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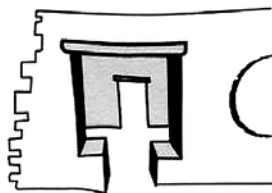
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## EXCAVATIONS AT CHETRO KETL

### *Field Session is Successful.*

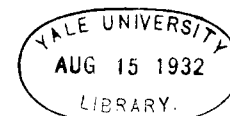
THE summer field session of the University of New Mexico and the School of American Research is being held during July in Chaco Canyon, with excavation work in progress on the famous Chetro Kettle ruin.

The session opened July 5, and will close July 29, though a few students and members of the staff will remain through August for further excavation work. The staff of the field session includes Dr. Edgar L. Hewett, director; Reginald G. Fisher, engineer, who left the camp July 17 to make preparations for the field school at Battleship Rock in the Jemez mountains during August; W. W. Postlewaite, of Colorado College; Paul Reiter, of the Museum of New Mexico; Miss Florence Hawley, tree ring chronology expert of the University of Arizona; and Paul Walter, Jr., of the University of New Mexico.

Students attending the field school include Winifred Reiter, John Linkins, Jess Wilson, Roy Lassetter, Mable Harding, Sallie Pierce, Katherine Harwood, Barbara Loomis, Janet Woods, Margaret Woods, Marion Hutchinson, Roy Willoughby, and Janet Case. Others who have spent a part or full time in camp have been Mrs. Hewett, Mrs. Fisher, Mrs. Walter, Fletcher Cook, and Marjorie Fergusson.

The days have been spent in excavating and in visits to various ruin sites of the Chaco Canyon region, while each

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evening has been given over to a discussion of the day's work, and seminar on subjects relating to archaeology of the region.

### *Lines of Investigation.*

In the excavations, several main lines of investigation have been followed. First in importance has been the work in the Great Sanctuary which Dr. J. W. Fewkes called a Sun Temple. Other excavations have been carried on in the large Chetro Ketl community house at several levels, including the fifth floor level underlying the remainder of the ruin, which has been opened up by placing concrete and steel supports to preserve the upper structure.

During the last half of the session, intensive work was begun on the West Tower of Chetro Ketl, which promises to be one of the most interesting and imposing parts of the ruin when it has been cleared of debris and cleaned out. This task was undertaken after a study of other tower kiva structures of the region. Whether the original purpose of these great towers was to serve as kivas is one of the present problems of the excavations. There is some indication that such features as the so-called ventilator shafts, altars, and firepits were built in at a period somewhat later than that of the original towers.

Miss Hawley is directing tree ring studies in timbers

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PAUL A. F. WALTER, *Editor.*

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taken from all of the ruins of the region. A few definite dates have been found to supplement those previously determined. They tend to confirm the data already assembled as to the chronology of the ruins of the canyon, showing the ruins to have been about contemporaneous, and a range of occupation from 861 A. D. to 1125 A. D.

### *Rock Shelters Investigated.*

During her reconnaissance trips, Miss Hawley has discovered and investigated several rock shelters along the base of the cliff on the north side of Chaco Canyon. In each has been found deposits of pottery, bone implements, matting, and the remains of foodstuffs, such as animal bones, squash seeds, and corn. One such shelter was found a few yards behind the camp of the students just below the Pueblo Bonito ruin.

The work begun last year on the dump heap at Chetro Ketl was completed without unusual finds. Repairs begun at Casa Rinconada ruin on the south side of the Chaco arroyo from Chetro Ketl, was completed by Navajo masons. Separate groups were assigned to search the canyon for burials, only a few of which have been found in the many years of excavations in the Chaco Canyon, but they met with little success, leaving the matter of burials still one of the unsolved problems of the place.

### *The Great Sanctuary.*

The Great Sanctuary continued to furnish most of the excitement of the excavations. The northwest quadrant was excavated down to the fifth floor level, leaving the first floor level in the northeast quadrant. The veneer from the benches around the entire structure was removed, except for a fifteen-foot section in the northeast quadrant, where it will be left to show how it appeared be-

fore removal from the remainder of the benches. Results continued to confirm the observations of the last two years, that the masonry of the lower levels was much better than that of the upper levels. This suggests the possibility that the people of Chetro Ketl left the place for a period of time, and when they returned had forgotten the fine art of building, thus accounting for the poor quality of their later work. Another possibility is that an inferior culture was superimposed upon the ruins of the original town, holding out until the final exodus, some eight centuries ago.

Following the discovery of five sealed crypts at the second bench level in the south half of the Great Sanctuary, by Paul Reiter in the spring, during the present session five more were found in the north half. Upon being opened each was found to contain an offering of beads and pieces of turquoise and matrix. The strings on which the beads were strung fell to bits upon exposure, and it was necessary to remove them with the greatest care, sort them, and restring them. One group contained 2,265 beads, and made a string seventeen feet long, the longest yet found in this region. Some of the turquoise pieces were of exceptional beauty and size.

