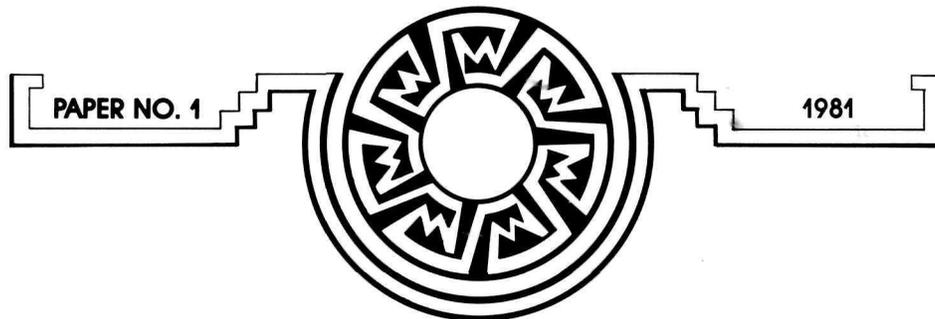


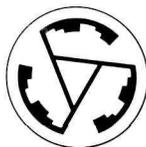
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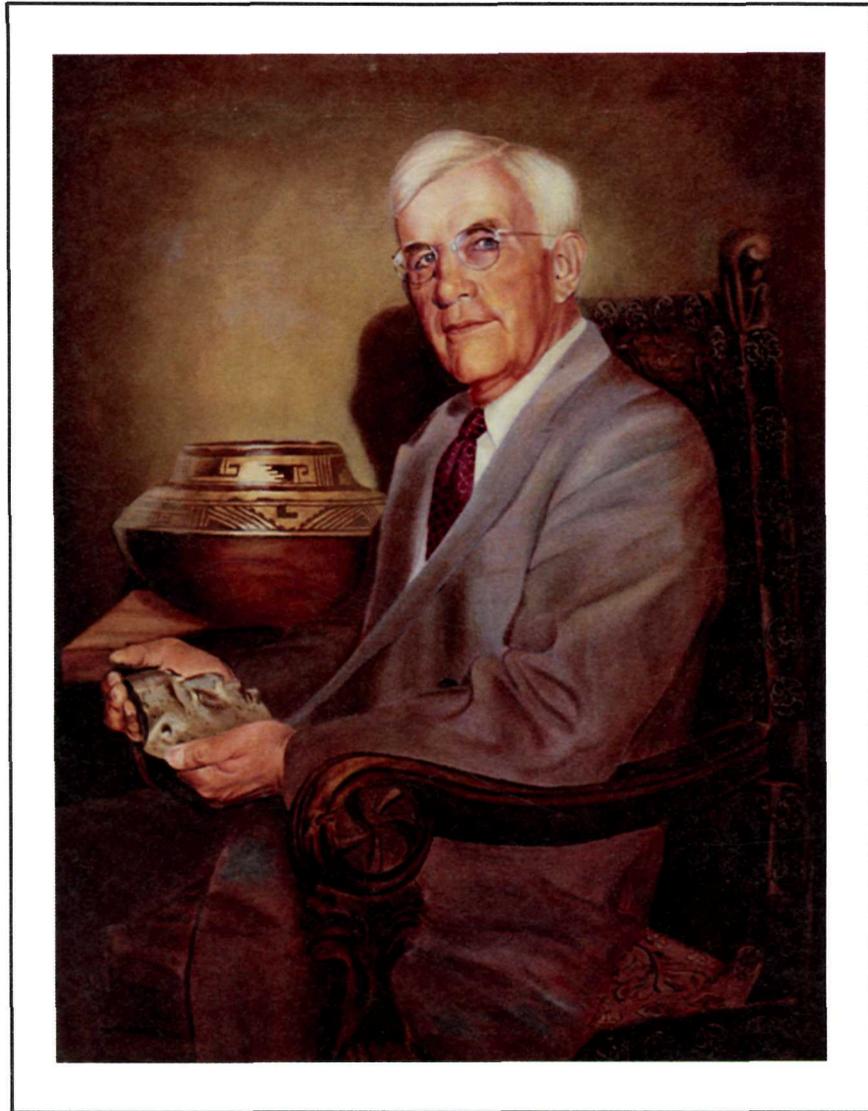


**THE 1926 RE-EXCAVATION
OF
STEP HOUSE CAVE
Mesa Verde National Park**

by
Jesse L. Nusbaum

Mesa Verde National Park, Colorado
Mesa Verde Museum Association, Inc.

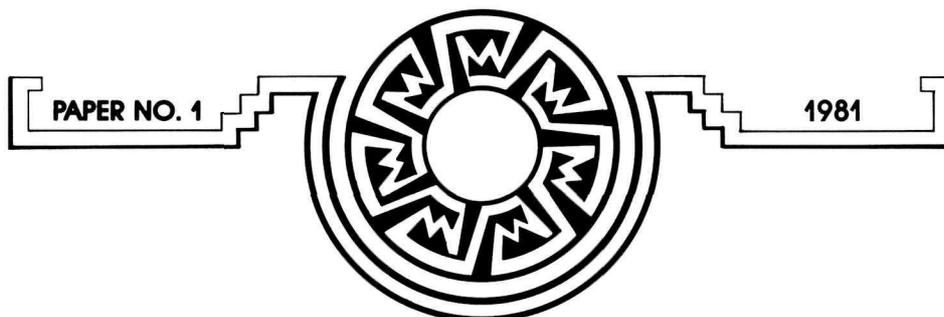




Jesse L. Nusbaum

Photo Courtesy of Laboratory of Anthropology, Santa Fe, New Mexico

MESA VERDE
RESEARCH SERIES



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with

Preface

by

Robert C. Heyder, Superintendent

Introduction

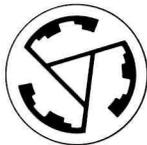
by

Dr. Jack E. Smith, Chief,
Research and Cultural Resource Management

Mesa Verde National Park, Colorado
Mesa Verde Museum Association, Inc.



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Preface



In the seventy-five intervening years since the establishment of Mesa Verde National Park, no one has been more intimately involved in the evolution of this park than Jesse Logan Nusbaum. The park was established by an Act of Congress on June 6, 1906, and a year later he visited the Mesa Verde for the first time as a photographer in a survey of the area led by the eminent Dr. Edgar L. Hewett. They arrived on June 23, 1907. He returned to stabilize Balcony House in 1910 and on June 6, 1921, was appointed Superintendent of Mesa Verde National Park. Superintendent Nusbaum served in that capacity on three occasions for a total of seventeen years, over a fifth of the total life of the park.

Superintendent Nusbaum clearly had a deep emotional conviction concerning Mesa Verde, as well as a profound knowledge of the area. He was a most able administrator and planner, as attested to by the development of the park carried out during his superintendency. The photographic record he has left shows the work of a man of great sensitivity and understanding of the subject as he focused the image through his lens. As an archaeologist he was a leader and accomplished a great deal of pioneering in early southwestern archaeology. Superintendent Nusbaum left his mark on Mesa Verde and I am quite sure we will not see his equal again, for he was a man for all seasons.

In light of his achievements, it is most fitting that the Mesa Verde Museum Association has selected Superintendent Nusbaum's paper on the re-excavation of Step House in 1926 as its first issue. It is a paper that is long over-due, and it is an excellent selection to inaugurate the Mesa Verde Research Series.

*Robert C. Heyder
Superintendent
Mesa Verde National Park*

Introduction



When Superintendent Jesse L. Nusbaum departed from the Mesa Verde Museum with a small crew and pack train on a frosty February morning in 1926 he was about to initiate an important archaeological project, the first of a series of winter expeditions to remote parts of Mesa Verde National Park. This was one of the results of a significant meeting between Superintendent Nusbaum and John D. Rockefeller, Jr. in 1924 while the latter was on a visit to the park. At that time a plan was worked out between the two for development of the park museum and a series of wintertime excavation projects. The plan was to be financed by Rockefeller and the work was to be carried out by Nusbaum.

As he points out in his narrative, Superintendent Nusbaum initiated the excavation program that same winter of 1924 with a combined excavation and training session for his small staff in the dark recess behind Spruce Tree House. A small salvage excavation of a surface ruin followed in the winter of 1925; but it was the expedition to Step House Cave in 1926 that really began the major excavation program and which resulted both in a significant collection of artifacts, to be housed in the new museum, and an important increase in our knowledge of the pattern of prehistoric life on the Mesa Verde. The 1926 expedition was something of a landmark in park archaeology, and it probably was the first archaeological excavation project in the park which today would be considered as “problem-oriented”, i.e. with a specific question formulated about an aspect of Mesa Verde prehistory, a site selected which offered the potential for providing the answers, and excavation guided by that objective.

There had been important excavations in Mesa Verde National Park previously, beginning with Gustav Nordenskiöld’s summer of work in 1891 and continuing with the work of Dr. Jesse Walter Fewkes from 1907 through 1921. Although lacking formal archaeological training, Nordenskiöld had a scientific training which permitted an orderly and, for his day, exemplary exploration of the cliff dwellings of the Mesa Verde, but his was a generalized approach and there were no guides from previous controlled work which he could follow. He sampled here and there in order to get a broad sense of what the prehistoric culture had been. Dr. Fewkes, on the other hand, had training in both archaeological and ethnological techniques, but his concern was less with exposing particular facets of prehistoric life through careful excavation than with getting the various ruins in which he worked cleared of debris so that they could be stabilized and repaired for display to the public. So, with the Step House Cave Expedition of 1926, Superintendent Nusbaum was breaking new ground in park archaeology, both literally and figuratively.

At Step House Cave Nusbaum made a major contribution to our knowledge of the earliest occupants of the Mesa Verde. Throughout the San Juan region of the southwest evidence had been accumulating of occupation at a very early time by people making the transition from a nomadic hunting and gathering lifestyle to one more sedentary and based upon farming. The great cliff dwellings which had drawn the attention of early explorers to the Mesa Verde clearly represented a time when that transition had long been made, and these offered scant clues to the earlier

stages of cultural development. Nusbaum had encountered some of the earliest of these transition-
al people in 1921 while on a expedition to southeastern Utah for the Museum of the American
Indian, Heye Foundation. Here, in a deep rock shelter named Cave DuPont, he uncovered the
neat stone-lined cists, cached tools and food supplies, and even the bodies of these early farmers,
neatly hidden within the cave which had provided shelter during their lifetimes and a final resting
place after. These were the so-called Basketmakers (Basketmaker II), a non-pottery making
people who were part-time nomads and part-time settled farmers. Richard Wetherill had first
discovered these Basketmakers in Grand Gulch, a tributary to the Colorado River, and Alfred
Kidder and Samuel Guernsey had found them again in the Kayenta country of northeastern
Arizona. Nusbaum had extended their known range north of the Colorado River; and he must
have wondered whether their distinctive life style might not be found in the Mesa Verde caves
as well.

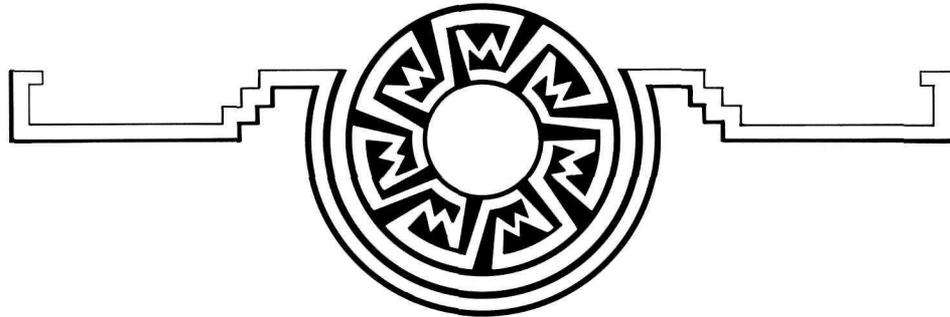
Kidder and Guernsey had also documented a later stage of Basketmaker life, known now
as Modified Basketmaker (Basketmaker III) because of major innovations in their pattern of daily
life — including more permanent house construction and the manufacture of pottery for con-
tainers. In 1919, Ralph Linton, one of Fewkes' assistants at Mesa Verde, had discovered and
partially excavated the remains of a semi-subterranean room, called "Earth Lodge A", on the
Mesa Verde, which we now know to have been built by these Modified Basketmaker people.
This room had a centrally located circular fireplace and evidence that the above-ground walls had
been made of sloping poles plastered with mud. About the floor were scattered fragments of crude
undecorated pottery. The whole had been interpreted by Linton and Fewkes as evidence of a
people who predated those later Mesa Verde people who built the cliff dwellings and made beauti-
ful black and white pottery. Nusbaum was aware of the work of Kidder and Guernsey in Arizona
with both Basketmakers and Modified Basketmakers and with Linton's findings on the Mesa
Verde. He was also aware, from his reading of Nordenskiöld's monograph, that the latter had dis-
covered some crude plain vessels in Step House Cave which were different from those commonly
found amidst the rubble of the cliff dwellings. While Nordenskiöld does not state that he suspected
that this was evidence of an earlier occupation, Nusbaum's knowledge of the cultural traits of the
Basketmakers and Modified Basketmakers (called "Post-Basket Makers" in those days) provided
him with enough information to arouse some suspicions. Although Nusbaum also does not state
that such were his thoughts when he selected Step House Cave for his 1926 excavation, it seems
likely. The selection had been made in 1924 during a visit to Wetherill Mesa by Nusbaum, Kidder
and Frederick Hodge. Perhaps at that time Kidder and Hodge also recognized in Step House Cave
the clues to a possible Modified Basketmaker settlement there. In any case it did not take Nusbaum
long to recognize the Modified Basketmaker structures in the cave when he reached them, and
from that point on the excavations were focused on bringing to light some of the best preserved
evidence of this culture on the Mesa Verde.

For many years, the 1926 work at Step House Cave represented the only well documented
evidence of the Modified Basketmaker people at Mesa Verde. Then in 1934, Nusbaum and Earl
Morris completed the excavation of Linton's old Earth Lodge A and added more to the picture.
Other winter expeditions following the one to Step House Cave revealed bits and pieces which
suggested that there were still other sites of these early people. And since these early years
numerous other Modified Basketmaker houses have been excavated, usually through chance
encounters as a result of trenches cutting through them for waterlines or other construction
activities. One such house was found recently beneath the cliff dwelling at Long House by George
Cattanach, confirming Nusbaum's suspicion that other houses were built in the caves and later

obscured by cliff dwellings. There are probably many Basketmaker III sites throughout the Mesa Verde but they are difficult to find, and Nusbaum's pioneering work at Step House Cave still remains an important source of information on the material culture of this early people. For many years his manuscript account of the 1926 expedition lay in files where it was accessible to few. It is an important document, both historically and archaeologically, and I am certain that its publication now will be welcomed by all southwestern archaeologists.

*Mesa Verde National Park
1981*

*Dr. Jack E. Smith
Chief, Division Research and
Cultural Resource Management
Mesa Verde National Park*



**THE 1926 RE-EXCAVATION
OF
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Jesse L. Nusbaum

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Acknowledgements



I wish to express my gratitude to Stephen T. Mather, founder and first director of the National Park Service, for the opportunity to undertake a sequence of winter archaeological investigations at Mesa Verde, including the re-excitation of Step House Cave; to John D. Rockefeller, Jr., who provided the funds that made this program possible; and to present Director Newton B. Drury, for the opportunity to complete this report in connection with official duties.

Likewise, I wish to express thanks to the members on my crew of 1926 for their diligence, competence, and esprit de corps, regardless of trying winter-cold working and camping conditions; to Don Watson, Phillip Van Cleave, Al Lancaster, and Jean Pinkley of the Mesa Verde archaeological staff, for assistance rendered in connection with the Step House materials, and generally; and to Stanley Stubbs of the Laboratory of Anthropology for cooperation in examining sherd temper microscopically. Also, to members of the Region Three Office of the National Park Service; to Dr. Erik K. Reed, who reviewed the manuscript and made helpful suggestions; and to Miss Virginia Mastin, who carefully attended to my typing needs.

