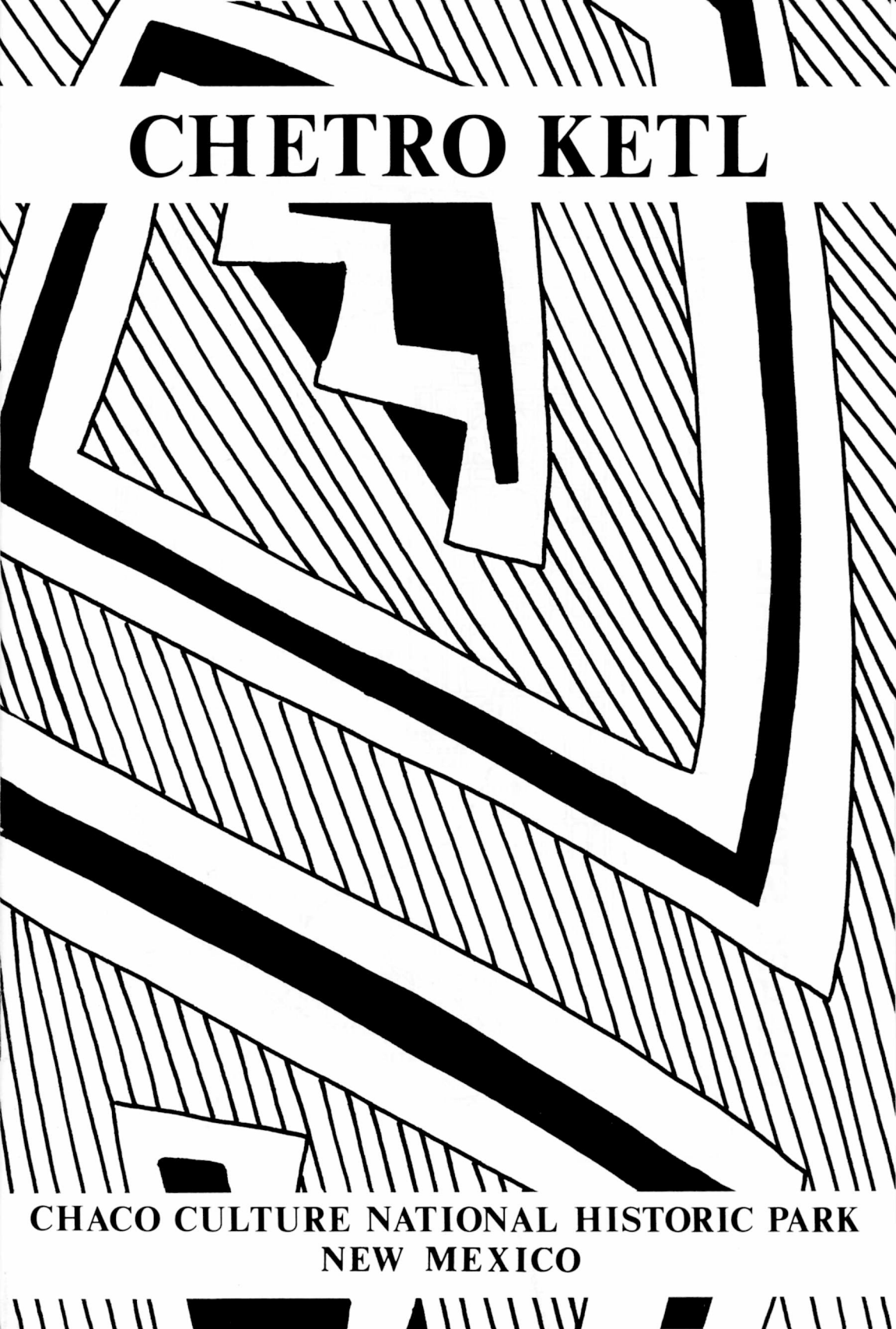