During the spring Mr. Reiter had removed four huge sandstone discs from the bottom of the northeast post well and found under the lowest one a decomposed bag containing pulverized turquoise, apparently a ceremonial offering. During the session, an exploration was made into the northwest post well. Three great discs, each weighing about a thousand pounds, were removed. Under the center of the lowest was found a similar offering of ground turquoise and indications that a prayer stick had been placed with them. It was in these pits that the great column stood which supported the roof of the temple.

### *Find Lower Walls.*

One of the upsets of the excavations came when the exploration was continued below the bottom of the post well. At a depth of eighteen inches below the fifth floor level, heretofore considered the lowest level of the Great Sanctuary, there was found the top of a curved wall. On investigation it proved to be standing three feet high, and there were shown to be at least two lower floor levels, one of which bore definite signs of having been burned over. In efforts to follow this wall, another wall, with its top only one inch below the fifth floor level, was encountered. The investigation of these walls, the significance of which has puzzled the field group, is being continued.

### *A Strange "Paddle."*

Several rooms and two kivas have been investigated in the Big House of Chetro Ketl during the session. One strange find was that of a large wooden instrument resembling a canoe paddle. Because of the desert condition of the canyon, and geological evidence that even at the time of occupation it could not have been placed where a paddle would have been useful, this find has been of unusual interest and has caused much speculation.

The possibility of its being a paddle was rejected at once, unless it could have been an oar carried from the Pacific Ocean. Among the alternative suggestions which seem plausible, has been that it was a planting stick, since such instruments of somewhat similar shape have been seen in use at Zuñi. Serious objections to this theory have been raised. The definite answer remains to be found. The "paddle" was found in cleaning out one of the house rooms, and later an impression of its handle was found in the plaster where the wall fitted into the ceiling, showing where it had been concealed.

One of the house rooms offered further food for speculation. It was found to be traversed by a dozen or more cross-walls, seemingly without plan or reason. These walls were found intersecting and underlying each other. Directly inside the doorway there was a small pit in the floor, lined with stones, resembling a fire pit but not containing the usual signs of a fireplace.

### *Seek Hidden Passage.*

One immediate problem is whether the Great Sanctuary has a secret covered entrance, stairway and tunnel, as well as an inner sanctuary, similar to those found at Casa Rinconada last summer. As yet none have been uncovered, but an intensive search for them will be begun soon. There is some possibility that the lower walls found in exploring under the northwest post well may belong to some such structures.

It is probable that before this summer's work ends, a definite answer will be had to this problem. Exploratory trenching and possibly removal of a part of the stairway should soon reveal whether such concealed structures exist.

### *Water Flow Investigations.*

The greatest problems of these desert ruins center about the question of water supply. Studies are being made now to throw some light upon the matter. Did the Chaco once contain a stream which ran the year around? It is now only a dry wash except after cloudbursts and for a short period of thaw in the spring. Has there been a great climatic change which has dried up the region since it supported a large Indian population, some eight hundred years ago? Can such be the reasons why this population vanished so completely, leaving behind its silent architectural monuments?

With the co-operation of the United States Geological Survey, Mr. Fisher has established in the Chaco arroyo a station to keep an accurate record of the surface water flow of the floods which come down the arroyo. This will be followed by a measurement of the underground water flow, which it is believed is continuous.

Geological Survey measurements of the water of the San Juan River, of which the Chaco is a principal tributary, show a half million acre feet of water coming into the San Juan between a point just above the confluence with the Chaco, and a point just below. Wells along the shoulders of the Chaco arroyo at Pueblo Bonito seem to furnish an inexhaustible supply of good water. The drainage basin of the Chaco is of vast extent, and in time of heavy rains, the arroyo carries a tremendous flood.

A station of the United States Weather Bureau also has been established at Pueblo Bonito Lodge, to keep an accurate record of temperatures. The highest registered this summer has been 97 degrees. A wide variation is a daily occurrence, with the minimum night temperature at times falling fifty degrees below the maximum of the day.

Hurst Julien, formerly of the Casa Grande National Monument, of Arizona, has been assigned by the government to the Pueblo Bonito National Monument. He will spend the summer at Chaco, and return to his former post in the fall. He expects to be returned to the Chaco next summer.

Plans are being made for making the monument of much greater importance in the government's system of parks and monuments. The number of visitors to the monument is still small, but is mounting steadily. It now averages ten a day during the summer. When one considers that a generation ago a trip to the Chaco Canyon ruins was a difficult and hazardous adventure by horse-drawn wagon, taking many days to make, the progress is

worthy of note. Mr. Julien says he can see no reason why the ruins of the canyon should not eventually draw as many visitors as the Carlsbad Caverns, since they are, in their way as spectacular, and have an even greater educational value.

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## Architectural Plans of Geometric Art on Mimbres Bowls

*By*  
ALBERT ERNEST JENKS