Lastly, I am indebted to Deric O'Bryan, youngest member of this expedition, now Assistant Director, Gila Pueblo, for his very beneficial cooperation, and to Robert Burgh of his staff for the preparation of final inked drawings from the penciled field plans of the late Marshall Finnan.

*Jesse L. Nusbaum
Santa Fe, New Mexico
May 1949*



PART I

Historical Background

Why any rational archeologist with good eyesight should, in view of physical, documentary, and communicated evidence, deliberately plan to re-excavate in 1926 the estimated minimum of 600 cubic meters of completely churned and cratered debris progressively left on the open floor of Step House Cave in the wake of the excavations of 1890-92, obviously requires explanation (fig. 1). No debris area in Mesa Verde was more persistently and repeatedly searched during the heyday of commercial collecting preceding Presidential approval in June of 1906 of the Congressional Acts (1) creating Mesa Verde National Park, and (2) for the Preservation of American Antiquities. Paradoxically, only from this Mesa Verde site was there available an overall record of early excavations and findings; orally communicated and documentary data on the Wetherill-Mason commercial collecting expeditions of 1890 and 1892, in addition to Nordenskiöld's notable and basic scientific record of his investigations and findings there in the intervening year of 1891.

1. Early Explorations of the Mesa Verde

The first excavations in Step House Cave, and the first excavations in scores of other Mesa Verde ruins, came about through the keen interest of the Wetherills of Lower Mancos Valley, which was aroused by the major discoveries made possible through establishing friendly relations with the allegedly hostile neighboring Utes of the Mesa Verde region.

By treaty finally negotiated in 1868, and without reservation of mineral rights, the Federal government ceded outright or conditionally to the widely ranging, war-like, and troublesome Ute Indians, the public domain that comprised a large part of southwestern Colorado. With discovery of rich mineral deposits in this region, the Federal government aggressively sought to repossess these mineral rights, and in 1873 the Utes reluctantly agreed to relinquish the mineralized San Juan district to the United States, subject to a reimbursing payment based on the government's evaluation of the mineral rights involved. This task was promptly assigned to the Hayden Survey. The hostile attitude of the Utes toward any intrusion by others increased with their ownership of lands, and toward miners and geologists in particular, following recession of their mineral rights.

Lands ceded to the Southern Utes included Mancos Canyon and bordering Mesa Verde plateau lands and canyons in which cliff dwellings and other ruins were so abundantly concentrated. Mancos Canyon was the customary trailway through the Mesa Verde plateau for the Wimmenuche Band of Southern Utes. Many of their families lived in Mancos Canyon during the warmer months, and several families having small herds of cattle continued living there through the winter.

In 1874, due to the hostile attitude of the Utes, W.H. Jackson of the Photographic Division of the Hayden Survey tarried only long enough in his first hasty traverse of their Mancos Canyon domain to photograph, for the first time, two of the more imposing of the many cliff dwellings, which his party discovered, and to note ruins on the canyon floor.

In 1875, Geologist W.H. Holmes, of the Survey, accompanied Jackson on a second hurried traverse of Mancos Canyon to make a preliminary archeological study and report on the ruins of Mancos Canyon. No exploration whatever was attempted in any branch of Mancos Canyon in 1874 and 1875.

Four years later, in 1879, B.K. Wetherill homesteaded in Lower Mancos Valley only a few miles up-river from the head of Mancos Canyon. His eldest son, Richard, joined him in 1880; his wife, daughter, and four younger sons in 1881. This peaceful Quaker family from Pennsylvania hoped to maintain friendly relations with their near neighbors, the Utes. They fed them as they passed back and forth, and gradually cultivated and won the friendship of leaders living in Mancos Canyon.

From about 1885, the Wetherills began to winter their cattle in sheltered Mancos Canyon and its many branches, principally the maze of canyons draining the Mesa Verde plateau on the north. One or more of the

Wetherill boys maintained an over-winter camp in Mancos Canyon, or a lateral canyon, to keep track of their stock. Generally this chore required but little time and effort, as increasingly heavier snowfall at higher elevations normally restricted grazing to the lower canyon floors. Consequently, during winters, the Wetherill boys had ample time to investigate each of the scores of new cliff dwellings they kept finding as they rode the canyon floors checking up on their cattle.

For generations, the Southern Utes had ranged and hunted deer in the canyons and on the intervening mesas of Mesa Verde plateau. Buckskin was always in high demand for apparel, and venison remains their favorite food. In consequence, they knew the few locations of dependable water supply; also all of the more conspicuous ruins, the "Moki" houses, which they yet religiously avoid. From Mancos Canyon, the Wetherills could follow long-used Ute trails up the many branch canyons, for ascending to the rim of present Chapin Mesa, and to traverse the length of the larger mesas. That they sought and benefited from the advance information and guidance given by their Mancos Canyon friends, Acowitz in particular, for whom they named the major southern tributary canyon, later officially designated as Johnson Canyon, is not in question.

Profitable sale in the summer of 1888 of the archeological relics which they collected, largely to satisfy their curiosity, markedly increased their interest in this collateral leisure-time pursuit.

On December 18, 1888, while searching for cattle that had ascended from Mancos Canyon to the south rim of the Mesa Verde plateau, Richard Wetherill and his brother-in-law, Charles Mason, discovered and inspected the largest cliff dwelling they had yet found, first called Big House, subsequently called Cliff Palace.¹ Either later that day, or some days later when they returned with others, two more major cliff dwellings were found which, however, were not named Spruce Tree House and Square Tower House until 1891.

Within four days of their discovery of Cliff Palace, Richard and Charles had proceeded to the Alamo Ranch, organized their excavation party which included John Wetherill and new associates, McLoyd, Patrick, and Graham, and returned to Cliff Palace to initiate surface collecting and excavation of December 22, 1888. They excavated for the first month in Cliff Palace with notable success; for the ensuing two months in Spruce Tree House and Square Tower House with good success.

Sale in the summer of 1889 of this notable first collection from these newly discovered major cliff dwellings significantly emphasized their subsequent commercial sales objective. "We went at it in a more business-like manner it was a business proposition," to quote their own phraseology. The Wetherill brothers and Mason were diligent workers; and Richard and John, in particular, were keen intelligent observers. They had rapidly learned to determine the locations in ruins, and immediately adjacent, where the opportunities were best for garnering maximum archeological loot with minimum expenditure of effort. Thereafter they followed systematic methods.

The measure of their industry to the spring of 1890 is a matter of record in the first book published on the Mesa Verde.² Frederick H. Chapin, the author, for whom Chapin Mesa was named by Nordenskiöld, had the good fortune in the summer of 1889 to be the first visitor that the Wetherills conducted to the Mesa Verde cliff dwellings, and returned in September 1890 to explore more extensively with them.

His statistical summary follows:

"Up to March 14, 1890, the Wetherills and Mason had examined in all, 182 houses, but few of which yielded much in the way of relics. They visited 106 houses in Navajo Canyon alone and worked 250 miles of cliff front. Most of the ruins in Navajo Canyon were of large size containing 30 to 100 rooms each."

2. Excavations in Step House Cave Prior to 1926

Beginning in early December 1889, and continuing to the spring of 1890, Richard, John, Alfred, and Clayton Wetherill, and their brother-in-law Charles Mason, diligently resumed their excavation of previously located cliff dwellings in present Mesa Verde National Park, and in Mancos and Johnson (Acowitz) Canyons to the south.

¹As a matter of record, Chapman Ballard, Frank Morgan, Dr. William Robert Winters, James Frink, and S.E. Osborn progressively discovered and inspected this largest cliff dwelling among others during the period, 1875-1884.

²*The Land of the Cliff Dwellers* by Frederick H. Chapin. W.B. Clarke, Boston, 1892.

They first excavated Sandal House in upper Mancos Canyon, next Fortified House in Johnson Canyon, and several large houses in the left-hand fork of Johnson Canyon before returning to Cliff Palace, Spruce Tree House, and Square Tower to excavate more deeply and extensively. Following the recovery of easily accessible archeological materials in these major sites, they located the vast majority of cliff dwellings in the many branches of Navajo Canyon, excavating principally in larger cliff dwellings which they named Spring House, Long House, Mug House, High House, Kodak House, and Step House. Thus they assembled by far their largest, most comprehensive, and important collection to that time.

No written record is available, to my knowledge, covering their early 1890 excavations in Step House Cave and the archeological material found there. However, in the early 1920's, John Wetherill told me that they found practically no material within the small dilapidated cliff dwelling built atop the massive rockfall and ledge formation in the northern end of the great vaulted cave, but that the deep debris about the toe of the rockfall, between the cliff dwelling and the rear cave wall in particular, was productive. Here they found several cliff-dweller burials and much fine pottery, and it was their intention to search further there the following winter. He also stated, as Nordenskiöld confirms in his monograph,³ that they encountered no archeological material of any importance in sporadic test excavations of the extensive refuse area on the cave floor to the south.

In the late summer of 1891, Gustaf Nordenskiöld of the Academy of Sciences, Stockholm, Sweden, arrived at the Wetherills' Alamo Ranch in Lower Mancos Valley, to gain first-hand information about the Mesa Verde cliff dwellings, of which he first learned on reaching Denver. From this ranch headquarters, located above the head of Mancos Canyon and within a day's horseback ride of the more remote Mesa Verde ruins, he first visited some of the most remarkable and largest ruins with Richard Wetherill. Before determining to undertake more extensive researches and excavations to gain a thorough knowledge of the cliff dwellings and their former inhabitants, he wished to undertake a minor preliminary excavation. On Richard's advice and with his and Alfred Wetherill's assistance, he spent two days excavating a small cliff dwelling in Cliff (now Soda) Canyon, which the Wetherills had previously tested. This preliminary experience in the cliff dwelling since known as Painted Kiva House stimulated his major excavation program.

With John Wetherill as foreman, and two Mexican laborers at the start, later increased to five, Nordenskiöld inaugurated his major excavation program in the strict field of Wetherill's Mesa (which he named) and its canyons located in the westernmost section of present Mesa Verde National Park.

It was Nordenskiöld's original intention to completely excavate a single cliff village site. On John Wetherill's advice, he selected Long House, Mesa Verde's second largest although badly deteriorated cliff dwelling, and worked diligently there for one month "without any particularly good results," before deciding to continue elsewhere. Then followed two weeks of excavation in small cliff dwellings, numbered 11 and 12, with the comment, "The results are now a little better . . . still they do not seem to repay the amount of labor expended." In the last days of August, he completed his series of cliff dwelling excavations in the west cliffs of Wetherill's Mesa in much disturbed Mug House where the Wetherill party had made their richest Mesa Verde finds the year before.

Nordenskiöld's comment concerning the above excavations is significant. "I should have preferred to investigate places that had not been touched, but I finally came to the conclusion that this might not be of much importance, the previous excavations having been far from complete, and my limited resources not allowing for a thorough excavation of an untouched ruin." (ibid, p. 22).

It is logical to assume at this point, in view of meager success in 45 days of excavation, that Nordenskiöld's mounting interest in finding a promising and only slightly disturbed cave site prompted John Wetherill, with certain reluctance, to recommend further excavations in Step House Cave. The Wetherill party of 1889-90, of which John was a member, had not as yet carried out their intention of returning to Step House Cave to continue excavation and collecting their account.

To facilitate over-all orientation, since access to the English translation of Nordenskiöld's excellent, comprehensive, and superbly illustrated monograph is limited to a fortunate few,⁴ I take the liberty of quoting directly from Nordenskiöld's text (1) his detailed description of Step House Cave and existing conditions on commencement of his excavations of 1891; (2) the locations and nature of his excavations; and (3) his record

³G. Nordenskiöld, *The Cliff Dwellers of the Mesa Verde, Southwestern Colorado; their Pottery and Implements*. (English translation by D. Lloyd Morgan), P.A. Norstedt & Soner. Stockholm and Chicago, 1893.

⁴Since this was written, Nordenskiöld's monograph has been reprinted and is now generally available.

of findings and his interpretation of these. Further, as Figure 1, I reproduce his Plate VII map of **The Step House**, showing the location of his excavations, and illustrating burial findings, and cite by plate designations each object that is illustrated in his report.

Even though Nordenskiöld recognized that certain specimens of pottery found by him were rather unusual and differed in form and design from other vessels found in cliff dwellings, he did not realize that at certain locations his excavations in cave floor refuse penetrated to the level of Basket Maker III occupation, antedating by approximately five centuries the high levels of Pueblo III-Cliff Dweller occupation.

Careful analysis of his Step House cave materials, based on pertinent texts and illustrations, makes possible the classification and proper segregation of materials of Pueblo III origin from those of Basket Maker III origin. Related text, quoted from Nordenskiöld's report, has been reorganized accordingly under Pueblo III and Basket Maker III headings. Interspersed, are my comments when these appear desirable.

Nordenskiöld's general descriptive text follows: ". . . a ruin of insignificant appearance, which proved, however, to be of exceedingly great interest. It has received the name of Step House, from a stairway built of large blocks of stone which leads to the ruin. Both to the north and the south, there is a practicable descent to the same from the mesa. To the north, steps have been hewn at several spots in the sandstone cliff to facilitate the descent. Along a shelf of rock, we reach a high vaulted cave, open to the east. Its length is about 70 meters, its depth 15 meters. At one end lie the much dilapidated ruins of a considerable cliff village. A plan thereof is shown in Plate VII. The ruins occupy only the north end of the cave. The remainder is an open space 40 meters in length, and roofed over by a high vault of rock. Throughout almost the whole of this open space, the ground consists of refuse, bird droppings, probably of turkey, leaves, and cobs of maize, mixed with miscellaneous rubbish and dust." (ibid pp. 37-38)

"This accumulation was 40 meters long and 13 meters broad." The depth was measured at a few spots and varied between 0.6 and 2 meters. The contents of this mass of rubbish were probably between 200 and 300 cubic meters."(ibid, p. 42)

"To the south of this space is a slope covered with large blocks of sandstone, which have been arranged to form a stairway of about 60 steps leading almost up to the mesa. The cave is adjoined below by a rather steep slope, densely overgrown with bushes, which extends to the very bottom of the canyon.

We excavated partly in the ruins themselves, partly in the refuse south of them. Our finds in the ruins were rather few. Previous excavations of a less thorough description, made on the open space south of the ruins had not yielded any results worthy of mention." (ibid, p. 38)

Pueblo III Culture: Nordenskiöld later found several graves situated in the refuse heap. (His plan shows the sites of these graves.) The descriptive text on the eight burials (six adult, two child, designated A through H) and accompanying plates of all artifacts and certain burials clearly supports the conclusion that these burials and accompaniments, with the possible exception of burial C, have definite relationship in time to the dilapidated Pueblo III cliff dwelling. The appendix of Nordenskiöld's report, comprising the technical report on **Human Remains**, by G. Retzius, confirms this conclusion for crania from Graves H, B, G, and E. These he reports "as distinctly brachycephalic, more or less augmented by artificial deformation, and to a pronounced degree in the Grave B cranium."