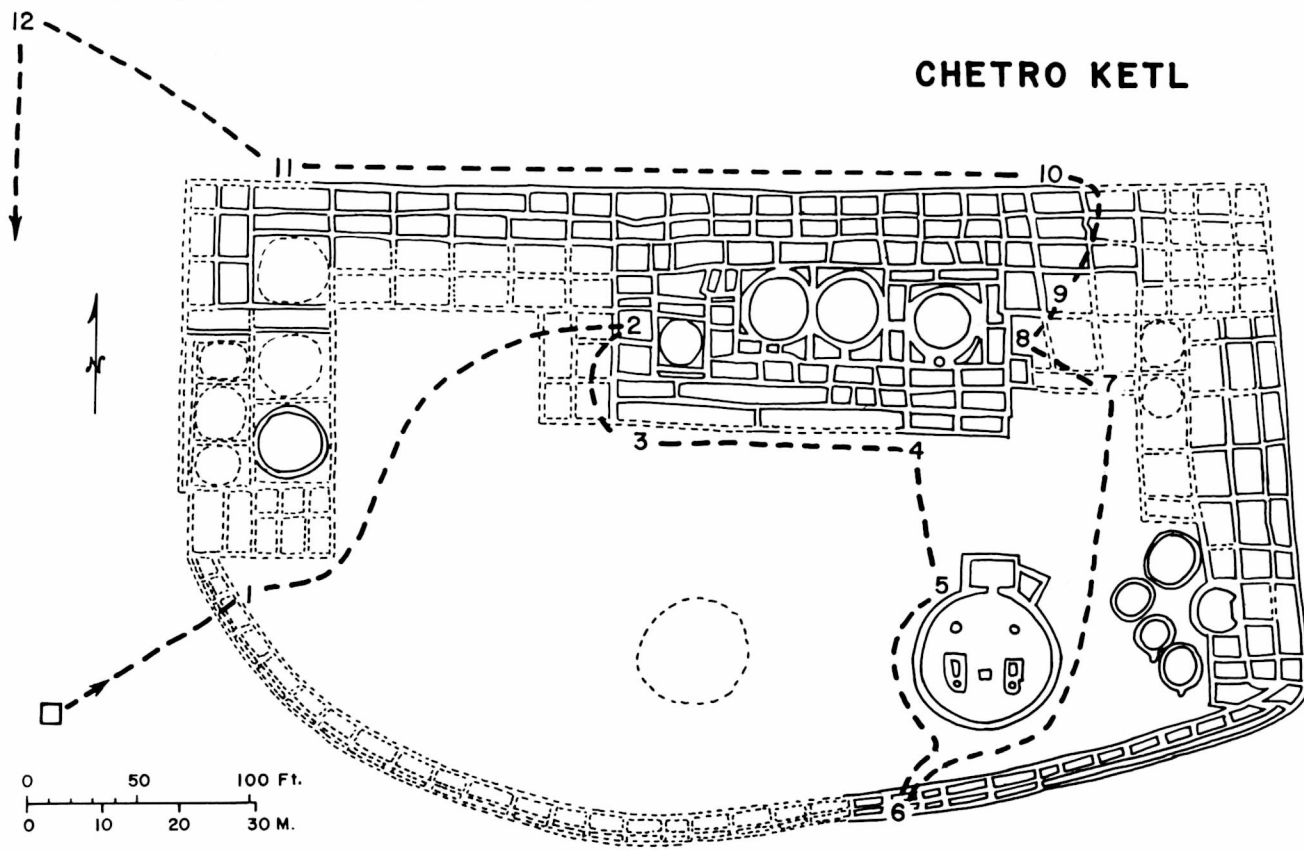


