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GEOLOGICAL REPORT ON YUCCA HOUSE NATIONAL MONUMENT

COLORADO

BY

REGIONAL GEOLOGIST CHAS. N. GOULD

REGION III

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Yucca House National Monument, which was established in 1919, contains 9.6 acres. It is located in Montezuma County, southwestern Colorado, about 18 miles east of the Utah line and the same distance north of New Mexico. It is reached by a dim road off of Highway 106, 8 miles south of Cortez.

Yucca House is one of a number of several somewhat similar ruins scattered over an area of several square miles on the east slope of Ute Mountain.

On May 25, Assistant Director Bryant, of the Washington Office, Dr. W. B. McDougall, of the Santa Fe office, and Park Naturalist Watson of Mesa Verde National Park, accompanied me to Yucca House. It is located at Aztec Spring, near the head of Aztec Creek, on the lower part of the slope of Ute Mountain, a volcanic peak which lies to the west.

There is no resident custodian, but it is visited occasionally by the roving ranger. The monument is normally in charge of Custodian Miller of Aztec National Monument. The monument is enclosed by a wire fence but shows the effect of grazing.

The geology on and near Yucca House National Monument is not complex. The formation on which the monument is located is the Mancos shale, of upper Cretaceous age. This formation, which also forms the lower slopes along Mesa Verde plateau, a few miles southeast, is composed chiefly of soft gray to drab shales, containing a few ledges of dark gray to brown, fossiliferous limestone. One of these limestone beds crops out on the slope a short distance west of the monument, and loose blocks of this rock have been used in the structures. The Mancos, and other formations in this region, dip south or southeast away from Ute Mountain and toward Mesa Verde and San Juan Basin which centers in northwestern New Mexico.

Lying below the Mancos, geologically, but at a higher level and exposed on the slopes of Ute Peak, a few miles west of Yucca House, are outcrops of Dakota sandstone. This is typically a buff to brown sandstone, which, on weathering, often breaks into blocks of a size suitable for use in walls. On account of the southeast dip of all the rocks in this vicinity, the Dakota passes beneath the Mancos, and is not exposed on the surface or near the monument.

Dominating the landscape ten miles to the west is Ute Mountain, culminating in Ute Peak, which forms the head of "The Sleeping Ute." This mountain is of volcanic origin, the rocks composing it having been brought to the surface as volcanic intrusions probably in early Tertiary times. The chief rocks in the peak are

diorite porphyry, quartz monzonite porphyry, and latite porphyry. These are usually black or gray speckled rocks. They are harder than either the Dakota sandstone or the Mancos shale, and for that reason resists erosion longer than do these rocks. Fragments of this dark volcanic rock have been carried by streams heading in Ute Peak and now lie scattered on the lower slopes of the mountain in the vicinity of Yucca House.

Rocks of all three geological formations just mentioned were used by the Old People and built into the walls of the ruins at Yucca House. Very few ruins in the Southwest contains blocks of fossiliferous limestone. The chief building material for most of the pueblos and cliff dwellings has been blocks of sandstone or volcanic tuff. Here such blocks are common, constituting perhaps one fourth of the material of the walls. The limestone member of the Mancos which was used in this manner contains typical marine fossils easily recognized by a student of Cretaceous invertebrate paleontology. There are many oyster-like forms, such genera as Inoceramus, Gryphaea, and Exogyra. Several forms of the coiled shell, Ammonite, are present and such pelecypods as Leda and Trigonia. These types of marine fossils are characteristic of the Benton Cretaceous which, on the great plains of Kansas and Nebraska, overlies the Dakota, of the Austin Chalk of central Texas; and of the Boquillas flags of the Big Bend country.

The blocks of Dakota sandstone, which were used in the buildings, were probably either carried on the heads and backs of Indian women from outcrops of the Dakota, two to five miles to the west, or possibly some of the blocks may have been collected in the washes heading in Ute Mountain and flowing east to Aztec Creek in the vicinity of Yucca House. It is also possible that some of the sandstone blocks are of Mesa Verde sandstone collected from the slopes of Mesa Verde, three miles east of Yucca House. The Dakota and Mesa Verde sandstones look very much alike, so that it would not be possible to tell them apart if built into a wall.

The volcanic rock, chiefly diorite porphyry used in the ruin, was collected on the slopes near by. This rock does not usually break into square blocks. The fragments are often triangular and irregular in shape. Being very hard, this material was not easily shaped by the primitive tools employed by the Old People, so that the builders evidently selected for their use only such volcanic rock fragments as happened to have parallel faces, and rejected the others. This seems to be borne out by the fact that there are still many irregularly-shaped fragments of volcanic rock scattered on the surface near Yucca House, and comparatively few blocks of either Dakota sandstone or Mancos limestone.

In one regard, Yucca House is comparable to some of the ruins near Wupatki. In both monuments rocks of three geologic formations have been built into the walls. At Wupatki, white Kaibab limestone

of Permian age, red Moenkopi sandstone of Triassic age, and black volcanic basalt have been used. As just stated, at Yucca House the rocks are Dakota sandstone, Mancos fossiliferous limestone, and volcanic diorite porphyry.

The name Yucca House appears to be a misnomer. There are now no yuccas growing on the monument, but there is a tradition that yuccas were once abundant. If so, they seem to have all disappeared.

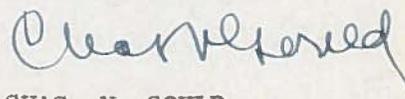
I have been able to find very little literature on Yucca House. The first articles were by W. W. Jackson and W. H. Holmes, in the report of the U. S. Geological Survey of the Territories (Hayden) for 1874, published in 1876. The ruin was then known as Aztec Spring. The Jackson report is on page 377-78 and the Holmes report on p. 400 of the Hayden report.

In Bulletin 70, Bureau of American Ethnology, published in 1919, J. Walter Fewkes has an article entitled "Prehistoric Villages, Castles and Towers in Southwestern Colorado." One section describes the ruins at Aztec Spring, now known as Yucca House. Fewkes quotes freely from Jackson and Holmes, and states that the ruins are of the Mesa Verde type, but that there are no towers as at Mesa Verde and Hovenweep. In a footnote Fewkes says:

"Mr. Van Kleeck of Denver has offered this ruin to the Public Parks Service for permanent preservation. It is proposed to name it Yucca House National Monument."

The buildings at Yucca House are of two kinds; namely, two rectangular structures, with enclosed kivas, as shown in figures 1 and 2, and two semicircular rows of rooms partly encircling the central or larger ruin. On the inner side of each circle there appears to be a number of kivas. There has been no attempt at restoration.

Respectfully submitted



CHAS. N. GOULD
REGIONAL GEOLOGIST



Figure 1. The smaller, one story structure at Yucca House. Bryant and Watson in the kiva. West end of Mesa Verde in background.



Figure 2. The larger, 2 or 3 story, rectangular structure at Yucca House. McDougall, Bryant, and Watson standing on the wall. Mesa Verde cliffs in background.