Professor Retzius did not make a comparable study of perfectly mummified burial C (Pl. XIX:2) due to the decision that it would be unwise to attempt to remove and later replace the fur-wrapped cordage and the cap of skin that almost completely enshrouded the head. This is unfortunate, since this burial, which to Nordenskiöld "seemed to be the grave of a person of importance to judge by the care with which the body had been buried," combines in perplexing assembly, artifacts and burial traits customarily assignable either to Basket Maker II or to Pueblo III people. However, the artifact of latest origin in an undisturbed grave — in this case the large handsomely decorated bowl (Pl. XXVI:3), of classic Pueblo III origin, which was inverted over a fine coiled basket half filled with maize meal—would per se serve to date this interment as Pueblo III. In synthesis, it is possible that this person of unquestioned importance may have preferred and perpetuated the wearing of earlier types of apparel, or possessed this apparel as the result of pilfering earlier cist burials,

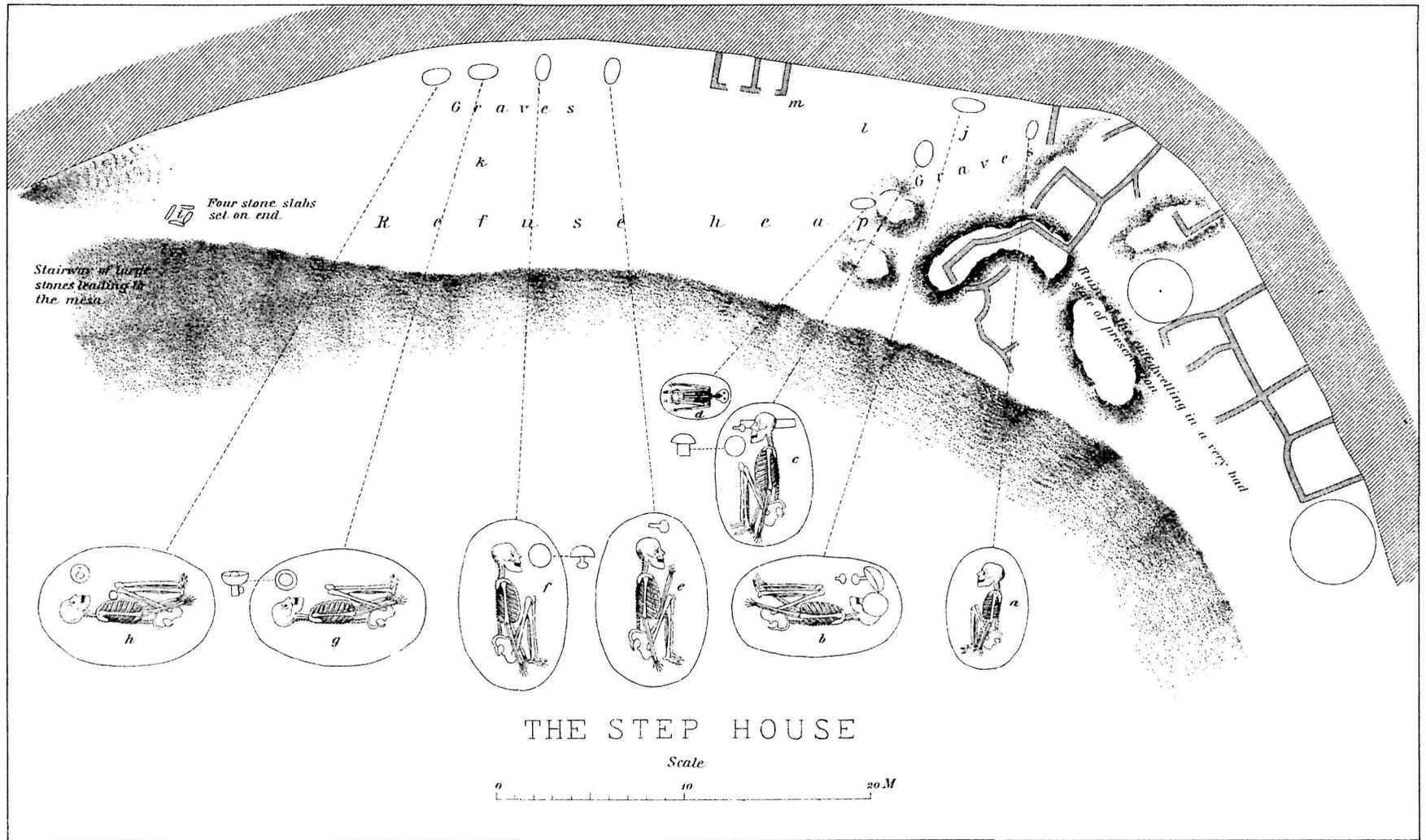


Figure 1. Reproduction of Nordenskiöld's original map of Step House Cave.

a habit which is repeatedly mentioned by Morris, Kidder, and Guernsey. It is also conceivable that cliff-dwelling people may have encountered a notable Basket Maker III burial in excavating a grave for one of their own, and reinterred his shrouded mummified remains with artifacts customarily accompanying their burials.

The listing of burial apparel and other accompaniments found in the eight graves follows: 4 large, 2 medium, and 3 small decorated bowls; 1 decorated and 1 coiled jar; 3 decorated ladles, 2 decorated mugs, 1 fine coiled basket half filled with ground maize, 2 digging sticks, 3 blankets of plaited cord, 2 feather-wrapped and 1 fur-wrapped; 1 cap and 1 pair of moccasins made of skin; and a rounded block of wood used as a head-pillow.

He also found a hiding place containing a number of objects which had evidently been buried designedly, perhaps on some occasion of hurried flight from an approaching enemy.

“Among these objects, I shall mention the following which were found almost at the same spot (j in the plan).

Several earthenware vessels; among them a large white jar with black design (Pl. XXXX). That it had been hidden purposely is suggested partly by its position, partly by the mouth’s having been furnished with a temporary lid, consisting of a lump of clay, to prevent the soil from falling into the jar. A large black jar (Pl. XXX: L) which had been hidden had been closed by laying across the mouth some small sticks and above these tangled yucca fiber.

A bundle of reeds, probably intended to be made into arrows.

A large piece of flint of the kind used in the manufacture of arrowheads.

A quantity of well-preserved maize ears.

A piece of cotton cloth.

Some woven baskets of yucca (Pl. XLIV: 4, 5).

Pieces of a white, kaoline-like substance, wrapped in maize leaves and lying at the bottom of a large jar. The substance was probably employed, as I shall show later on, in the manufacture of pottery.

The entire shell of a pumpkin with lid, the latter fastened with a string (Pl. XL:4). All the cracks were carefully stopped with clay. The pumpkin contained material for the manufacture of feather cloth, together with some cloth already finished.” (ibid p. 42)

This notable assembly of archeological materials, closely cached in sheltered space between the south tip of the cliff dwelling and the rear wall of the cave under less than one-third meter of cave floor debris, can be definitely assigned on the basis of Nordenskiöld’s text and superb illustration to the classic or Pueblo III stage of Mesa Verde occupation.

“At 1, we discovered three earthenware vessels, (Pl. XXV: 5, Pl. XXVIII: 4, Pl. XXVII: 5) of a common type, decorated in black and white” (ibid p. 42)

These consisted of one handsome classic Pueblo III bowl, 1 medium-size bowl, and one interiorly flanged kiva jar, without lid.

Basket Maker III Culture: “An oblong chamber (i in the plan), 1.5 meters long and 1 meter broad, situated close to the stairway and built of flat slabs of stone set on end, should possibly be also explained as a grave. Within it we found fragments of a coarse earthenware vessel, some charred maize cobs, and a little charcoal and ashes. The ashes contain phosphoric acid, and may thus possibly be the remains of bones. Close to these slabs, we discovered a small spherical earthen vessel of coarse execution (Pl. XXIV:10) and a large *metate stone* (Pl. XXXVIII) with two small rounded stones which had presumably been employed in the crushing of maize. If we are right in the assumption that this chamber is a grave, an assumption which cannot be regarded as anything more than a clear surmise, we have here an instance of cremation.” (ibid pp. 41-42)

The trough-type metate, the 2 single-hand manos, and the spherical earthen vessel of crude execution, are classic types of Basket Maker III artifacts. The fragments of a coarse earthen vessel, etc., were taken not from a grave, as assumed, but, as determined in our 1926 re-excavation program, from within the confining sandstone block and slab-walled entrance of a deeply buried Basket Maker III dwelling, designated as Room A in text and map in an ensuing section of this report.

“In another place (k), we found two earthenware vessels (Pl. XXIII:1, Pl. XXIV:2) of rather unusual type.” (ibid p. 42) In the plate text, Nordenskiöld described the former as a “large shallow bowl (diameter 50 cm.) of very rough execution . . . differs both in form and design from other vessels found in the cliff houses. Ware thick (10 mm.), material coarse and rather loose. Surface of gray color uneven and soft. Ornamented with a singular design, composed of small indentations close to each other and forming straight lines.

Found . . . at a depth of 6 cm.” Nordenskiöld described the latter as a “large ladle of very rough execution. Found on the same spot as the large bowl . . . which it also resembles in the loose texture of the material and the careless execution.”

Although Nordenskiöld recognized that these examples were uniquely different from other vessels found in cliff dwellings, he did not then realize that the large flattish bowl with lug handles (probably an accidentally fired mud-platter), the unique ladle found at his map location k, and the small crude spherical jar found at his map location i, were classic examples of the northern Southwest’s next to earliest presently known types of unfired and fired vessels.

Had Nordenskiöld extended the areal scope of his deeper excavations at map location i, he would have revealed the charred remains of the Basket Maker III homesite Room A, which was completely exposed for the first time in our re-excavation of Step House Cave 35 years later.

On September 14, 1891, Nordenskiöld decided to shift excavations to Spruce Tree House and ruins in its vicinity, and while three of his men were thus employed, he conveyed with the help of the other two, part of his collection on pack-horses to Mancos and by wagon to the railway station at Durango. There he was disagreeably surprised to find that the slight difficulties which had previously been thrown in his way by the authorities were renewed in serious form. His collections were legally seized and impounded under the custody of the late Reese McCloskey, eminent Colorado legal authority, who years later told me that he had been retained by the group of influential citizens who were concerned, in the absence of Federal restrictions, with terminating commercial collecting of Mesa Verde, and in the Nordenskiöld case, principally with preventing the removal of his collection from Colorado to Sweden.

During the two-week interval between seizure and court hearing, Nordenskiöld decided to complete his Mesa Verde research. He returned to his new camp, dismissed his laborers, and with two companions made an exploration of the whole of the Mesa Verde on horseback, photographing and mapping the principal cliff dwellings. The complaints against Nordenskiöld’s operations were formally abandoned in the ensuing court hearing which he was compelled to attend.

During the summer of 1892, Richard and John Wetherill and their brother-in-law Charles Mason were again industriously excavating in major Mesa Verde cliff dwellings and cave sites for the second or third time, and in Far View burial mounds for the first time, to assemble for the State Historical Society of Colorado, under the absentee supervision of Curator A.F. Wilmarth, the large and important collection which the Society acquired at a cost of \$3,000. This collection, and two prior collections which Charles McLoyd, a Wetherill expedition associate, sold as agent to the same Society in 1899, constituted a primary exhibit for the state of Colorado at the World’s Columbian Exposition at Chicago in 1893 and since, the Society’s primary Mesa Verde exhibit at Denver.

By late summer of 1892, John and Richard Wetherill and Charles Mason had resumed excavations in Step House Cave. They had made important finds there early in 1890; and in 1891 Nordenskiöld, with John Wetherill as foreman, had made by far his most important Mesa Verde collection in Step House Cave, including examples of a new and unique type of Mesa Verde pottery. John had participated in both digs, knew the depth and areal extent of prior excavations, and must have considered the potentialities of further excavation good.

To my knowledge, the only written record of this 1892 excavation, other than John’s very brief account published in **Traders to the Navajo**, by Frances Gillmore and Louisa Wade Wetherill (John’s wife)⁵, is embodied in an undated manuscript, “The Story of the Discovery and Early Exploration of the Cliff Houses of Mesa Verde”, written by C.C. Mason with the approval of the Wetherill brothers. The original manuscript, signed by author Mason, and John, Clayton, Benjamin Alfred, and Wynne Wetherill, posthumously for Richard with the notation “Killed by the Navajoes at Pueblo Bonito, N. Mex., June 22, 1910,” was published in the July 1, 1917 issue of the Denver Post, and subsequently on May 5, 1918, and deposited with the State Historical Society of Colorado. The text pertaining to their 1892 excavations in Step House Cave follows:

“But it remained for almost the last work we did in the region of Mesa Verde to give us anything like a basis on which to calculate time. It was late in the summer of 1892, while we were working on the State collection. In one of

⁵**Traders To The Navajo** by Frances Gillmore and Louisa Wade Wetherill. Houghton Mifflin, New York, 1934.

the far western branches of Navajo Canyon, at what we called the Step House, from a stairway or series of stone steps leading from the cave to the mesa above. Only a small portion of the northern end of the cave is occupied by buildings, leaving a considerable space open. In this open space Nordenskiöld made some good finds, but he did not go deep enough to get one of the most important items of information yet discovered. This cave does not seem to have been a favorite place of abode for the Cliff Dweller. They do not appear to have lived in it very long, and only a small community at that. On the surface of the space not occupied by buildings, when we were first there, was from one to two inches of fine dust. Under this was the usual cliff dweller rubbish, several feet deep near the buildings, thinning out to only a few inches at other places. Under this stratum of rubbish we found from two to three feet (it was not evenly distributed), of dirt similar to the surface dirt, only quite solid and compact and entirely devoid of any sign of human presence. Under this were the remains of ancient buildings of wood, no stone having been used in their construction. They had been destroyed by fire, but enough charcoal and partially burned wood remained to give an idea of how they were built, much like the Navajo hogan of today. We found 24 pieces of mica pottery, the roughest and crudest we had ever seen, being unglazed and unpainted. Not much different from what children sometimes make in clay, except that the shape was regular. A few bowl-shaped pieces had been molded in baskets, the imprint of the basket being unmistakable on the outside. Archeologists tell us that the first pottery was made that way. The important part of this discovery, however, is the positive proof of great antiquity of the older ruins, which could not be less than five thousand years, and probably they are much older.

More recent work on both sides of the San Juan river in southern Utah and Northern Arizona, proves beyond question that the caves of that section have been used as dwelling and burial places through long ages, and also indicates that two or more distinct races, or the same race in very different phases of its advancement, have successively occupied them. The skulls of the more ancient people are of natural shape, while the cliff house builder has the skull flattened perpendicularly behind. They appear to have made no pottery, but were adept in the manufacture of baskets. It is not certain that they used the bow and arrow, but certainly did possess a weapon, one called atlatl, still in use in some parts of Old Mexico. There were also many other differences in their manufactures and their mode of life. There is still much to be learned on this subject. However, there is a party of archeologists from Harvard College in the field each summer, with Clayton Wetherill as assistant, and as they know what to look for and where to look for it, they are

sure to throw some light on this obscure page of history.”

Mason’s concluding sentence concerning Clayton Wetherill’s association each summer with the Kidder-Guernsey expedition of Peabody Museum of Harvard, inaugurated in northeastern Arizona in 1914, serves to date the preparation of this manuscript nearly 25 years after the Wetherills and Mason had terminated their commercial collecting in Mesa Verde in the spring of 1893 for valid reasons. They realized that the end of profitable collecting in Mesa Verde was imminent; they barely made wages in 1892. Their greater concern was to assuage the mounting public protest that their commercial archeological enterprise had engendered.

Nearly 25 years later, in 1917, the five surviving members sought collectively through publication of this favoring defensive article to temper the public and scientific-educational censure that still persisted.

The statement on finding the burned remains of ancient buildings and describing their nature is unquestionably postulated on actual finding of considerable amounts of charcoal and remnants of some burned beams and crude fired pottery at certain locations in the refuse area; and second, on carelessly interpreting this actual evidence on the basis of the Wetherill’s early Basket Maker II findings north of San Juan River in Utah in the early 1890’s and Clayton Wetherill’s data on Kidder’s and Guernsey’s comparable findings south of San Juan River in Arizona in 1914-16.

These earliest cave-dwelling Basket Maker people whom Richard Wetherill first found and named in Butler Wash in southeast Utah in late December 1893 allegedly had neither pottery nor dwellings, and their nearest and dubious approach to architecture was small crudely roofed subterranean storage cists, sometimes walled with slabs of rock, many times later used as burial vaults.

Concerning the claim that crude fired pottery was one of the most important items yet discovered, Nordenskiöld and John Wetherill had the year before, in 1891, found three fine examples of this identical type of pottery in their Step House Cave excavation. Significant in this connection, since John also participated in the 1892 excavations in Step House, is his statement recorded in **Traders To the Navajo**:

Here was pottery, rough and crude, like the single bowl which he had found the summer he had worked with Nordenskiöld One by one the pieces came to light until there were more than twenty before him. Again he knew he had found a different people, earlier than the superimposed cliff dwelling culture, yet not the same as the Grand Gulch (Utah) Basket Makers who had not known the technique of making pottery.