The background of the entire page is a complex, abstract geometric pattern. It features large, bold, black and white shapes that resemble stylized letters or architectural elements. These shapes are filled with diagonal hatching lines, creating a sense of depth and texture. The overall effect is a high-contrast, graphic design that frames the central text.

CHETRO KETL

**CHACO CULTURE NATIONAL HISTORIC PARK
NEW MEXICO**

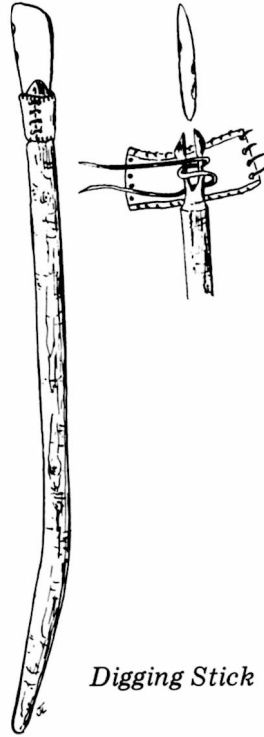
PLEASE STAY ON TRAIL



CHETRO KETL

Chetro Ketl and the other large ruins of Chaco Canyon were first described in 1850 by Lt. James Simpson who, in the previous year, had been a member of a military expedition through the canyon. We don't know the meaning of the name, although it was almost certainly derived from a Navajo word. The party's guides were Hosta, an Indian from Jemez Pueblo, and a Mexican named Carbajal from San Ysidro. After the word passed from Navajo, possibly through Jemez, to Spanish, then to English, and finally to Simpson's concept of how it ought to be spelled, its original pronunciation and meaning were lost.

Chetro Ketl is typical of a dozen large pueblos in a twenty mile* stretch of Chaco Wash which represent what archeologists call the Bonito Phase — the classic period and the peak of Anasazi cultural attainment in the canyon reached in the A.D. 1000's after at least 6,000 years of human occupation. "Anasazi" is a Navajo word meaning "ancient strangers". The occupants of these pueblos had much in common with others in the plateau region of New Mexico, Colorado, Utah, and Arizona. They grew the same crops, hunted the same animals, and used the same kind of tools and weapons. Their methods of making pottery, building walls, and of roofing their houses were the same. But in two respects the Bonito Phase Chacoans differed markedly from their neighbors. Their great houses were built to a preconceived plan. Though they were often rebuilt or added to, each phase of building adhered to a master plan, or was replanned to attain an architectural balance not seen in cliff dwellings at Mesa Verde National Park, Canyon de Chelly,



Digging Stick

*For metric conversion see table in back.

or Navajo National Monument. Also unlike those communities, these Chaco pueblos show signs of being closely interrelated parts of a larger, complex sociopolitical system.

Numbered markers along the one-half mile trail through the ruin correspond to numbered paragraphs in this booklet commenting on the features.

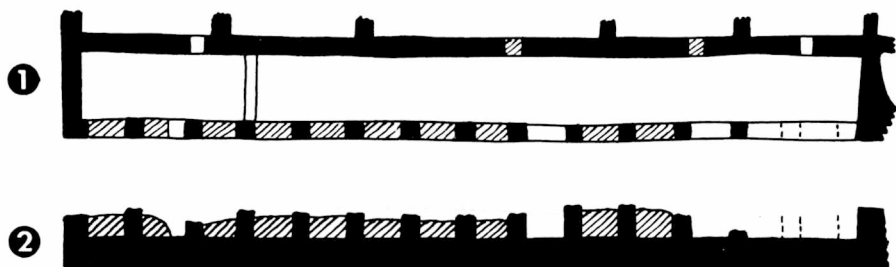
PLEASE STAY ON THE TRAIL

1 The rooms immediately in front of you have not been excavated. Archeologists often leave part of the site undug for research in the future, with new knowledge and new techniques. Excavation of the eastern two-thirds of the ruin was begun in 1920-21 by Edgar L. Hewett of the School of American Research and the Museum of New Mexico. He returned for more extensive work during the summers of 1929 through 1934 with the University of New Mexico joining the other two institutions.

Note on the ground plan that Chetro Ketl has a southerly orientation. This is true of most of the Bonito Phase houses, in contrast to the southeast-facing dwellings of old Anasazi tradition. Note also that the house is built behind an enclosed plaza fronted by a line of one-story rooms. This is a Chacoan trait that was copied in surrounding areas.