In contemplation of, and about two years before the initiation of our re-excavation of Step House Cave in February 1926, later reported herein, I questioned John Wetherill at length concerning what had been found there in each of the three previous excavations in which he had participated. I particularly sought evidence of early occupation, our primary re-excavation objective.

Mutual interests led to warm friendship from our first meeting, about 1908. I soon developed high respect for his keen sense of observation and his vivid memory. Much of my early historical and archeological information pertaining to Mesa Verde, prior to its establishment in 1906 as a national park, was so derived. John’s information on evidence of earliest occupancy of Step House Cave was limited to the findings of masses of charcoal and some burned beams and crude fired pottery deep in the refuse area, when he was excavating there with Nordenskiöld in 1891 and with Mason and his brothers in 1892.⁶ He was greatly interested in our 1926 findings in the refuse area when I told him of these later, and commented on Kidder and Guernsey’s similar findings in a Tsegi Canyon cave in 1920.

If, on the basis of finding 24 pieces of crude fired pottery in this refuse area in 1892, John then knew that he had again found a new people antedating cliff-dwelling culture and differing from the Grand Gulch Basket Makers as published in 1934, it is likely that such a concept would have been communicated to Nordenskiöld following John’s first find of a large bowl of identical type in approximately the same location a year earlier. His concept of finding a new people does not appear in Nordenskiöld’s discussion of this unusual type of pottery or elsewhere in the Step House section of his monograph, and at no time did John Wetherill ever mention such a claim to me.

My interest in Mesa Verde and its ruins, in Step House Cave in particular, where Nordenskiöld made his principal finds, began in teen-age youth when our family doctor at Greeley, Colorado, permitted me to

⁶John joined McLoyd, Graham, and Patrick in the Grand Gulch excavation after completing the September 1892 excavations in Step House, and, with other brothers and Mason, he continued winter excavations there from 1893 through 1897.

examine repeatedly on his parlor floor a cherished copy of Nordenskiöld's monograph.

This interest and also experience in photography led to my association with Alfred Kidder, Sylvanus Morley, and other members of Edgar L. Hewett's Archeological Institute of America field party, in locating and making an adequate photographic record of the more conspicuous Mesa Verde cliff dwellings. This task was completed with Kidder's help during a brief period in the summer of 1908, when Step House Cave was first visited. Literature on Mesa Verde ruins from first discovery featured cliff dwellings to the practical exclusion of the hundreds of lesser ruins and camp sites encountered in hiking daily by the shortest practicable route across mesa tops and canyons, between our base camp at Spruce Tree House and cliff dwelling objectives.

My concern in regard to these minor open mesa and canyon sites, which indicated earlier widespread peaceful occupation, was enhanced with return to Mesa Verde in the late summer of 1910, to repair and stabilize failing Balcony House footings and walls and to clean up the residue of searched debris left in the cave by early pothunters. This four-months' experience in preserving a cherished cliff dwelling with the help of a small crew increased my interest in determining the facts of early occupation, also the desire to live year round in Mesa Verde. No archeologist had ever studied the conditions that the early people experienced in winter time.

In the summer of 1919, while repairing and cleaning up the remnants of excavation in Square Tower House, Dr. J. Walter Fewkes detailed Ralph Linton to investigate for the first time some of the numerous campsites on the mesa above. Under one apparent camp-site, Linton found a shallow, roughly circular subterranean pit with mud-plastered wall and floor. That the original roofing was pole-supported and covered with mud and soil was indicated by the layer of carbonized remnants of beams and burned mud and soil on the floor. Dr. Fewkes considered that this structure was an archaic type of Mesa Verde building, resembling those widely distributed habitations of non-pueblo people. He named it Earth Lodge A and erected a simple frame shelter to preserve it.

At another comparable site, Linton partially excavated a deeper circular subterranean chamber that had stone pillars like a kiva but mud-plastered walls. Dr. Fewkes interpreted this structure as a prototype of the kiva and an ancient stage of Mesa Verde development. Unfortunately, Dr. Fewkes was little concerned with the technical analysis of pottery, other artifacts, and details of construction — the data that collectively permit an assignment to an established category, or sequential stage of prehistoric development.

In the late fall of 1920, in the course of an archeological reconnaissance in southern Utah west of Colorado River for the Museum of the American Indian, I chanced to find and excavate the first Basket Maker II cave site north and west of the formidable Colorado River canyon. Some months later, I advised Dr. A.E. Douglas of the Tree-Ring Laboratory that I had selected and cached in dry sand at the cave site several of the best roof beams from the 31 subterranean cists, until his master tree-ring calendar could be extended to approximate Basket Maker II times. Sixteen years later he requested that the beams be sent for examination, and in July 1941, at the annual Tree-Ring Conference, he announced that Emil Haury of Gila Pueblo and he had independently confirmed Stallings' Laboratory of Anthropology cutting date of A.D. 217 for a pinyon beam.⁷ This Cave du Pont site, near Kanab, Utah, which yet remains the earliest site dated by tree-ring methods, also dates the earliest presently known unfired prototypes of Southwestern plain and decorated pottery. Although Kidder and Guernsey had found several comparable fragments in Basket Maker II cave sites in the Kayenta District of northern Arizona, later occupied by Basket Maker III and/or Pueblo people, definite Basket Maker II association of these specimens was problematical.

The desire to live year round in Mesa Verde was realized unexpectedly in early June 1921, and within a few days of my appointment as Park Superintendent, tent quarters were set up overlooking Spruce Tree House, pending later construction of a residence. Other than the first museum established in a national park — a two-room log cabin housing five sizable cases of Mesa Verde material collected through sporadic excavations and chance-findings of the park ranger assisted by one or two park laborers — the government development at Spruce Tree Camp, now Park Headquarters, was most primitive. The immediate needs of controlling public visitation to ruins, and inaugurating interpretive guide service and regular campfire lectures, received prompt attention.

Only rarely during the ensuing two years was there opportunity to further pursue my interest in determining the facts of earlier occupation, due to planning, improvement, and construction activities and time devoted to routine administration and visitors.

⁷Stallings, W.S., Jr., **A Basket Maker II Date From Cave du Pont, Utah.** *Tree-Ring Bulletin*, Vol. 8, No. 1. July 1941, pp. 3-6.

On her second visit to Mesa Verde in 1922, the late Stella M. Levison of San Francisco became gravely concerned that the log cabin housing our archeological exhibits was not only deplorably inadequate and ill-suited for exhibition purposes, but flammable and, for lack of funds, unattended. On the basis of our plans for a far larger permanent structure providing exhibition, library, laboratory research, and storage space, and an auditorium for conducting interpretive programs during inclement weather in particular, Mrs. Levison, in the absence of Congressional support, contributed \$5,000 for the construction of the first unit — a library and three large exhibition rooms.

In 1924, John D. Rockefeller, Jr., visited the park for several days with members of his family and friends. His interest was not limited to the ruins and existing museum exhibits. He was much interested in learning of future plans for museum development and interpretive service for visitors, of the record of early excavations, and the potentialities of expanding the scope and enhancing existing collections and archeological knowledge through the conducting of re-excavations and new excavations.

Before departing, he generously pledged, subject to my demand, funds for completing, furnishing, and equipping the first unit of the new park museum, and an initial fund, subject to increase as required, for conducting excavations and purchasing needed camping and excavation equipment.

In the fall of 1924, in the course of their visit, I took Kidder and Hodge to Step House Cave to study the potentialities of proposed re-excavation. On the basis of surface examination of the churned debris and the excavation habits of commercial collectors, we were agreed that re-excavation, however laborious, was scientifically desirable. To train a key group of white and Navajo Indian employees in re-excavation method that winter, floodlights operated from the park light plant were installed in the large, almost dark debris area in the rearmost north half of Spruce Tree House Cave. A child mummy with wrappings, several baskets and jars, and many miscellaneous artifacts were found in debris that had been searched repeatedly in semi-darkness.

In the early winter of 1925, until freezing conditions terminated work, we pursued similar methods in a small previously disturbed pueblo site south of Park Headquarters. The balance of the winter was devoted to furnishing and equipping the new museum and installing the new exhibits therein.



PART II

The Re-excavation of Step House Cave in February 1926

Step House Cave is located in the east cliffs of Wetherill Mesa, in a small bay of the second western tributary canyon, from the south, of Long Canyon, $1\frac{3}{4}$ airline miles distance north-northwest of present Park Headquarters, and $7\frac{1}{4}$ miles via the Rock Spring - Wetherill Mesa horse trail.



Figure 2. Expedition pack outfit leaving park museum for Step House Cave.
(Courtesy Denver Public Library)

Clint Scharf, wrangler for the pack-and-saddle concessioner during the travel season, furnished pack-horse transportation as required, assisting excavation at other times. Other members besides myself and youthful stepson Deric were Marshall Finnan, Chief Ranger; Jim Nair, seasonal storekeeper; Sam Ahkeah, Navajo foreman and interpreter; and Jim Corn and Johnny Hay, regular Navajo seasonal park employees.

We left Park Headquarters early on February 2, hiking and leading each of the six pack horses loaded with camping equipment and supplies on the first trip over the unbroken trail to our camp

site on the mesa rim above Step House Cave, where we arrived in the late afternoon. We had to break trail ahead of the pack animals on several north slope sections where the snow pack was up to breast height. I accompanied Scharf on the return trip for the balance of supplies and excavation equipment while camp was being established. We returned the afternoon of the fourth, and initiated excavation in Step House Cave the morning of February 5.

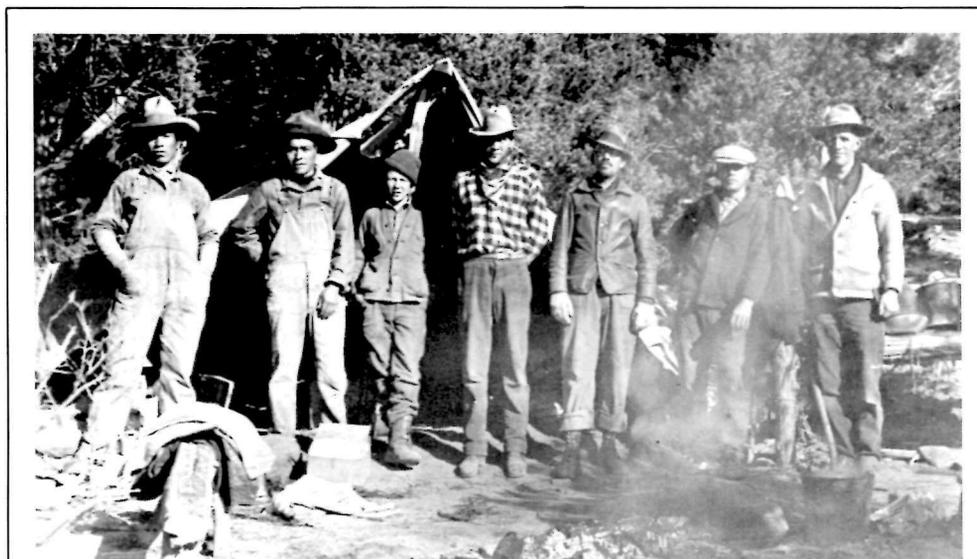


Figure 3. The expedition camp above Step House Cave. Left to right: Jim Corn, Sam Ahkeah, Deric Nusbaum, Marsh Finnan, Jim Nair, Clint Scharf, Jesse Nusbaum.
(Courtesy Denver Public Library)

Due to considerable overhang of the cave roof, the snow and frostline was located 29 to 30 feet down the talus slope bordering the front of the cave floor. After establishing reference points within the cave, we formed a skirmish line and started clearing plant growth and troweling up the frost-free talus slope to the depth of undisturbed mineral soil. Soon we encountered, bedded in mineral soil at depths ranging up to more than two meters, a chain of great boulders and lesser sandstone fragments extending across the front of the



Figure 4. General view of churned and cratered debris, Basketmaker III section of Step House Cave in the wake of the excavations of 1890, 1891 and 1892. View from the north end of the cave. (Courtesy Denver Public Library)

cave from the exposed section on which the cliff dwelling was partly erected. Obviously, a narrow section of the cave roof lip had fallen and shattered on the cave floor millennia earlier. To facilitate back-shoveling of troweled debris, these boulders were undermined on the low side and eased or barred down slope.

Near the end of the first week's work on talus slope excavation, we reached the front of the comparatively level and earliest occupied cave floor. Thus far we had found a considerable quantity of sherds, mostly Mesa Verde Black-on-white and coiled and indented ware of classic Pueblo III origin, including occasional fragments of thick, crude, sherd-tempered vessels, and

many sherds of plain gray or buff, rock-tempered ware. Several discarded handstones and a number of smoothed river cobbles, usually broken, were found. A few thick plain gray or buff sherds of coarse texture were found below the level of classic Pueblo III wares; but generally they were mixed, particularly in the upper levels, due no doubt to prior excavations.

From the break of the early talus to the rear of the cave, we followed the lowest floor of habitation, troweling with great care lest we miss a single artifact or detail of earliest occupation and construction, or of the later cliff-dweller occupation. Disposal of all searched debris over the talus became a prodigious job from the time we reached the area of deeper excavation on the rear half of the cave floor.

In the course of advancing the excavation front on this lowest and relatively level occupational floor, we found in locations not disturbed in prior excavations, randomly scattered whole and broken artifacts, rarely in recognizable association, underlying a barren layer of sand-soil deposit ranging from 50 mm. up in depth and, superimposed there, a layer of cliff-dweller artifacts and occupational litter, overlaid with the pilings of earlier excavated debris, usually in reverse order of deposition.

We had no difficulty in determining the areal limits and depths of debris tested, trenched, or excavated by the Wetherill-Mason parties and Nordenskiöld. The occupational debris filling the excavated pockets in the barren sand-soil layer sharply defined the extent and depths of their excavations in the top Pueblo III layer. Had the cliff dwellers made these excavations, we would have encountered artifacts and burials such



Figure 5. View of churned and cratered debris from the earlier expeditions as seen from the south end of the cave. Talus slope excavations in progress at lower right. (Courtesy Denver Public Library)

as the Wetherill-Mason parties or Nordenskiöld collected. Where these early excavations penetrated through the sterile sand-soil layer to, and in some instances below, the lowest occupational floor, the backfilling of debris included telltale Pueblo III sherds from the topmost layer of occupation.

1. Room A

Most of the front half of the extensive floor of earliest occupation had been completely exposed without encountering any *in situ* evidence of a structure of any type. We were becoming concerned at this stage of excavation. Soon, however, on the far left sector of our advancing skirmish line I exposed two sizable flat slabs of fire-reddened sandstone set on edge in the cave floor to form an obtuse angle. One was embedded in the turtle-backs of mud used to cap and level up the uneven top edges of other flat slabs that extended downward; the other was embedded at one end on top of a large block of sandstone to align with the vertical edge, which formed, with the other supporting slabs, the comparable obtuse angle of a subterranean structure. Unquestionably, Nordenskiöld had removed the other two slabs that formed the oblong chamber (i in his plan) in excavating what he thought should possibly be explained as a grave, due to findings of some charred fragments of a coarse earthenware vessel, charcoal, and ashes containing phosphoric acid. On this assumption, which he regarded as a mere surmise, Nordenskiöld thought that here was an instance of cremation.

Later, and to the right or northward of this first subterranean structure, designated Room A, were found evidences of two more subterranean structures, designated Room B and Room C, an exterior firepit with an adobe paved apron, and a possible pottery shrine.

A description of each architectural feature follows:

The initial excavation objective was to determine the limits of previous excavations within this site. Early excavators had facilitated this objective by building a rubble retaining wall on the floor as excavation progressed, obviously to withhold unstable

undisturbed debris which impeded their work. Here a section of intermural debris ranging from 1 to 1.5 meters in width was excavated to floor level, or to the higher level of a protruding boulder. The excavators who dug here did not realize that they were digging along the wall of a subterranean room.

Re-excavated debris from this naturally backfilled excavation included charcoal and sherds from the earliest occupation mixed with the sherds of the latest. Buried deeply in the floor was evidence that Nordenskiöld had performed this excavation: a paper bag containing a number of labeling tags with red strings attached, a sack on which he had listed his burials and noted commissary and other expedition needs, parts of **The Youth's Companion**, and newspapers dated 1890 and 1891.

We left this rough retaining wall in plan to mark the location of the first excavation of BM III material in Mesa Verde. We then sank a trench to the floor level on the opposite side of the retaining wall, and advanced this excavation at floor level to the vertical slabs encircling the pithouse.

Pithouse A's slab lining was continuous except for a 1.6-meter section that possibly was removed in the process of early excavations. Fortunately, only a small portion of the fill in the northwest quarter had been disturbed. Here, and in the related trench entering the

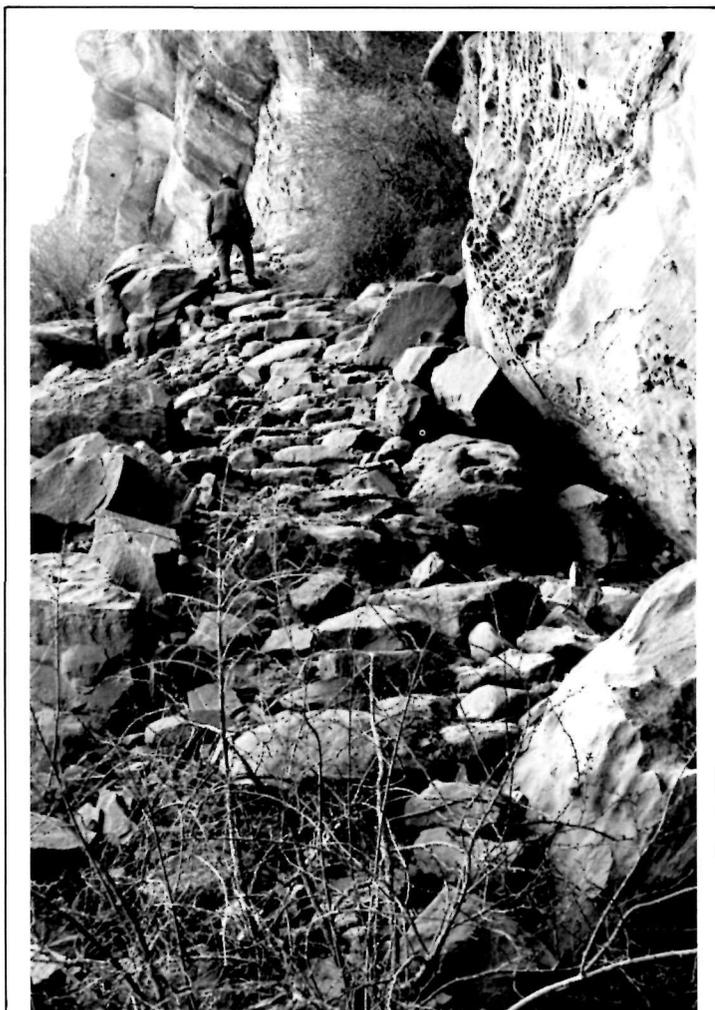


Figure 6. Lower section of south entrance trail to Step House Cave showing prehistoric steps.
(Courtesy Denver Public Library)

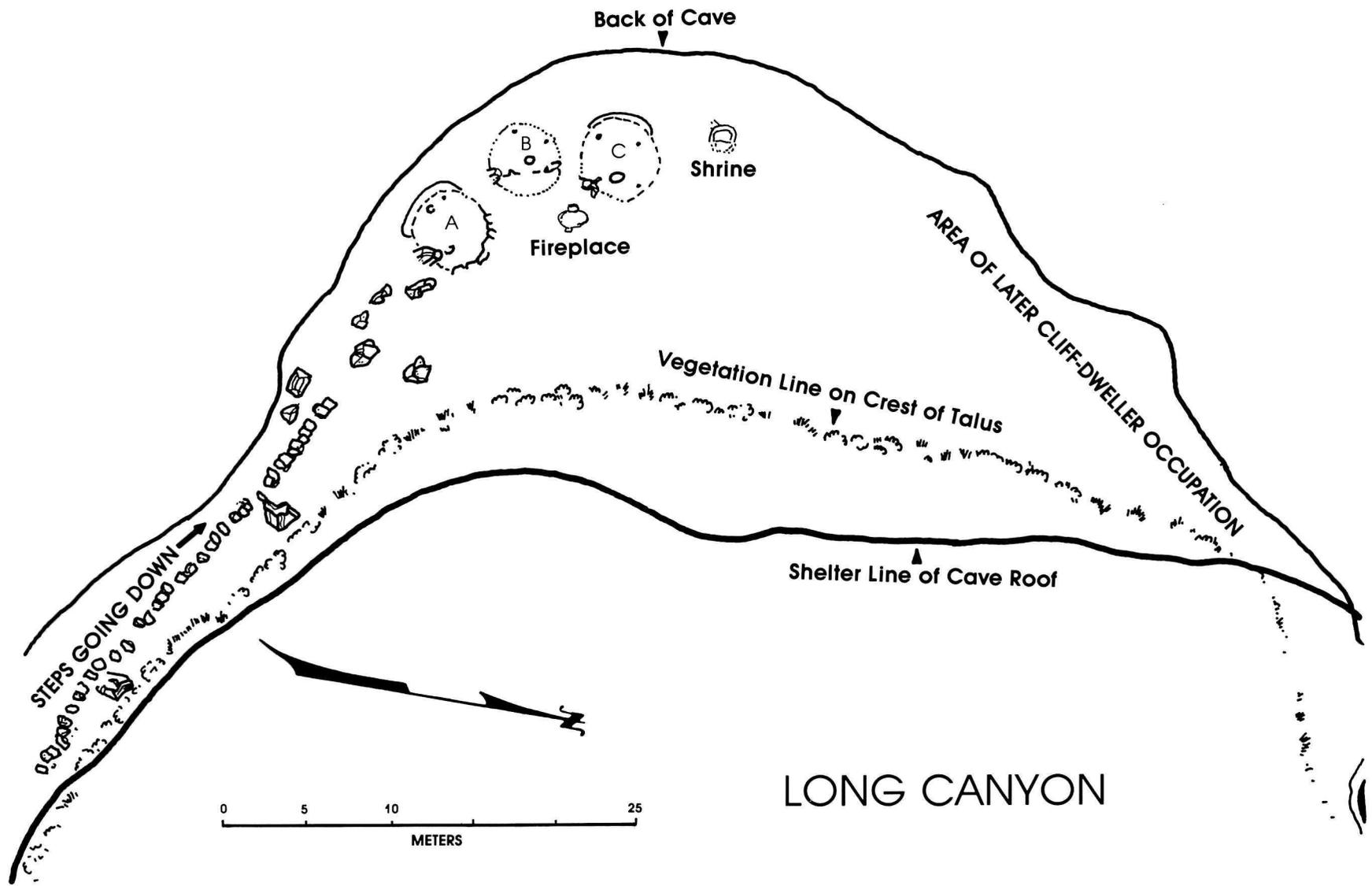


Figure 7. Plan of Step House Cave.

room, Pueblo III sherds and a small unscorched peeled pole were commingled with charcoal and Basket Maker III sherds.

The undisturbed fill disclosed scattered artifacts and material from the burned roof *in situ* on the pit-house floor and on the encircling bench. The burned debris was overlaid by barren sandy soil up to 1 meter in depth. This layer was in turn overlaid by Pueblo III debris. Above the undisturbed fill was the debris resulting from the early excavations, piled to variable heights in reverse order of deposition.

The charcoal layer contained small sections and fragments of burned clay about 5 cm. or more thick, one face of which retained impressions of closely laid native reeds. Occasionally, impressions of grass, cedar bast, small sticks, or small beams were also present. Apparently, open spaces between the small poles were bridged by a layer of parallel reeds which was covered with mud. Possibly this completed framework was thatched with cedar bast and grass, the entire surface being covered with mud and soil to insulate against winter cold. Protection from rain and snowfall was not a consideration in this sheltered location.

Several artifacts and numerous Basket Maker III sherds were found on the undisturbed floor. A large open-end trough metate of fire reddened sandstone was found in the southeast sector just beyond the retaining wall built by previous excavators. A one-hand mano rested on a flat shelf at the end of the trough. At the base of the slab-lined wall was a pendant made of a thin rectangle of fine-grained reddish stone with a hole drilled near one edge. Scattered over the floor were several flat river cobbles, some undamaged and some heat-cracked and smoothed by long use.

A sizable, globular-shaped, subfloor cist was found in the southwest quarter, less than a meter from the east-west axis and 45 cm. from the base of the wall. Its opening, which was about 25 cm. in diameter, was closed by a round sandstone cover. To our great disappointment, nothing had been cached in the cist.

The floor area of the room was essentially circular in form, averaging between 4.7 and 4.8 meters in diameter (fig. 3).

The slabs used in lining the basal wall of the subterranean chamber varied considerably in thickness and size, and few approached rectangular shape. Exposed faces were generally rough and irregular. The builders resorted to fibered mud to support the irregular slabs on the sand floor and to fill the gaps between slabs. The ragged top levels of the slabs were brought to a comparatively uniform level by courses of turtlebacks of mud, smoothed and rounded to form a top ledge. The slabs averaged

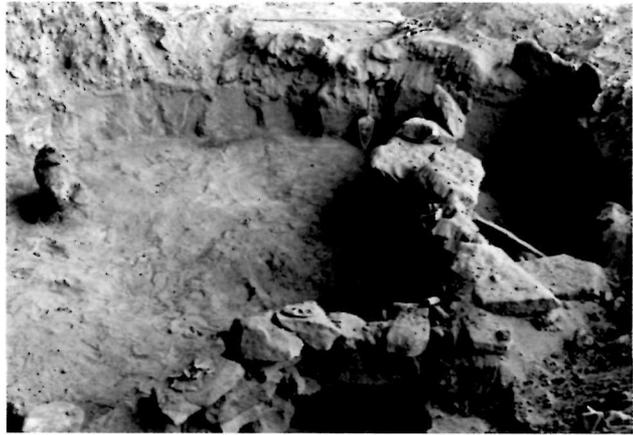


Figure 8. Room A during excavation, showing Nordenskiöld's dry-laid wall and the portion he excavated (between the slab and boulder wall of the room and the far side of his retaining wall). Two *in situ* vertical slabs encountered early in the excavation are seen at upper right. (Courtesy Denver Public Library)

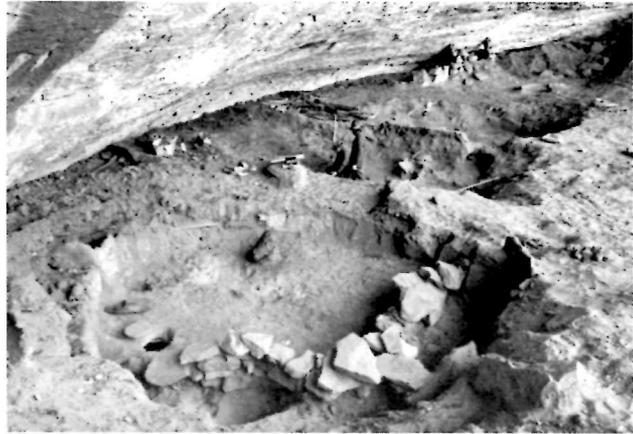


Figure 9. Completed excavation of Room A with Nordenskiöld's retaining walls left in place. (Courtesy Denver Public Library)



Figure 10. Rear portion of Room A showing floor, wall, burned beams and stubs of posts and bench with bin features including *in situ* artifacts. (Courtesy Denver Public Library)

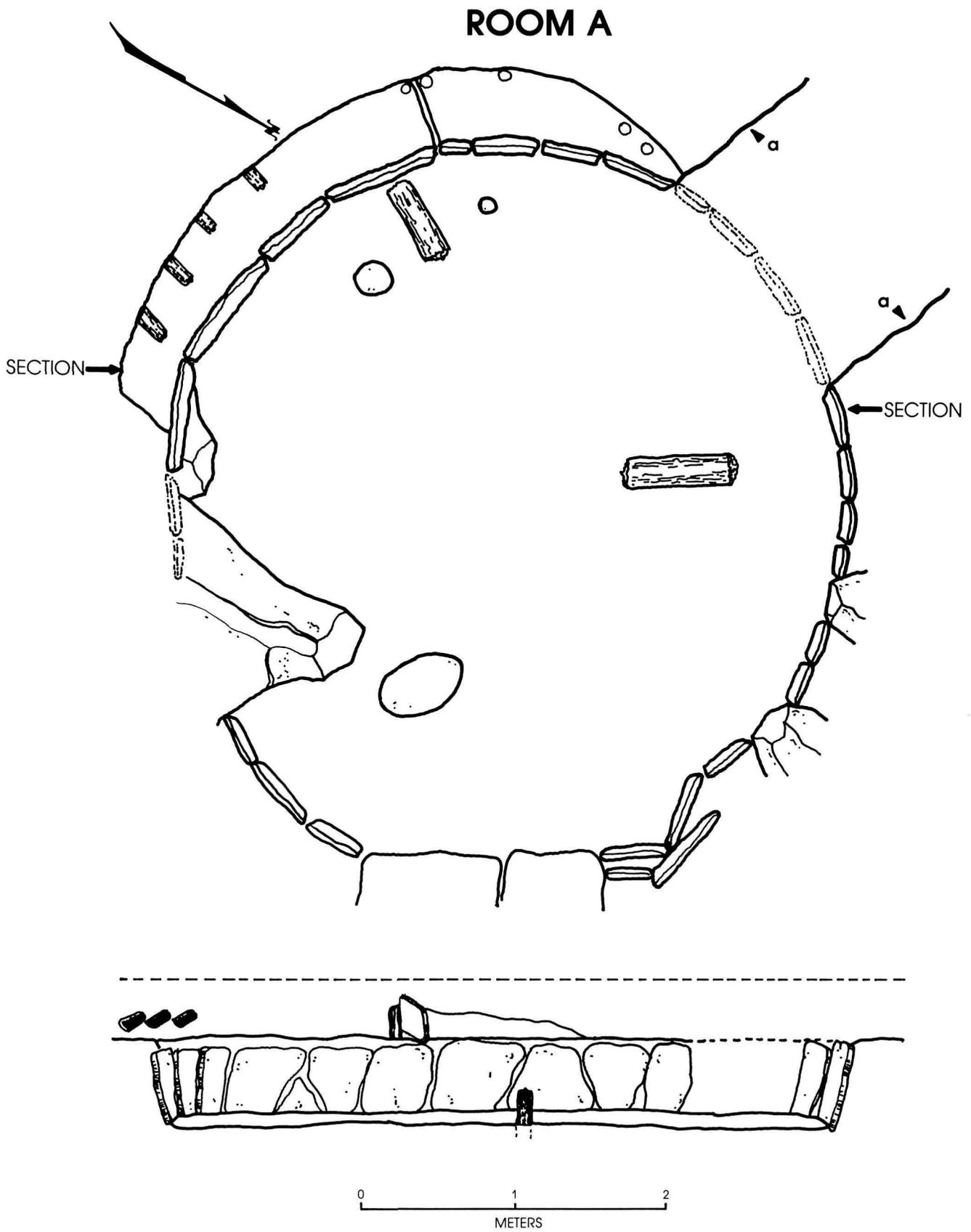
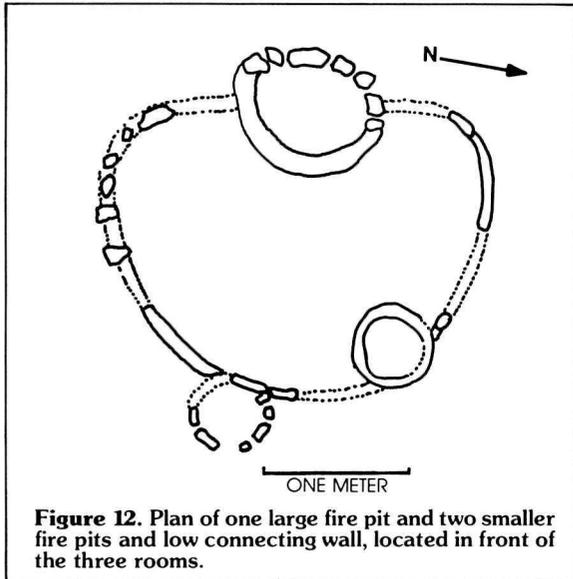


Figure 11. Plan and Profile of Room A. Letter a's mark earlier trench which cut through the southeast wall.