2 This well preserved room has been covered to protect the original mud plaster and flooring. Several hundred of the vigas, or beams, some of which you see exposed here, have been dated by the science of dendrochronology which can tell us the year the tree was cut — or at least the year in which the outermost ring present was grown. There may have been a much smaller one-story pueblo here in the A.D. 900's, but the evidence of tree-rings tells us that the large house of over 500 rooms and five stories that you see around you was started about A.D. 1038 and essentially completed by 1054, but with extensive remodeling and addition around 1100.

Now retrace your steps to the open area and follow the wall on your left.



1 — Floor plan and

2 — Elevation of column-fronted gallery - after Ferdon 1955

3 If you look closely you can see that this long front wall, facing the plaza, was originally built as a row of masonry columns which probably once held horizontal timbers to support a roof over an open cloister-like porch. Sometime later the spaces between the columns were filled with masonry to completely close the passageway. Still later the corridor was partitioned into several rooms. Pillars and colonades are features of prehistoric architecture in central Mexico, but were unknown to the American Southwest before the Bonito Phase. There had been an almost continuous drifting of Mexican cultural traits into this part of the world for over a thousand years, starting with corn (originally a tropical plant), followed by the knowledge of pottery making, then the growing and weaving of cotton. But with the building of Chetro Ketl and the other large structures in Chaco there was the sudden introduction of a number of other cultural items of Mexican origin. You will learn of some of the others along this trail as well as at Pueblo Bonito, Pueblo del Arroyo and Casa Rinconada.

4 Cross-sections of these broken walls show how they were put up. Most of the weight-bearing was done by the core of the wall which was made of random size, unshaped stones laid flat in copious adobe mortar. The core was faced with carefully selected stones to make a smooth veneer on both sides of the wall. Another characteristic of the walls is that they are "battered" — that is, they are wider at the bottom than at the top. Great thickness was required at the base to support two or more stories, but the upper walls, with less weight to carry, did not need to be so massive. The heavy footings are evidence that a multi-storied building was planned from the start. Before this period construction was more by

accretion — an expanding family or a new household just added the rooms they needed by butting them against rooms that were already there. In the case of the Chetro Ketl it is obvious that the people had a pretty good idea of what the completed structure would be before they began to lay up stone.



Great Kiva, 1921 excavation [photo courtesy of the School of American Research and the Museum of New Mexico]

5 This round, subterranean room, a little over 60 feet wide, is a great kiva. You may go into a still larger great kiva at Casa Rinconada.

The great kiva served a central ceremonial, religious function. It is a trait probably derived from similar structures in use in the Mogollon district of southwest New Mexico from about A.D. 1. Earth-lined great kivas were used by the Anasazi for 500 years before this one was built.

The walls you see cover an earlier, slightly smaller great kiva. The bench that encircles the room lies above the older bench and it concealed a series of ten niches, similar to those you see in the outer wall. Three of the earlier series are exposed in the southeast quarter of the chamber. The niches were sealed with stone and weren't immediately apparent to the excavators. When they were opened in 1932 each one yielded a string of beads and turquoise pendants — in all, over 17,000 beads of stone and shell in strands up to 17 feet long.

The bench, the four pits for roof support posts, the firebox, and the large vaults flanking it are common to all great kivas — though in earlier times the firepit and vaults were merely dug into the floor.

The four pits to hold roof-supporting pillars are masonry lined. Upon excavation one still held the butt of a post 26½ inches thick. The large sandstone disks were used in the pits as footings for the posts. To further insure the stability of the structure, the holes were blessed with offerings of leather bags of turquoise scraps. The four upright posts were connected by horizontal logs, and remains of smaller roofing timbers were found extending from the latter to the wall. None were found under the center. The middle of the room may have been left open to the sky.

A similar, but smaller, great kiva in the depression about 100 feet west was excavated and then backfilled.

6 Here a series of small rooms of unknown purpose, and a long, covered passageway connected the east and west wings of the pueblo and enclosed the plaza. (Trail returns to the plaza from here.)