In the disturbed northwest section of the pithouse, we found a cake of browned and partially charred cornmeal, shaped to the bottom of a bowl, and a stack of five pairs of completely carbonized plaited scalloped sandals with inwoven raised dot patterning on the soles. Unfortunately, the point of a spall of sandstone had fragmented the stack, following carbonization, into 25 or more sizable fragments and the knot of cord binding that we salvaged. A charred skin bag containing unidentified food, and a mass of charred fragments of textile, probably a coarse turned-woven bag, and yucca-fiber cordage, were also found.

2. External Fireplace

As we advanced the medial section of excavation on the basic floor of the Basket Maker III occupation toward Rooms B and C, we encountered a few short undamaged sections of a low adobe wall, 12 to 15 cm. in width and height, and, intervening at some points, a curving row of rough spalls that had originally been covered with adobe to complete the curbing of an adobe-paved apron of general ice-tong shape. Between the points of the tongs was an exterior firepit of comparable shape, 76 cm. in width and 61 cm. in lateral depth. The rear half of the curbing was of rock, the balance of adobe. The curbing averaged 12 to 15 cm. in width. The depth of the firepit floor averaged 11 cm. below the curbing, which only extended 4 to 6 cm. above the adobe-paved apron.

This apron, later constructed about the original fireplace, was 2.65 m. in maximum north-south dimension, and in transverse dimension extended 72 cm. forward from the curbing of the firepit. Someone had apparently molded two smaller circular curbed firepits, approximately 56 cm. in external and 38 cm. in internal diameter, at the rim locations.

The unbaked curbing of the largely complete bowl averaged about 11 cm. in height above the apron. A semicircle of rock spall coring with some mud adhering was all that survived of the second small fire bowl.

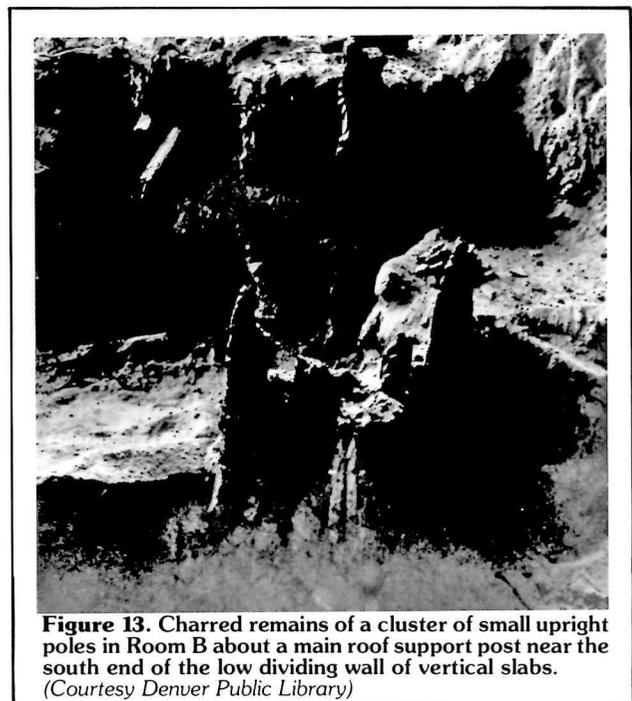
3. Room B

Just to the west of the apron, the layer of sterile sand separating the Basket Maker III debris from the Pueblo III trash terminated in an irregular line across the front of the cave. As we advanced to the west, debris from the undisturbed earlier cultural layers was encountered at increasing depths. Included in this layer were quantities of charcoal fragments, burned

58 cm. in height and leaned slightly outward so that their tops were about 5 cm. from vertical. The slab lining faced a bench 20 to 45 cm. wide, which encircled the entire room.

Figure 10 illustrates one of the better preserved sections of the bench. The burned-off stubs of roofing beams at the center of the photograph limited the original height of the space above the bench from 10 to 15 cm. At the right of the photograph is a storage bin on the bench. One side is formed by a vertical slab set perpendicular to the slabs lining the front of the bench, and the front is made of adobe turtle-backs built up on top of the slabs lining the bench. Charred stubs of small upright poles were found embedded at the rear of the bin.

In the bin are shown two smoothing stones and an extremely thin and highly smoothed plain gray shallow bowl with a notably flaring rim. Closely associated, but removed before the photograph was taken, were two unique scoop-like ladles or spoons, 8.5 and 9.2 cm. in overall length.



roofing adobe, and whole or broken parts of fire-reddened and blackened slabs.

In the wall of the southeast quarter, just below the original surface of the Basket Maker III occupation, were the burned-off stubs of three spaced roofing poles. These had slumped downward to expose a thatching of bark.

Extending northward across the floor was a row of vertical slabs forming a low division wall averaging about 23 cm. in height. Adjacent to this low wall were the remains of several upright posts averaging 8 cm. in diameter. Four of these posts were grouped closely together near the south end of the slab wall and had burned off 75 cm. above the floor. The other posts had burned off 12 cm. or less above floor level.

The hard burned mud plaster found on the front basal section of the row of four posts and abutting flagstone indicated that this group of posts may have been originally plastered. Embedded in the floor just west of this group of four posts and 45 cm. from the slab lining wall was the burned stub of a larger post standing about 40 cm. above floor level. A similar post stub less than 15 cm. in height above the floor was 2.13 meters to the north of this post and in a corresponding position to the low division wall. The positions of these two posts indicate that the builders had followed the conventional Basket Maker III practice of supporting a flat roof on four posts embedded in the floor.

A circular firepit with an adobe rim was located just west of the center of the slab dividing wall near the center of the room. The firepit averaged about 70 cm. in diameter, its bottom was 19 cm. below floor level, and adobe curbing around it extended to about 5 cm. above the floor. The depression was filled with compact white ash and was overlaid with burned roofing material.

Only in the immediate area of the slab dividing wall and the firepit did we find burned remnants of fallen roof undisturbed on the floor. At the south end of the slab dividing wall, undisturbed burned remnants were superimposed on a sloping fill of debris.

Elsewhere, previous excavators had left *in situ* only the burned stubs of the rear pair of large roof-support posts, a single wall slab, and traces of mud used to embed the missing wall slabs. This semisubterranean chamber was slightly oval-shaped, with a floor diameter of 4.52 meters east-west rear; and 3.81 meters north-south.



Figure 14. Room B after excavation. In right foreground is the largely destroyed subterranean kiln with draft flue.
(Courtesy Denver Public Library)



Figure 15. Remains of subterranean kiln showing at rear the orifice of the draft flue marred by an alluvial fan of sand which had sifted down. Northwest portion of Room C in the background.
(Courtesy Denver Public Library)

4. Subterranean Pit

About 1 m. north of the low divisional wall of Room B was a circular subterranean pit with incurving wall. This pit was 76 cm. in average floor diameter and 96 cm. deep below the level of Basket Maker III occupation in the cave. The constricted neck of this pit had been destroyed to within 55 cm. of its floor.

The interior wall of this subterranean pit which was excavated into the original compact cave floor, was deeply burned. All we found in this large deep kiln was the backfill of early excavation.

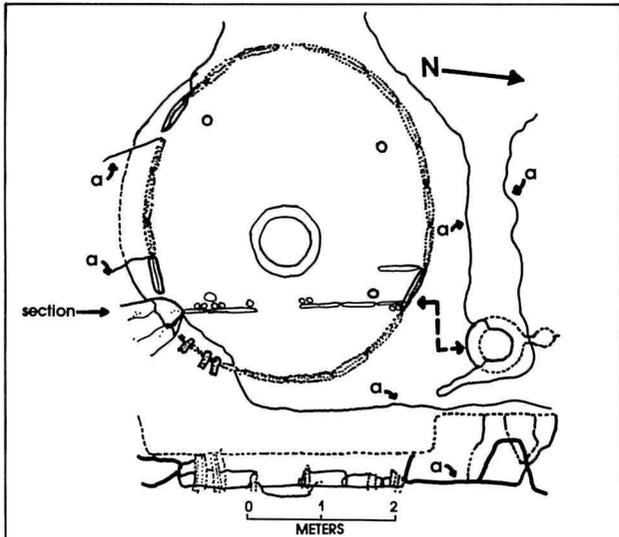


Figure 16. Plan and Profile of Room B. Letter a's show trench from earlier excavations which had largely destroyed the subterranean kiln.

5. Room C

To the north of Room B, we encountered a third semisubterranean dwelling.

The burned-off stubs of 4 roof-support posts were present in the floor. Between the front pair of roof supports was a circular fireplace. An adobe rim lined the pit, which was 60 cm. in diameter and 27 cm. in average depth. The adobe rim, which was reinforced with small rock spalls, averaged 15 cm. in width and extended 10 cm. above the room floor.

The wall, along the front of the bench, was slab-lined. This nearly circular, slab-walled chamber was just over 5 meters in diameter. The height of the slab wall averaged 48 cm. above the floor and the outward inclination of their tops was 5 cm. from the vertical. No mud turtlebacks to even up the ragged tops of the slabs were found. The top of the bench behind the slab facing had been plastered with mud.

Blackened sherds of Basketmaker III pottery, several manos and smoothed flat river cobbles, and a heat-cracked, open-end, trough-type metate constituted the only artifacts found on the original floor. Only sherds were found on the ledge or bench surrounding the room.



Figure 17. Room C, showing fire pit and two roof support posts in east portion of the room. (Courtesy Denver Public Library)



Figure 18. Room C after excavation. (Courtesy Denver Public Library)

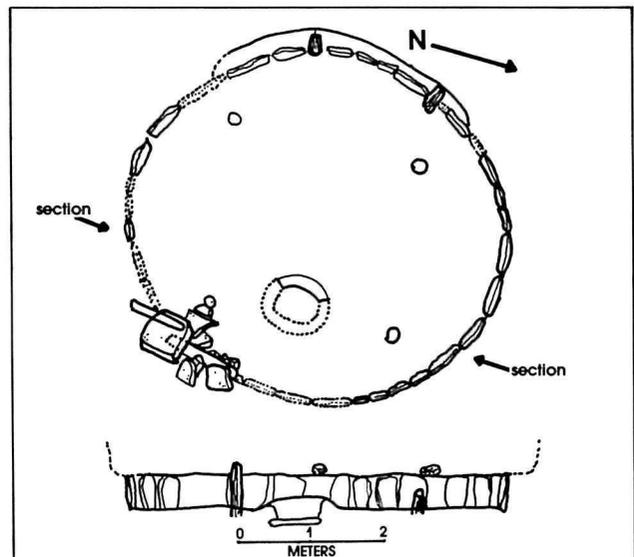


Figure 19. Plan and profile of Room C. Cross-section marked by arrows.

6. Pottery Shrine (?)

On the main floor of Basket Maker III occupation, 3.07 meters north of the nearest wall-slab of Room C, we encountered the southern and highest tip of the surviving half of a roughly circular, low-walled adobe structure with an adobe paved floor. The remainder had obviously been destroyed in the course of the Wetherill-Mason excavations of 1892. This semi-circular, low-wall structure of stick-and-bark, reinforced adobe, molded over a core of sizable rock spalls, ranged from 18 to 28 cm. in width at floor level and averaged about 15 cm. above the surrounding floor except in the southern segment where a higher upright slab was molded over with mud to form, with up-sloping curbing, a narrow butte-like crest, 26 cm. above the floor. The inside dimension of the basin through the center of the high butte-like crest to the approximate center of the gradually up-sloped but slightly lower center of the north curbing was 1.55 meters. The opposite inside dimension, as determined by the coved edge of a hand-size section of adobe paving in the otherwise destroyed half, was 1.62 meters.

The adobe paving and curbing of the surviving half of this wholly unique structure showed no evidence whatever of reddening or blackening by fire, or any sign of other possible uses. Fearing that I might have overlooked some detail in my original notes and plans of 1926 that would provide a clue, I again reviewed John Wetherill's written data and the joint Mason-Wetherill Brothers' summary-article, but to no avail.

I returned to Mesa Verde in mid-April 1949, and with Don Watson and Al Lancaster accompanying, I hiked across canyons through brush, snow, and mud to clean out the structure and study it. Again to no avail. On my return to Santa Fe, I chanced to recall that Alfred Wetherill, in support of his claim that he had discovered Cliff Palace a year in advance of his brother Richard and Charles Mason, had submitted to the Secretary of the Interior on June 15, 1948, a series of documentary exhibits and an article by himself, entitled "The Wetherills of the Mesa Verde," together with a notarized affidavit that "the statements I have made (in this article) are based on countless notes . . . are absolutely true and without exaggeration, to the best of my knowledge and memory."

The following excerpt from Al Wetherill's article reveals his participation in the 1892 Step House excavation and the long-sought purpose of this structure which, in all probability, he personally excavated.

Our early suspicions were confirmed when we were working in Step House. We found a small mud and stick wall, but did not get excited over it until we cleaned it out. The result was a large, rough bowl. There were

three or four other vessels, made like coconuts with the top end cut off. All were the same rough, unpainted class of work as the bowl. The bowl showed the marks of having been pressed into a basket to give it its shape. It was in pieces and could not have been baked. The markings were on the inside and were indentations.