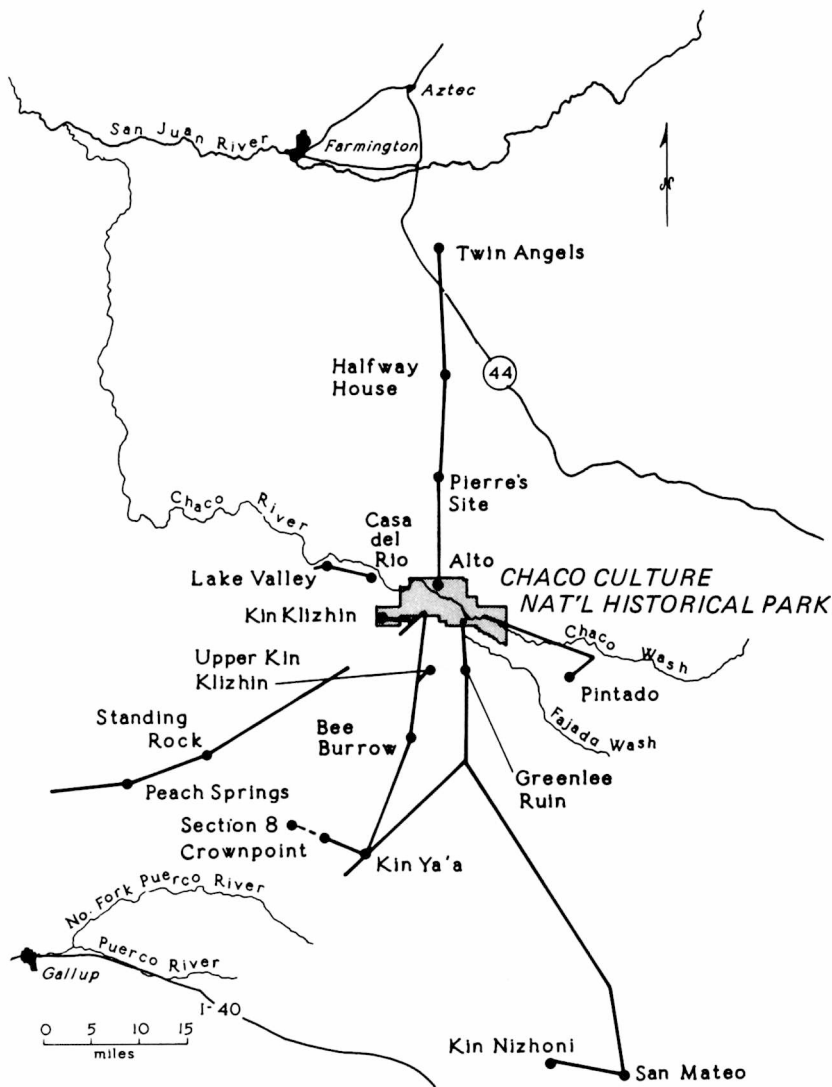
On the point of the cliff about 200 yards in front of you to the east, an ancient stairway (which you cannot see from here) led



Hungo Pavi stairwell - 2 miles east.

[photo by Hal Malde]

to a prepared roadway on top of the bluff. And up the small box canyon behind the pueblo, masonry retaining walls contain an earth-filled platform leading to the steps to the top of the cliff, where they joined a road to Pueblo Alto on the mesa three-quarters of a mile away. Another set of wide steps was cut into the rock on the cliff due south across the canyon — these joining a stone-



Major Chacoan roads and outlying communities

bordered road to Tsin Kletzin Pueblo on top of South Mesa. These short sections of roads, 16 to 20 feet wide, and bordered by berms of soil and loose rock, or by rows of large boulders, and often filled with soil to maintain a level on sloping ground, were known to the early archeologists in the canyon. But recent study of aerial photographs has revealed that the roads extend for miles — toward Aztec Ruins and other Chacoan pueblos on the San Juan River to the north, and south to Kin Ya'a Ruin near Crownpoint. More than 200 miles of prehistoric roads have been plotted, connecting most, if not all, of the pueblos of the Chaco world. The roads are not simple trails following the easiest routes, but are straight for miles, connecting points not in sight of one another, and disregarding rough terrain.

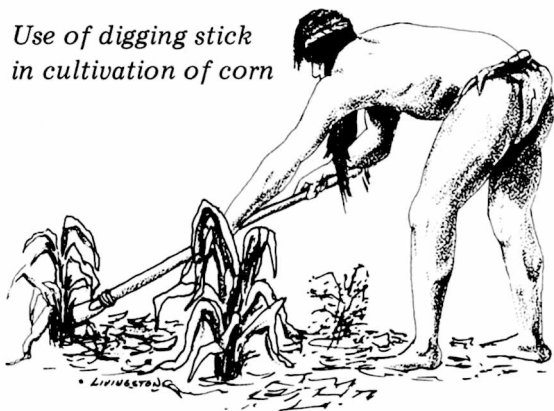
The laying out of roads required a significant degree of engineering skill, but the important implication is that dozens of pueblos for 60 or more miles, both north and south, were a closely cooperating community of towns, or were even units in a single political entity. It was during the Bonito Phase that Pueblo Indians came closer to being a "nation", in the sense that the Toltecs or Aztecs of Mexico were nations, than in any period before or since.

7 Heavy summer rains produce a flash runoff of water from the bare rock areas of the mesa behind the pueblo. The Indians took advantage of the brief floods by capturing the water at the head of the little side can-

yon to your right (and similar places, principally along the north side of the canyon), and channeling it through a system of stone-lined irrigation ditches onto a grid of basins on the valley floor where corn, squash, and beans were grown.

(The large dike you see is a modern device to protect the ruin from flood damage.) Even with the most careful conservation

*Use of digging stick
in cultivation of corn*



of water, however, it is doubtful if there was ever enough water, or enough usable land, to support the peak population of the canyon, and it may have been necessary to import food.

8 Here the archeologists have used steel beams, concrete, and masonry to show you an example of superposition – the building of a new structure over an old one. The curved wall below is part of a large kiva which was built in the early 1050's on the plaza in front of the four rows of rooms of the original Chetro Ketl. Wanting to expand the house, the builders purposefully filled the kiva with rubble and then built new structures above it between A.D. 1100 and 1103.

Note on your left the doorway plugged with masonry when it was no longer needed.

9 The filling of the kiva back at the last stop provided a foundation for the round structure to your left. The tower, three stories high, was completely enclosed by the rectangle of walls around it, and the intervening spaces were filled with rubble. The upper floor was apparently used as a kiva. Freestanding towers with some ceremonial or religious function were common in the Mesa Verde area in the same period, but the enclosed tower was peculiar to the Chacoan Bonito Phase pueblos.

To the rear of the tower are long rows of living and storage rooms of the original, central part of the pueblo. The unlit and poorly ventilated lower floors were probably used for storage, while the upper rooms, many of them opening onto terraces, were living quarters. If we can relate Chetro Ketl to what we know of modern pueblos on the Hopi mesas of Arizona, and on the Rio Grande in New Mexico, a family of four to five – parents with their unmarried children and perhaps a widowed grandmother – occupied a suite of about three rooms. As many as 600 to 700 people may have lived here.

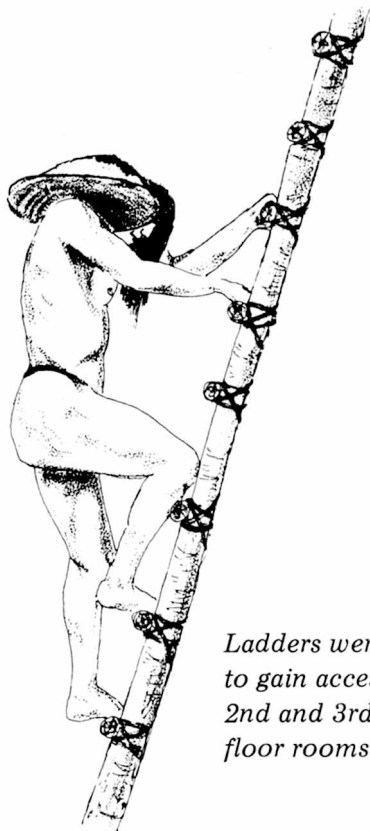
10 The long rear wall, most of it still standing after 900 years, was almost 500 feet long. Near the ground level you can see the exposed ends of ceiling beams of rooms buried in flood-borne silt. The logs were cut with a stone axe leaving a tapered butt like a beaver-gnawed tree. The ends were then laboriously ground flat

with pieces of sandstone.