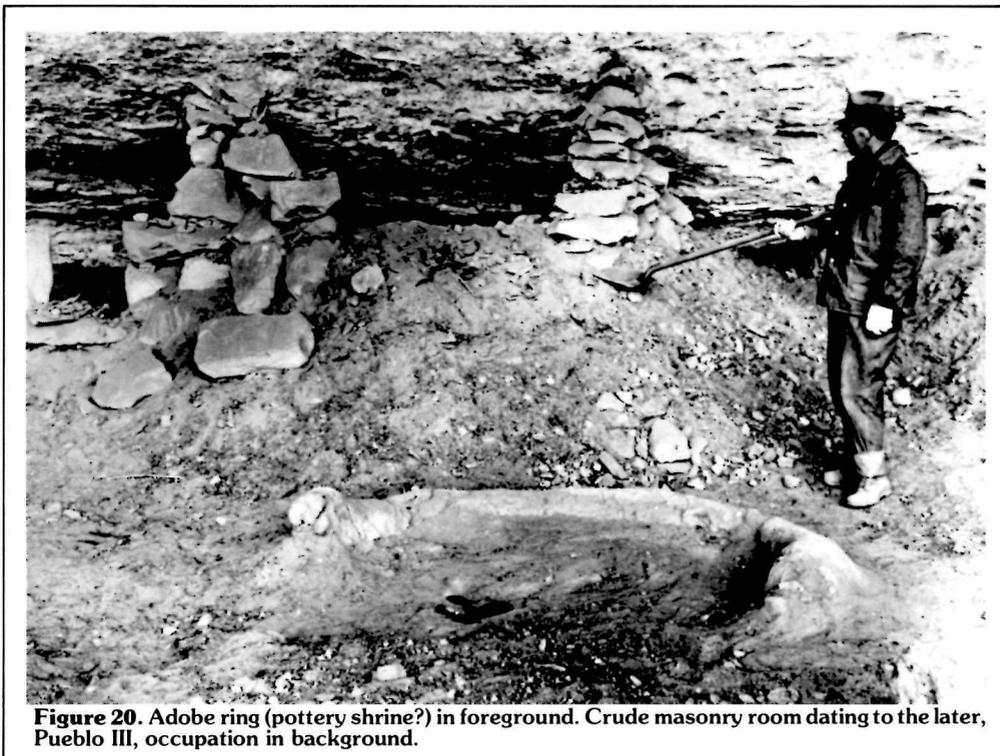
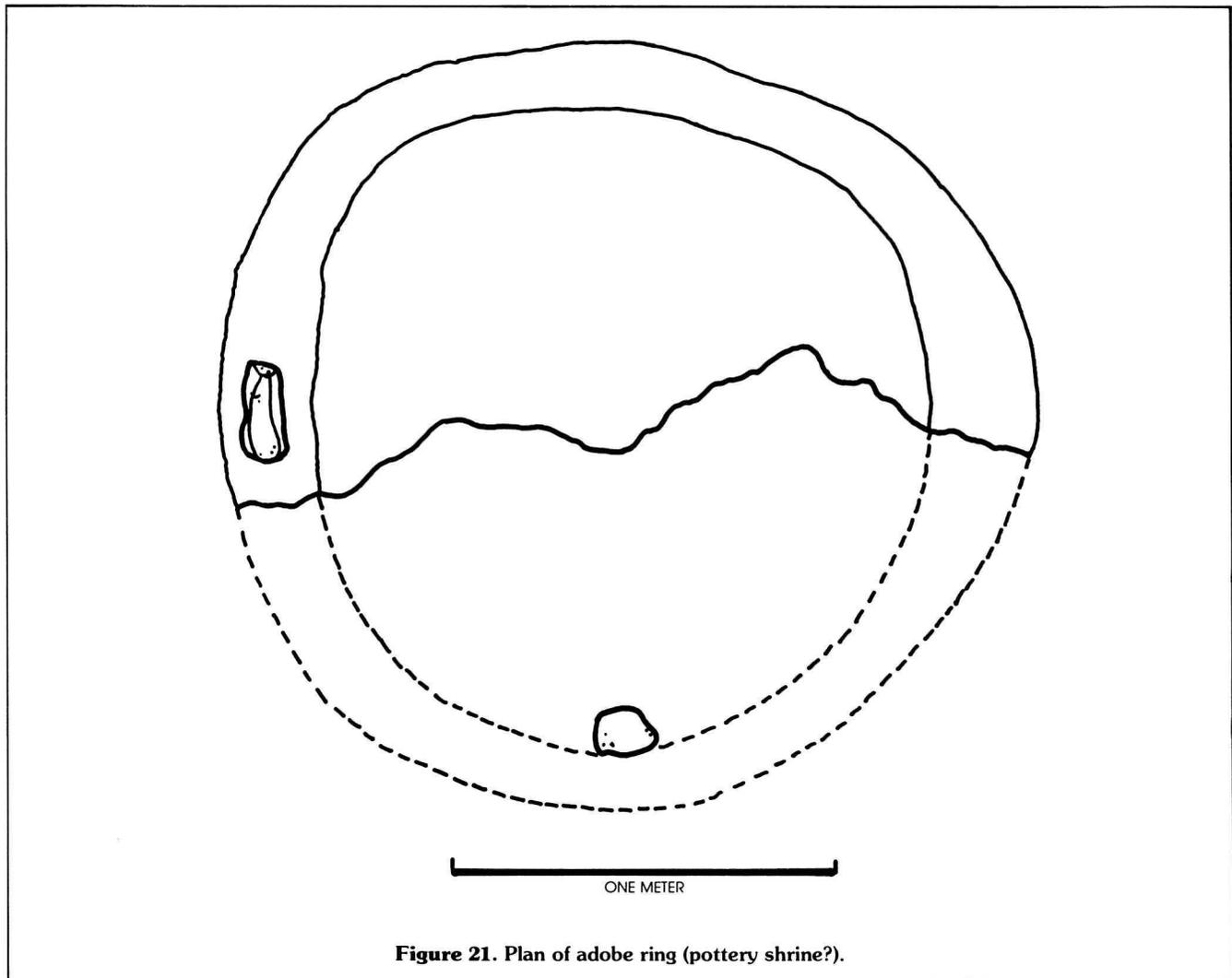


Figure 20. Adobe ring (pottery shrine?) in foreground. Crude masonry room dating to the later, Pueblo III, occupation in background.



If, as Mr. Wetherill states, “the bowl showed the marks of having been pressed into a basket to give it shape,” the basket impression would show on the exterior of the mud vessel. Conversely, in the final sentence, he states that “the markings were on the inside and were indentations.” On the basis of these conflicting statements, it is logical to assume that this vessel was similar to the notable example that John Wetherill of the Nordenskiöld party found the previous year in the immediate vicinity of this structure. Nordenskiöld illustrates his specimen in Plate XXIII: 1A and B, and describes it as interiorly “ornamented with a singular design, composed of small indentations, close to each other and forming straight lines.” The Wetherill-Mason party of 1892 began their excavations at this location, and it is probable that Nordenskiöld’s notable vessel was originally associated with the mud vessels found within the shrine enclosure.

Whether this small paved enclosure was a shrine dedicated to pottery, as I am inclined to believe, or these early forms of vegetable reinforced mud vessels were used as containers for other ceremonial paraphernalia is immaterial, in my opinion. The important factor is that these primitive approaches to pottery appear to have served a ceremonial purpose, and ceremonial objects and practices persist unmodified through very long periods of time with complete indifference to the progressive stages of cultural advance.

In all probability, these crude mud vessels represent the first stage of transition from basketry to fired pottery, and, therefore, were ceremonially cherished and perpetuated as a symbol of this significant later achievement. Commonly in all Basket Maker III cave sites, as Morris has demonstrated, from A.D. 473-78 in Red Rock Valley through the long range of Canyon del Muerto sites extending to the late 600’s, and as Morris, Roberts, and others have demonstrated in open Basket Maker III sites, extending as late as the early 700’s, where accidentally fire-hardened by burned roofs, fragments, and, rarely, whole crude mud vessels are found in association with an abundance of true fired ware, regardless of the relative stage of plain, polished, and decorated pottery then achieved.



Figure 22. General view of Step House Cave from the north end, showing excavation near completion. Room C is in foreground with the clay enclosure (shrine?) at lower right. Prehistoric steps are visible at extreme upper left.



Figure 23. General view of Step House Cave from the south end, showing completed excavations. Room A is at lower left, Room B near center and Room C at right.



Figure 24. Expedition pack outfit loaded upon completion of the 1926 re-excavation and preparing to depart from Step House Cave.



PART III

Artifacts From Step House Cave

1. Pottery

The Basket Maker III ceramic wares from Step House Cave constitute a thoroughly typical exemplification of the progressive stages of pottery making from a genesis of crude unfired mud platters, reinforced with shredded bast and grass, and molded largely in flattish baskets, through true fired vessels of rock, then rock and sand, and finally sand-tempered clay paste. These range from the basic and most abundant globular, depressed or elongated squash pots with large orifice and of fairly uniform size, upward to necked jars of varied shape and size, and down-ward to small hemispherical bowl forms with tapered rims. Progressively, the symmetry of forms improved and irregularities on the exterior of jars and the interior of bowls were reduced by scouring and floating, followed by increasing degrees of smoothing and polishing. The culminating stage was simple ornamentation of the interior of thinner bowls with painted design elements which apparently were taken over directly from the pre-existent art of basketry. The exterior surfaces of a majority of painted bowls and of some earlier jars were given a wash of impermanent or fugitive red iron oxide after they were fired.

In the sheltered bench bin of Room A, we found the only whole pieces of Basket Maker III pottery, other than crude toy miniatures and miscellaneous small objects found generally and described later. This group of five intact specimens, all of plain gray ware, included an extremely thin, highly polished miniature bowl with markedly flaring rim, 7.5 cm. in diameter, and two ladles with thin solid handles.

The volume of Basket Maker III sherds, found principally in previously excavated debris, with lesser quantities on undisturbed cave and dwelling floors, was impressive. The sherds were carefully wrapped and transported to the Park Museum for subsequent washing and study; and insofar as practicable, and as time permitted, the Basket Maker III sherds were assembled into jars and bowls for museum exhibit.

The problem of matching plain Basket Maker III sherds was an arduous and difficult task since so many sherds of buff or gray ware vessels, blackened by refiring, appeared markedly different from the sherds with which they fitted. In the course of a month's work, several of us assembled nine practically complete and four largely complete jars as follows: five culinary squash pots, ranging from 12 to 20 cm. in maximum diameter, 13 to 21.5 cm. in height, and 9.5 to 10 cm. in mouth diameter. A sixth was largely assembled. The assembled upper half of a seventh squash pot was uniquely ornamented with five petal-like scallops of applied clay fillet about the orifice. Three spherical squash jars with short vertical, nearly vertical, or slightly flaring necks ranged from 18 to 30 cm. in maximum diameter, 21.5 to 29 cm. in height, and 12.5 to 17 cm. in neck diameter. Two larger jars were mostly assembled — an olla with tall vertical neck, and a jar with a fugitive red wash on the exterior; also one very small potato-shaped jar, 6.5 cm. in diameter, 8 cm. in length, with a small orifice.

Also assembled were the 10 sherds of crude unfired mud platters, fortified with cedar bast and grass tempering, with basket impressions on the bottom side. Four matched sherds formed an interior basket-supported section in one platter. The other six, probably accidentally fired, formed a section extending from within the basket support to the arc of its unsupported molded rim. The arc of the rim indicated that this second mud platter was approximately 45 cm. in diameter.

The culminating ceramic development of the Basket Maker III potters in Step House Cave was to be seen in small deep bowls with tapered rims and interior decoration, ranging up to 20 cm. in diameter and 10 cm. in height. In all, 48 painted bowl sherds, including 30 rim sections and one exteriorly painted jar rim sherd, were found. These represented 36 different bowls and one jar. Nine painted sherds from one bowl were assembled and restored. The interior surface of this bowl was notably smooth. The crudely painted decoration, probably of black organic paint, consisted of a narrow irregular banding around the inside top

and inside surface of the rim, and, half-way down the side of the bowl, a pair of encircling lines filled with two rows of dots and bordered on their outer parallel sides with a row of closely set opposing triangles. In the process of firing, probably over-firing, the black decoration was reduced to an irregular dull red color, the unpainted body of the bowl to a pinkish cast.

Only a few other sherds matched the interior and exterior smoothness of the above sand-tempered sherds. Most of the sherds were rough on the outside, floated or polished interiorly to a variable degree of smoothness such as granular rock-tempering permitted.

Of the balance of decorated sherds, a majority show single or parallel step-line decoration radiating to rims probably from a common center, although we found no bottom sherd to support this hypothesis. Single step-lines are fringed with lines and pennants or pyramids, the latter either solid or filled with dots. Parallel step-lines are fringed outward and sometimes dotted between the lines.

Basic design elements are the line, usually straight and stepped, often in pairs and fringed with pennants, triangles, and lines; the dot-filled space; basket stitch; triangle, rectangle, and diamond, plain or fringed, and sometimes in multiple panel arrangement. One sherd has a roughly circular panel decoration, with six radii, fringed with closely set opposing triangles and pairs of stacked pyramids pointing outward in the field between radii.

All basic design elements appear to fall into three primary decorative patterns: the encircling band halfway down the inside of the bowl, narrow line stepped figures radiating nearly to rims possibly from a common center — although there are no bowl bottom sherds to so indicate — and individual panels below the rim, probably balanced and opposing.

In color, painted designs range from blackish matte to dull brown, and in cases of over-firing or complete oxidation, to varied shades of dull red. The outside surface of a majority of painted sherds is quite rough in texture and washed with fugitive red oxide.

The only plausible explanation for this paucity of decorated sherds is that they attract first attention. Nordenskiöld, no doubt, encountered and collected some, and the Wetherill-Mason parties, in their apparent customary manner, pocketed unique sherds found in this site and emptied their pockets elsewhere. In the course of six winter re-excavation programs, principally in rooms and kivas they had previously excavated, we found most of the sherds of broken bowls and jars in their backfill, since they didn't bother to collect these. But important missing decorated sherds were several times found remotely, even in other ruins. From 1890 until I stopped the practice in 1921, visitors had the liberty of picking up whatever sherds they desired, and few failed to collect sherds.

In January 1949, at my request, Don Watson, Park Archeologist, and Al Lancaster, Archeologist Aid, made an analysis of the balance of Basket Maker III plain sherds from Step House Cave still held in storage at the Park Museum.

The 2,160 plain Lino sherds, which represent the dominant pottery development, appear to fall into two groups: 1,821 dark gray to blackish, and 339 light in color, buff. These, they reported, are without doubt all of one type, and the color difference is probably due to over-firing and refiring. However, after handling all these sherds, Van Cleave and Lancaster felt very definitely that the buff sherds, in general, have a smoother surface finish.

The 341 sherds of polished ware of later type, generally blackish in color exhibit considerable variation in polishing technique and surface texture. The outsides of jars and the interiors of bowls, the most important exposures, received primary attention. Numerous sherds are polished to the shiny stage without attempt to smooth undulating, dimpled, and striated surfaces, and the extrusion pimples caused by rock temper. In other sherds, these surface irregularities have been smoothed down to a more uniform surface. The polish is duller in appearance; and generally, as a result of more polishing effort, the surface finish is many times crackled or checked.

On the assumption that each of the three burned dwellings housed a single family, the over-all production of jars and bowls alone may be closely approximated from the records of excavation in 1891 and 1892, and our collection of every sherd we encountered in re-excavation and new excavation. The over-all record, actual and estimated, follows:

Whole pieces

Nordenskiöld 1891, 3: Wetherill-Mason 1892, 24:	
Alfred Wetherill 1892, 4	31
Re-excavation of 1926	1

Re-assembled from 1926 Re-excavation sherds

Jars 13
Decorated bowls 1

Represented by sherds (Mud platters and decorated bowls only).

Mud platters 2
Decorated bowls 35
83

Unassembled sherds in storage at Park Museum, January 1949

2,174 plain Lino-like sherds. Included are 77 sizable rim sherds of spherical incurving neck squash pots which Watson, Van Cleave, and Lancaster report as representing at least 60 individual squash pots 60
(An average of 12 sherds per pot of 720 sherds is deducted for squash pots.)
The balance of 1,454 plain sherds, and 341 polished sherds, totaling 1,795 sherds, would, on the basis of a high average of 20 sherds per larger jar and small bowl, represent a minimum estimate of 90 bowls and jars 90
Total jars and bowls, actual and estimated 233

In this connection, it should be stated that we only crosstrenched two locations in the narrow strip of churned debris at the rear of the cave behind the dwellings where Nordenskiöld found all but one burial, and, as a result, probably failed to collect some Basket Maker III sherds. Also, since 1926, requests of scientific-educational agencies for Basket Maker III and other Mesa Verde sherds have been filled by the Park Museum from miscellaneous storage sherds.

The paste of fired pottery from its inception was consistently tempered with rock, coarse ground for the thicker utility wares, more finely for the thinner wares with two known exceptions: the painted bowl, assembled and restored from nine sherds, and two sherds of a similar bowl of comparable surface smoothness. Stanley Stubbs of the Laboratory of Anthropology cooperated in the preliminary examination of these smoothest Basket Maker III sherds and of a selected series of each type of coarse and fine rock-tempered sherds, using a binocular microscope with a magnification of 40 diameters.

The smoothest painted sherds were sand-tempered, the grains worn to roundness by water and wind action. The other painted sherds of rougher texture included both rock and sand-and-rock-temper. The vast majority of plain gray and buff sherds, resembling Lino Gray of northern Arizona, is tempered with a crushed or ground biotite andesite, characterized by coarse quartz grains with small black magnetite inclusions. Protruding quartz accounts for the rough surface texture of most of the Basket Maker III pottery. The generally smoother surface texture of the contrasting minority of buff sherds, including some blackened sherds, is characterized by small flakes of white mica. Undoubtedly, the surface flakes of mica prompted the Wetherill-Mason party of 1892 to refer to the 24 pieces of pottery they found as "mica pottery" in the joint article published on July 1, 1917. This rock temper appeared under the microscope as a finer-grained igneous rock, probably an intrusive diorite.

Two sizable pieces of this micaceous dike rock, so rotten and friable that the weathered edges could be reduced to coarse and finer grit between thumb and palm, were found on the floor of Basket Maker III occupation. A dike of this intrusive volcanic rock fissures the Mesa Verde plateau on an angling line from southwest to northeast. Being softer than the Mesa Verde sandstone cap rock, it created ditches in the cliff wall of Navajo Canyon at two locations. The more conspicuous exposure is the tabular wall that stands several meters above softer sediments on the floor of Rock Canyon, about 4 miles south of Step House Cave. This prominent exposure was no doubt the source of this temper.