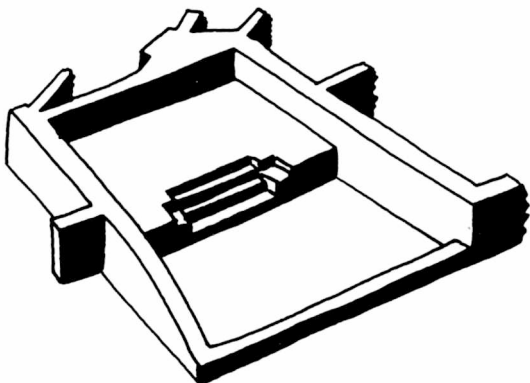
As you continue along the wall note the quality of masonry and look for changes in the styles of different masons.

11 Look back the way you have come along the wall, remembering all the rooms in front of it, and think of all the material that went into the construction. That a great amount of stone was hand-carried to the site is immediately obvious. It is more difficult to estimate the amount of water that was needed for the adobe mortar and for plaster. An archeologist with many years of experience in Chaco Canyon ruins has estimated that over 5,000 trees were cut for Chetro Ketl alone.

12 This small house of about 30 rooms and five kivas was named Talus Unit Number 1 by Hewett and his students who excavated it in the 1930's while work was going on in Chetro Ketl. Tree-rings tell us that it was contemporary with its larger neighbor — built in the late



Ladders were used to gain access to 2nd and 3rd floor rooms



Talus Unit No. 1 after Ferdon 1955

1000's. Over 300 small one-story pueblos were occupied at the same time as the great houses. Examples of "Hosta Butte Phase" houses, as archeologists refer to them, can be seen on the Casa Rinconada Trail.

The Talus Unit, however, differs from the Hosta Butte houses in several respects. It was at least two stories high and probably provided access by means of ladders on the roof to a roadway at the top of the cliff above the vertical crack in the rock behind the structure. The road leads to Pueblo Alto, about three-quarters of a mile away on the mesa.

The large room directly in front of you was unroofed. The low wall dissecting it was probably a retaining wall for earth fill which provided a high floor level at the top of the three steps. Some have speculated that it may have been a large shrine or altar. The site is quite unusual in the canyon and may not have been conventional housing, but instead may have served as a staging area for the road above.

OTHER THINGS TO SEE IN CHACO CANYON

- 1) PUEBLO BONITO, one-half mile west, the canyon's largest ruin.**
- 2) PUEBLO DEL ARROYO, just west of Pueblo Bonito, is yet another Bonito Phase ruin.**
- 3) On the CASA RINCONADA TRAIL, across the canyon from Pueblo Bonito, you can examine Chaco's largest great kiva, and also see three small pueblos.**
- 4) At the VISITOR'S CENTER, 3½ miles east of Chetro Ketl, there are restrooms. A small museum will help you to understand the Chaco Canyon of 1,000 years ago, and there you can get information about surrounding country.**

**PLEASE RETURN THIS BOOKLET TO THE STAND AT THE
START OF TRAIL OR DEPOSIT 50¢.**

Brief Metric Conversion Table

$\frac{1}{2}$ inch	=	12.70 millimetres
1 inch	=	25.40 millimetres
2 inches	=	50.80 millimetres
1 foot	=	30.48 centimetres
1 yard	=	0.914 metres
$\frac{1}{4}$ mile	=	400 metres
$\frac{1}{2}$ mile	=	800 metres
1 mile	=	1.6 km
$3\frac{1}{2}$ miles	=	5.6 km
$4\frac{1}{2}$ miles	=	7.2 km
15 miles	=	24 km
20 miles	=	32 km
60 miles	=	96 km
200 miles	=	320 km
1 acre	=	0.4 hectares
$2\frac{1}{2}$ acres	=	1 hectare