Crushed rock temper, primarily biotite andesite, predominates in the material from its inception. The smoother, generally buff-colored, plain ware with distinct flakes of mica is probably tempered with diorite. Complete or re-assembled plain vessels found in 1926 are tempered principally with andesite, yet the Wetherill-Mason dig of 1892 yielded 24 pieces of "mica pottery", presumably of this diorite-tempered category. Sand temper appears alone or combined with rock in approximately half the painted pottery only. Sherds of only the two smoothest bowls are tempered with sand alone. There was no evidence of the use of sherd temper.

On the basis of the above data, it seems probable that during the Basket Maker III occupation of Step House Cave, crushed or ground biotite andesite was first and principally used, weathered micaceous diorite was used towards the end of the occupation, sand in combination with fine rock temper was used midway in the development of thin painted bowls, and straight sand temper was used in the final two painted bowls.

Double Bowl: Two matching buff rim sherds with micaceous rock temper, washed on the exterior surface with fugitive red oxide, provide the only evidence of a double bowl. To a basic bowl, with a projected diameter of 12 cm., a second bowl of comparable size was so fitted that the mutual bowl rim is only appreciably thicker than the dominating rim of the basic bowl. The union was thickened and smoothed exteriorly.

Lug Handles: Two large heavy lug handles of squarish shape, obviously from different large-neck jars, were found. Curvature of the jar attachment indicates that they were set in a down-raked position, below the level of maximum jar circumference.

Miniature Carrying Basket Forms, Unfired: The two type specimens of unfired, fibered mud, with regular or irregular patterns of punctate dot decoration, were found. These flare outward at the larger end to form an integral bowl of shallow oval shape at a slightly obtuse angle with the axis of the stubby pointed end. The over-all lengths are 6.8 and 7.1 cm. Morris has found examples, with the back side perforated, at locations where the loops of carrying baskets are inserted. His interpretation of these clay forms is unquestioned.

Scoop Ladles or Spoons: Apparently this earlier form evolved in fired pottery to a spoon-shaped bowl with upturned edge flush with its short flattish handle, and to a refined form of the original prototype, the latter having a larger, thinner, and deeper bowl of roundish or oblong conical shape with a small and shorter tapered handle, round or slightly flattened. None is perforated. Of the flat spoon form, one complete specimen, 6.6 cm. in length, and one handle section were found. Of the refined type with extremely thin tapered rim bowls, there are two complete specimens, 7 and 8 cm. in length, and a bowl. These fired scoop ladles represent in all probability the symbolic perpetuation of the crude mud prototype in refined and more realistic form. What they and the spoon form were used for otherwise is problematical. Our Navajo assistants said they were medicine spoons such as Navajo medicine men used when they didn't use shell spoons in giving medicine to patients, and they proceeded to demonstrate how they were used.

Miniature Pottery, Toys and Effigies: In all, 29 specimens, nearly all fired, were found. Of 15 rounded disks or pellets of clay ranging from 1 to 5 cm. in diameter, 10 were slightly disked, forming thin shallow platters ranging from 1 to 2.75 cm. in diameter. Of five other pellets of clay, oval in cross section and 2.5 to 4.2 cm. in diameter, two have center perforations and one is perforated near the edge. The larger of two pear-shaped pellets, 4 cm. in height and 3 cm. in diameter, is perforated at the small end. Two roughly globular pellets with deep finger indentations suggest the beginning of deep bowl or jar forms, of which there are two examples: a deep bowl with incurving rim 3.5 cm. in diameter, and a necked jar 4 cm. in height. The balance includes a broad flat bodied animal effigy, 3.5 cm. in length, bear-like in general appearance and with short stubby legs; a flat, somewhat rectangular tablet of clay, 3 by 5 cm. in size with a raised horseshoe-shaped fillet at the top with points directed downward suggesting a miniature cradle; and a miniature pottery form not found in recognizable sherds — a wide-mouthed pitcher, 3 cm. in height.

Jar Covers, Unfired: One thick jar cover of unfibered clay, averaging 12 cm. in diameter, preserves both the cast of the outflaring rim of the jar, which it sealed, and an impression of the contents of the jar, the top layer of five parallel ears of corn. The other clay jar covers, one fibered with grass, one with cedar bast, averaging about 6.5 cm. in diameter, carried no impressions of contents of the jars.

Pottery-making materials: These consisted of one sizable lump of pottery clay, unworked; two small blocks of worked clay, 5 by 7 cm. and 8 by 13 cm.; and the two chunks of friable igneous diorite, previously described, used for tempering.

2. Stone Implements

Mealing Stones: Meal milling stones comprised eight typical Basket Maker III one-hand type manos of customary size, one of smaller size, and fragments of broken manos. Most of the manos show considerable wear. Also found were two large, open-end, trough-type metates made of the hardest and sharpest sandstone slabs available, and remnants of others. The largest, fire-cracked, on the floor of Room A, was roughly rectangular in shape, 56 cm. in length, 46 cm. in width, and 6 to 7 cm. in thickness. A comparable metate, more badly shattered by heat, was found on the floor of Room C. Nordenskiöld found an undamaged specimen on the cave floor to the side of the entrance of Room A. Apparently one metate and several manos

comprised the milling equipment for each family dwelling.

Pecking Stones: Eleven pecking stones, the most primitive and prevalent type of stone implement in the San Juan country, were found in this site. Fist-size river gravel and fractured spalls of the hardest rocks, selected to fit the hand, were gradually fractured and flaked in subsequent use to comparative roundness. These, reduced through long use to nearly spherical form, were found principally in talus debris fronting on the cave floor, indicating that they had been discarded.

Hammerstones: Only two specimens, both of river gravel and nicely suited to hand use, were found. One showed evidence of little shaping; the other was nicely smoothed to squared sides.

Worked Stones, Large: The larger, heavier flat river cobbles, with smooth rounded surfaces further smoothed by long use, probably served as floor or lap anvils. Three specimens were found.

Rubbing and Smoothing Stones: Of the eight specimens found, seven were of a size of flattish river gravel, adapted for single-hand use in rubbing and smoothing operations. They ranged from small to maximum hand-size. Only one specimen was too large to grip with a single hand.

Pot-polishing Stones: Only two of these, small highly polished stones, were found.

Jar Lid: This thin sandstone slab is 8 cm. in diameter.

Cooking Stone: This smooth fire-reddened sandstone slab of roughly rectangular shape, 32 cm. in length and 22 cm. in width, found on the cave floor away from burned buildings, was probably used as a griddle for cooking purposes. Some of the surface was whitened, some darkened by long use.

Projectile Points: Two complete triangular points with comparatively long straight shafts measure 5.3 and 4.5 cm. in over-all length, and a similar point with broken tip is 4 cm. in over-all length. The blade of the latter has a pronounced serrated edge and may have served as a saw rather than a projectile point.

Pendants: A thin, flat, roughly finished pendant of fine-grained reddish stone, possibly slate, about 2.5 cm. in diameter, is drilled near one edge for suspension. Also found in a roughly finished and undrilled stage was another pendant form of whitish rock, 5.8 cm. in length and 3.8 cm. in width.

Medicine or Ceremonial Objects: One small selenite crystal, two small sandstone pebbles, and one large green stone showing some polish may possibly be assignable to this category.

Paint Stones: Four small pieces and one sizable piece of hematite are unquestionably source material for the fugitive red iron oxide wash applied after firing to the exterior surfaces of a majority of painted bowls and some jars. In later Pueblo times, shaped cylinders of hematite were prevalent.

3. Bone Awls

Five bone awls were found in 1926. These ranged from 7 to 11 cm. in length. One was made of turkey bone; four were made from mammal leg bone, three with articular joint intact.

From completion of the re-excavation in 1926 until recently, no artifacts of record were found by visitors or Park personnel at Step House. Then in the course of their separate visits, Morris and Lancaster found on the floor of a pit dwelling, in about the same location, two slender tapering awls, 26 and 27 cm. in length, made of the articular end of long mammal bones. These awls may be of Pueblo III origin since they differ markedly from the characteristic stubby awls of Basket Maker III people, although several long slender awls of bone and wood have been found in Basket Maker III sites. It is presumed that these long awls were carried to the floor of the pit dwelling by sand raveling downward from higher levels of the slab wall lining or from the embankment above the bench level.

4. Perishables

Sandals: Sandals were found only in Room A. The stack of ten carbonized twined sandals with scallop toes and raised inwoven knot patterning on the soles, found on the bench, were described in that connection. The comparable single worn sandal found on the floor of Room A, undamaged by fire, had a warp of 27 coarse yucca cords, a weft of fine fiber, possibly Apocynum, both left-hand lay, and heel and toe ties of yucca fiber of right-hand lay.

Rope and Twine: One small piece of rope, made of twisted juniper bast, and odds and ends of twine made of yucca fiber, including the previously described mass of charred cordage found on the bench of Room A, the character and purpose of which could not be determined, constituted the material in this category.

Skin: Fragments of skin, with and without hair, and the charred skin bag, containing unidentified food, found on the bench of Room A, comprise finds of this character.

Native Plants: Seeds of the fruit of the broad-leafed *Yucca baccata* were numerous, and the hulls of pinyon nuts were abundant on the floor of Basket Maker III occupation and in previously excavated debris about it.

Numerous fragments of gourd rind suggested probable use of gourds as dippers; and a section of yucca root, 14 cm. in length, probably indicate use of macerated yucca root as a water sudsing and cleaning solution.

Domesticated Plants: The evidence of domesticated food plants, besides the cake of ground corn meal and the unidentified food in the charred skin bag, consisted of two squash or hard pumpkin stems, several charred corn cobs with a few kernels, and an open bean pod with two associated beans of unidentified species.

Hulled, fresh-looking beans were generously and widely distributed in the upper layers of previously excavated debris, sometimes to considerable depth. Two years later, in discussing our findings in the Step House Cave with John Wetherill, at Kayenta, he was particularly interested in what we had found, and when I mentioned the prevalence of beans, his answer was frank and forthright: "You have to have something for money when you spend your nights playing poker in a cave, and we used commissary beans."

Mammals and Birds: Other than bone awls, we found no direct evidence of the uses of mammals and birds. The only plausible explanation is that whole or cracked food bones were tossed on the fire and reduced to ash, or lay on the talus beyond our excavations, or had disintegrated on the talus, owing to dampness, frost, and centuries of exposure.



PART IV

Tree Ring Dates for Step House Basket Maker III

In 1939, under an Antiquities Act permit, Gila Pueblo collected 36 wood beam sections for dating purposes. Dr. Deric O'Bryan, Assistant Director, who collected the specimens, has generously released for inclusion in this report the following dates on the seven best specimens.

Catalog No.	Date A.D.	
	Inside	Outside
3184	497	609
3185	514	593
3188	468	626
3195	545	608*
3198	479	626
3205	459	611*
3206	490	618

In two of the dated specimens marked by a star (*), the bark ring was not preserved. The dates of the other five specimens evidence the year of cutting and probable use of beam material in the construction of the Basket Maker III dwellings, and serve to date these dwellings from A.D. 593 through a 34-year period ending in A.D. 626. Due to disturbed conditions left in the wake of the early 1890 excavations, no attempt was made to determine the priority of the dwellings by dendrochronological methods.

Douglas earlier reported⁸ one Step House Cave date of A.D. 625, and subsequently, Schulman reported⁹ one date of A.D. 610, both of which fall within this same time range.

The latest dated Basket Maker III site in Mesa Verde is Pithouse Number 1, found 1939, outlined in the walls of a very deep water-main trench that I had carefully staked on the ground so as to avoid damaging any observable evidence of prehistoric occupation. Largely on his own time, Terah L. Smiley, then serving as a seasonal ranger-naturalist, with some assistance by other park employees, excavated this pithouse with antechamber after the main was laid and backfilled to its floor level. In his excellent report Smiley states that this pithouse was constructed, as evidenced by tree-ring material, between A.D. 700 and 705.¹⁰

Of the numerous open Basket Maker III sites in Mesa Verde, only five have been scientifically investigated to this time. Generally, these Mesa Verde sites are earlier than Morris' La Plata District sites where the classic stage of Basket Maker III development was achieved in the Mesa Verde plateau region. Known and potential Basket Maker III cave sites are sparse in Mesa Verde, and it is extremely doubtful if any cave dwelling site as large as Step House will be found there in the future.

⁸Tree-Ring Bulletin, October 1938.

⁹Tree-Ring Bulletin, January 1946.

¹⁰"Pithouse, Number 1, Mesa Verde National Park," Terah L. Smiley. *American Antiquity*, Volume 14, Number 3, pp. 167-171, January 1949.



PART V

Conclusions

In view of the detail given in the body of this report on structural features and material culture of the Basket Maker III of Step House Cave, this statement is limited to a brief and general review of significant features.

This Step House Cave site, A.D. 596-626, represents the medial stage of Basket Maker III development from the presently known earliest cave site, Morris' Red Rock Valley, A.D. 473-78, to Smiley's open site, Pit House No. 1, Mesa Verde National Park, A.D. 700-705. O'Bryan's open pit house excavations for Gila Pueblo in 1948 indicates a closely comparable beginning date in Mesa Verde to Morris' earliest Basket Maker III date.

Beginning about the 600's, there was either a substantial increase in Basket Maker III population or these Mesa Verde people demonstrated a decided preference for open mesa-top dwellings. Probably both factors were involved. The Step House Cave dwellings mark the apparent beginning of this major transition.

Almost invariably, both Basket Maker and Pueblo peoples built their house structures only in caves that had exposure to sun part of the day. That practice held for the Pueblo cliff dwelling in the north end of Step House Cave but not for the Basket Maker III dwellings erected circa A.D. 600. It would appear logical to assume that by A.D. 600 the Basket Maker III had occupied a number of the best suited caves in Mesa Verde. That these caves proved equally attractive as dwelling sites to the much later Pueblo people is widely manifest.

The locations of their deep circular subterranean kivas would logically have been the choice locations for Basket Maker III semisubterranean dwellings. It is therefore reasonable to assume that kiva construction in classical Pueblo times obliterated or walled off from view the evidence of earlier Basket Maker III dwellings, and that their housing development and the leveling and clay paving of plaza and pathway floors in the remainder of the usable cave space destroyed or encased from view other lesser evidence of Basket Maker III occupation.

Since the National Park Service is charged by the Congress with preserving unimpaired the evidence of prehistoric occupation for the benefit and enjoyment of future generations, exploratory excavations below the level of existing cliff dwelling structures and floors are not practicable. This principle and policy which controlled our excavations in Step House Cave limits future Basket Maker III cave excavations in Mesa Verde and other National Park Service areas to cave floor areas not occupied by existing Pueblo structures. However rigid these limitations, there are at least two potential and promising cave sites where perhaps earlier and later or transitional Basket Maker III dwellings, associated with cliff dwellings, may be investigated.

The manner of supporting the roof over Room A in Step House represents a departure from the conventional type of Rooms B and C, which is common to open Mesa Verde dwellings, to Morris' later La Plata District, and generally in the San Juan Basin.

The range in ceramic wares from unfired mud platters to true fired pottery in a variety of standard squash pots, medium-size neck jars, and small bowl forms is characteristic of this stage of development. Advanced development was indicated by shiny black ware, use of sand temper in two exceptionally well-smoothed painted bowls, design elements of painted bowls, and extreme thinness of certain pieces of pottery.

Many will undoubtedly question my interpretation of the use of the subterranean structure with the outside draft, which later developed in the La Plata District to a larger, deeper standardized form with cobblestone lining, as a pottery firing kiln, and some may question my interpretation of the low-walled structure as a shrine.

Concern with the ancestry and history of certain basic Basket Maker II and III traits, temporally and spatially, aroused in the 1920 excavation of Cave du Pont, and brought more clearly into focus by review of findings in Step House Cave, and by findings of others elsewhere, has led to a long-range study of very interesting potentialities, the results of which to this time so far exceed the scope of this paper that it appears judicious to report the over-all results of this trial survey of the Basket Makers of the San Juan Region in a separate paper.

